A Nidec Group Company

Nidec Motors & Actuators

All for dreams™

DRIVE TECHNOLOGY 2011/12

THE **NIDEC MOTORS & ACTUATORS** DC MOTOR RANGE

MOTORS **WITHOUT GEARING**

GMP

- **Smaller diameter motors with single & double output shafts**
- Nominal torque ..... 0.05 – 0.1 Nm
- No load speed ..... 2700 – 3250 min^{-1}

GMK
GML

- **Higher torque single output shaft motors**
- Nominal torque ..... 0.12 – 0.4 Nm
- No load speed ..... 2200 – 5250 min^{-1}

MOTORS WITH **SPUR GEAR**

GMAG
GMPI

- **Motors that can address all your in-line drive requirements where you need higher torque, lower speed rotation**
- Nominal torque ..... 0.2 – 4 Nm
- No load speed ..... 17 – 200 min^{-1}

MOTORS WITH **WORM GEAR**

GMPD
GMPG

- **Low/medium torque with perpendicular output shafts**
- Nominal torque ..... 0.5 – 4 Nm
- No load speed ..... 21 – 540 min^{-1}

GMPS

- **Actuators fitted with a lead-screw to drive your linear motion needs**
- Nominal axial force ..... 1 – 2 kN
- No load speed ..... 6 mm/s

DCK31
DCK35

- **Cost competitive medium torque range worm drive motors**
- Nominal torque ..... 3 – 6 Nm
- No load speed ..... 14 – 270 min^{-1}

SWMK
SW2K
SW2L

- **Weight optimized medium torque range**
- Nominal torque ..... 0.8 – 8 Nm
- No load speed ..... 48 – 350 min^{-1}

SWMV
SWMG

- **Powerful medium & high torque worm gear motors**
- Nominal torque ..... 3 – 20 Nm
- No load speed ..... 27 – 220 min^{-1}

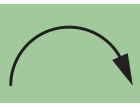
Subject to change and error, also of a technical nature. Therefore use only product drawings for design purposes. These are available from your representative.

The catalog illustrations do not all correspond to DIN requirements. The operating values indicated are valid for 20° C ambient temperature. In all cases the motors should be tested for their suitability in the customer's particular application. Specific motor designs for special customers. Motors in this catalog are not intended for the consumer. In accordance with EU regulations, these products do not require CE certification marking. Some motors have customer specific designs. They require new tooling for new designs.

TERMS, SYMBOLS AND UNITS ACCORDING TO DIN

Symbol	Unit	Term
U_N	[V]	Rated voltage
n_o	[min^{-1}]	No-load speed ± 10%
M_N	[Nm]	Nominal torque at the output shaft
M_A	[Nm]	Starting torque
i		Gear ratio
J_R	[kgm^2] x 10^{-6}	Armature load inertia
R	[mΩ]	Armature resistance, 2/4 commutator bars
L	[mH]	Armature inductance, 2/4 commutator bars

Drawing	dimensional drawing
Shaft	dimensions of shaft ends
Wiring diagram	motor wiring diagram
Connection	dimensions and positions of motor connections
Materials	BRZ = bronze, KST = plastic, ST = steel, HGW = resinbonded fabric



Direction of rotation when looking onto motor shaft

The curves show the speed and the current as a function of the torque. These are average values at room temperature. Divergences of ± 10 % are possible in the series.

CCW

CW

Preferred direction of rotation:
Worm gear motors have a preferred direction of rotation, indicated in the drawings by a larger arrow. If the motor rotates against the preferred rotation direction, power decreases by approx. 10 %.

CONVERSION OF TORQUE VALUES

(VALUES ROUNDED FOR PRACTICAL USE)

	Nm	Ncm	pcm	kpcm	kpm	oz in	in lbs	ft lbs
Nm	1	100	10.2×10^{3}	10.2	0.102	141.6	8.85	0.738
Ncm	10^{-2}	1	102	1.02×10^{-2}	1.02×10^{-3}	1.42	8.85×10^{-2}	7.38×10^{-3}
pcm	9.8×10^{-5}	9.8×10^{-3}	1	10^{-3}	10^{-5}	1.39×10^{-2}	8.68×10^{-4}	7.23×10^{-5}
kpcm	9.8×10^{-2}	9.8	1000	1	10^{-2}	13.9	0.868	7.23×10^{-2}
kpm	9.8	980	10^{5}	100	1	1390	86.8	7.23
oz in	7.06×10^{-3}	0.706	72	7.2×10^{-2}	7.2×10^{-4}	1	6.25×10^{-2}	5.2×10^{-3}
in lbs	0.113	11.3	1152	1.15	1.15×10^{-2}	16	1	8.3×10^{-2}
ft lbs	1.36	135.58	13,825	13.8	0.138	192	12	1

CONVERSION OF FORCES

(VALUES ROUNDED FOR PRACTICAL USE)

	N	kp	p	oz	lbf
N	1	0.102	102	3.6	0.225
kp	9.8	1	1000	35.27	2.2
p	9.8×10^{-3}	10^{-3}	1	3.53×10^{-2}	2.2×10^{-3}
oz	0.278	2.83×10^{-2}	28.35	1	6.25×10^{-2}
lbf	4.45	0.445	453.6	16	1

CONVERSION OF POWER

(VALUES ROUNDED FOR PRACTICAL USE)

	kW	PS	HP	kpm/s	kcal/s
kW	1	1.36	1.34	102	0.239
PS	0.735	1	0.986	75	0.176
HP	0.746	1.01	1	76	0.178
kpm/s	9.8×10^{-3}	1.33×10^{-2}	1.32×10^{-2}	1	2.34×10^{-2}
kcal/s	4.2	5.7	5.6	427	1

CONVERSION OF TEMPERATURES

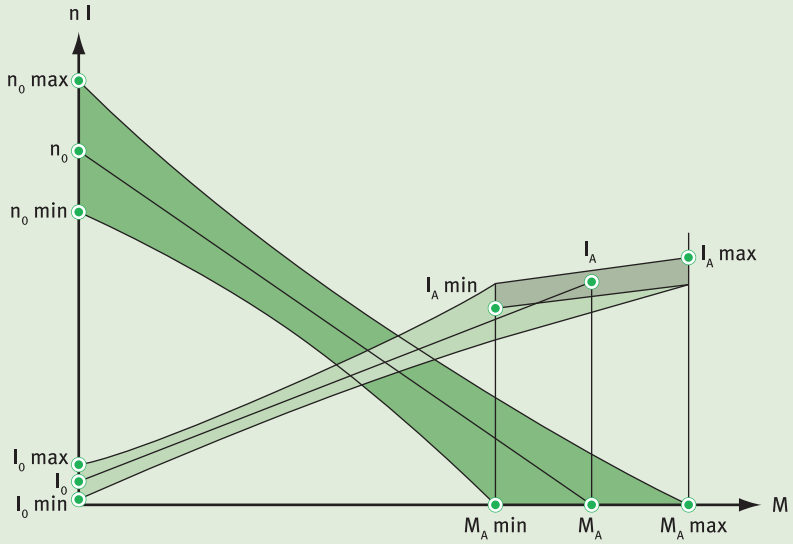
t_C [°C] Celsius	t_F [°F] Fahrenheit	T_K [K] Kelvin	T_R [°R] Rankine
$t_C = \frac{5}{9}(t_F - 32)$	$t_F = \frac{9}{5} t_C + 32$	$T_K = t_C + 273$	$T_R = \frac{9}{5}(t_C + 273)$
$t_C = \frac{5}{9} T_R - 273$		$T_K = \frac{5}{9} T_R$	
		$T_K = \frac{5}{9}(t_f + 255)$	

TOLERANCE ZONES TO ISO/R 286

(DIN 7150, 7151, 7152, 7154, 7155)

1,1 H 13:	+0.140	/	0 mm	5,1 H 11:	+0.075	/	0 mm	9 k 5:	+0.007	/	+0.001mm
1,6 H 13:	+0.140	/	0 mm	5,1 H 12:	+0.120	/	0 mm	9,4 h 11:	0	/	-0.090 mm
2,5 H 12:	+0.100	/	0 mm	5,5 h 11:	0	/	-0.075 mm	9,5 js 11:	+0.045	/	-0.045 mm
2,7 H 12:	+0.100	/	0 mm	5,5 H 13:	+0.180	/	0 mm	9,6 h 11:	0	/	-0.090 mm
3 H 9:	+0.025	/	0 mm	5,8 g 6:	-0.004	/	-0.012 mm	9,75 g 5:	-0.006	/	-0.014 mm
3 H 12:	+0.100	/	0 mm	5,9 c 9:	-0.070	/	-0.100 mm	10 f 6:	-0.013	/	-0.022 mm
3 N 9:	-0.004	/	-0.029 mm	5,9 h 10:	0	/	-0.048 mm	10 f 7:	-0.013	/	-0.028 mm
3 P 8:	-0.006	/	-0.020 mm	6 f 9:	-0.010	/	-0.040 mm	10 f 8:	-0.013	/	-0.035 mm
3 P 9:	-0.006	/	-0.031 mm	6 fg 9:	-0.006	/	-0.014 mm	10 g 5:	-0.005	/	-0.011 mm
3 P 10:	-0.006	/	-0.046 mm	6 h 6:	0	/	-0.008 mm	10 g 6:	-0.005	/	-0.014 mm
3,1 JS 10:	+0.024	/	-0.024 mm	6 h 8:	0	/	-0.018 mm	10 h 5:	0	/	-0.006 mm
3,5 H 12:	+0.120	/	0 mm	6 h 9:	0	/	-0.030 mm	10 h 7:	0	/	-0.015 mm
3,6 H 11:	+0.075	/	0 mm	6 m 6:	+0.012	/	+0.004 mm	10 h 9:	0	/	-0.036 mm
4 C 10:	+0.118	/	-0.070 mm	6,3 H 12:	+0.150	/	0 mm	11 d 10:	-0.050	/	-0.120 mm
4 h 6:	0	/	-0.008 mm	6,5 H 8:	+0.022	/	0 mm	11,2 e 10:	-0.032	/	-0.102 mm
4 h 8:	0	/	-0.018 mm	6,8 h 8:	0	/	-0.022 mm	11,5 h 11:	0	/	-0.110 mm
4 h 9:	0	/	-0.030 mm	7 h 8:	0	/	-0.022 mm	12 f 7:	-0.016	/	-0.034 mm
4 h 10:	0	/	-0.048 mm	7,6 h 11:	0	/	-0.090 mm	12 g 5:	-0.006	/	-0.014 mm
4 h 11:	0	/	-0.075 mm	8 f 6:	-0.013	/	-0.022 mm	12 h 6:	0	/	-0.011 mm
4 H 12:	+0.120	/	0 mm	8 g 6:	-0.005	/	-0.014 mm	12 h 7:	0	/	-0.018 mm
4 P 9:	-0.012	/	-0.042 mm	8 g 7:	-0.005	/	-0.020 mm	12 h 9:	0	/	-0.036 mm
4,1 h 10:	0	/	-0.048 mm	8 g 9:	-0.005	/	-0.041 mm	12 h 11:	0	/	-0.110 mm
4,1 H 11:	+0.075	/	0 mm	8 h 9:	0	/	-0.036 mm	13,4 h 11:	0	/	-0.110 mm
4,2 H 7:	+0.012	/	0 mm	8 H 9:	+0.036	/	0 mm	14 f 6:	-0.016	/	-0.027 mm
4,2 H 12:	+0.120	/	0 mm	8 h 10:	0	/	-0.058 mm	14 f 7:	-0.016	/	-0.034 mm
4,5 H 13:	+0.180	/	0 mm	8 h 11:	0	/	-0.090 mm	14 H 7:	+0.018	/	0 mm
5 c 11:	-0.070	/	-0.145 mm	8 k 5:	+0.007	/	+0.001 mm	15 f 7:	-0.016	/	-0.034 mm
5 h 6:	0	/	-0.008 mm	8,5 h 9:	0	/	-0.036 mm	15,2 h 11:	0	/	-0.110 mm
5 h 9:	0	/	-0.030 mm	8,7 h 11:	0	/	-0.090 mm	16 f 6:	-0.016	/	-0.027 mm
5 h 10:	0	/	-0.048 mm	9 D 9:	+0.076	/	+0.040 mm	18 H 8:	+0.027	/	0 mm
5 h 12:	0	/	-0.120 mm	9 h 6:	0	/	-0.009 mm	20 h 9:	0	/	-0.052 mm
5 P 9:	-0.012	/	-0.042 mm	9 h 11:	0	/	-0.090 mm	26 g 6:	-0.007	/	-0.020 mm

TOLERANCE ZONES



CHARACTERISTIC CURVES

CR	Continuous running
SO	Short operation
VSO	Very short operation
P	Power in W
P_{2N}	Nominal output power in W
P_{2max}	Maximum output power in W
P_{2SO}	Output power for short operation in W
P_{2VSO}	Output power for very short operation in W
M	Torque in Nm
M_A	Starting torque in Nm
M_N	Nominal output torque in Nm
M_{SO}	Output torque for short operation in Nm
M_{VSO}	Output torque for very short operation in Nm
n	Rotational speed in min^{-1}

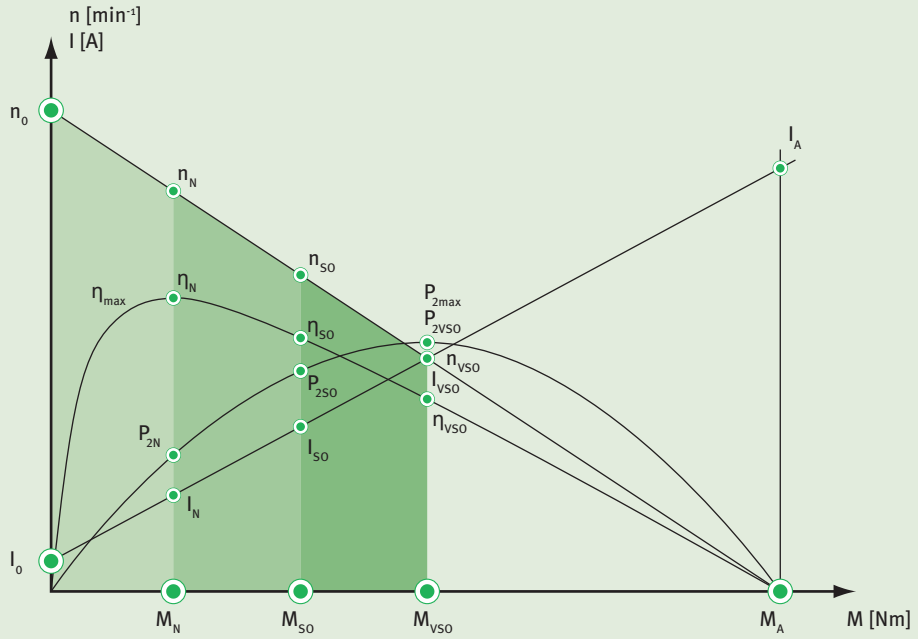
n_0	No-load speed in min^{-1}
n_N	Rated speed in min^{-1}
n_{SO}	Speed for short operation in min^{-1}
n_{VSO}	Speed for very short operation in min^{-1}
I	Current in A
I_0	No-load current in A
I_A	Starting current in A
I_N	Rated current in A
I_{SO}	Current for short operation in A
I_{VSO}	Current for very short operation in A
η	Efficiency in %
$η_N$	Rated efficiency in %
$η_{SO}$	Efficiency for short operation in %
$η_{VSO}$	Efficiency for very short operation in %

RANGE OF OPERATION

Continuous running

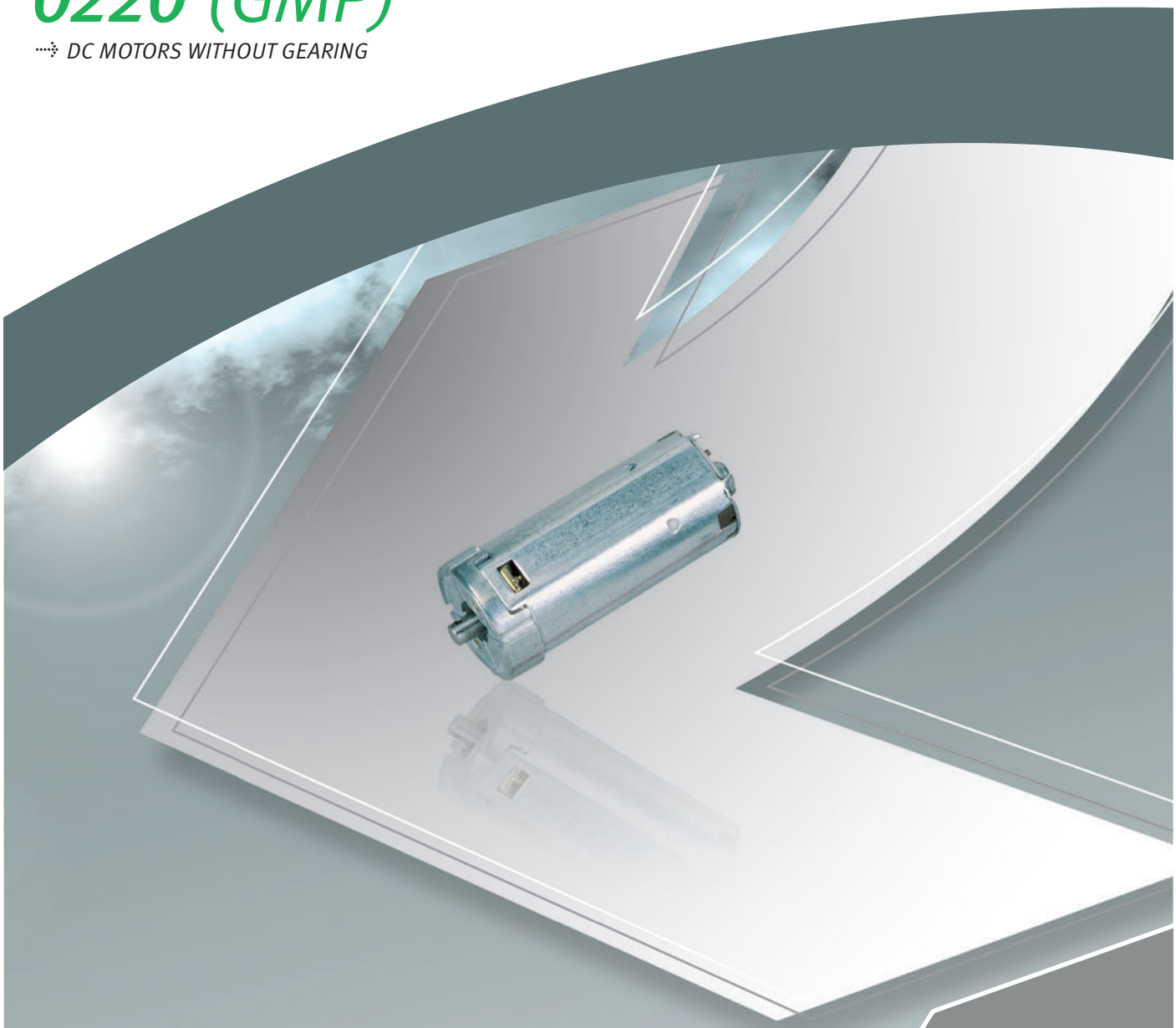
Short operation

Very short operation



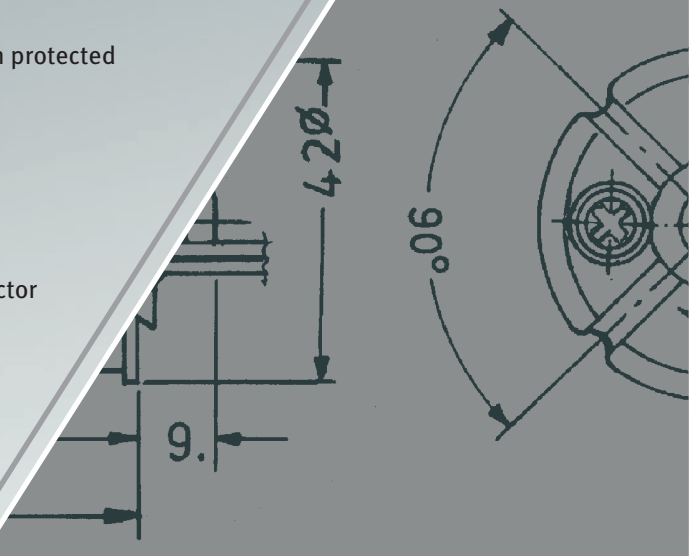
0220 (GMP)

···› DC MOTORS WITHOUT GEARING



···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	–
Gear housing:	–
Gear wheel material:	–
Lubrication:	–
Mechanical interface:	steel shaft
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional



···› INDUSTRIAL APPLICATION

Linear drives, machine construction

···› AUTOMOTIVE APPLICATION

Seat track drive

Series GMP
Motor type 402 944

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

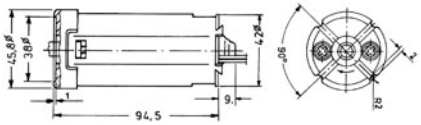
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.08
No-load speed [min^{-1}]	n_0	2,700.0
Nominal power [W]	P_N	16.2
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	7,5µH
Enclosure class	IP 30
Weight [kg]	0.550

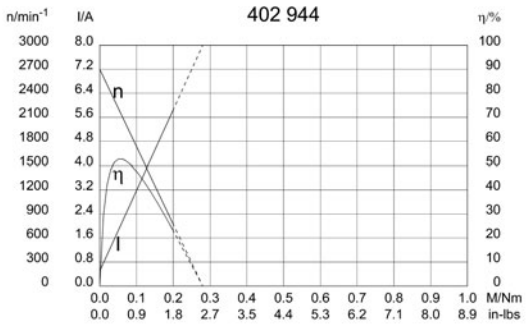
Remarks:

0220 B



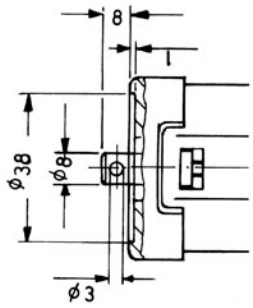
Motor picture

Characteristic curves

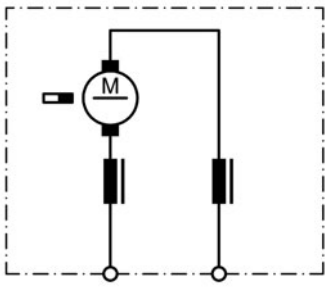


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

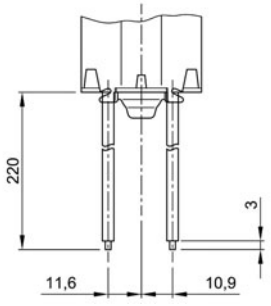
W 7



S 27



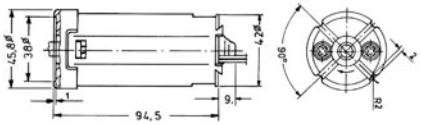
K 163



Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Ball

Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.08
No-load speed [min^{-1}]	n_0	2,800.0
Nominal power [W]	P_N	17.6
Nominal current [A]	I_N	1.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

0220 B



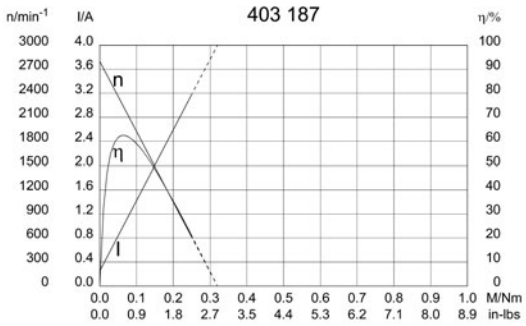
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	7.5µH, 47nF
Enclosure class	IP 30
Weight [kg]	0.550

Remarks:

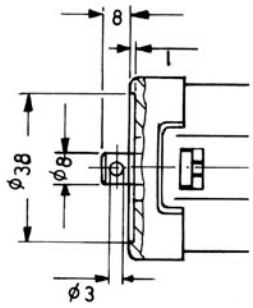
Motor picture

Characteristic curves

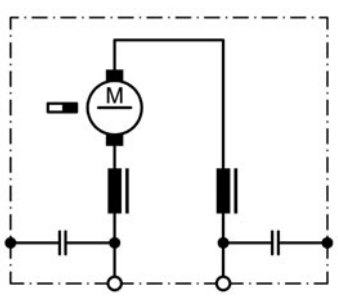


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

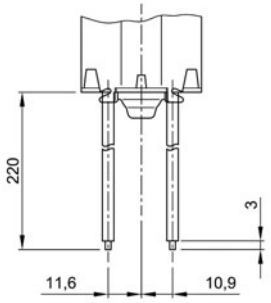
W 7



S 30



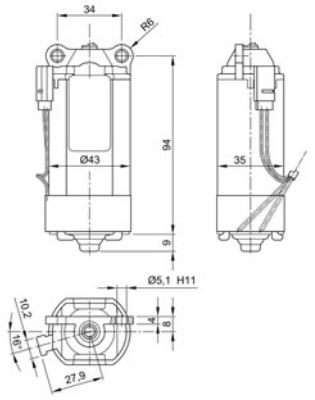
K 163



Series GMP
Motor type 404 476

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0220 D



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.05
No-load speed [min^{-1}]	n_0	3,250.0
Nominal power [W]	P_N	14.0
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

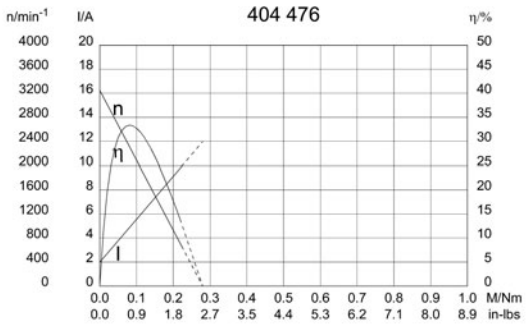
Sensor data	
Pulses	2
Output channels	1

Other data	
Gear ratio	
Gear wheel material	
Suppression components	7,5µH
Enclosure class	IP 40
Weight [kg]	0.520

Remarks:

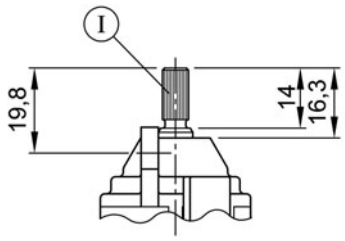
Motor picture

Characteristic curves



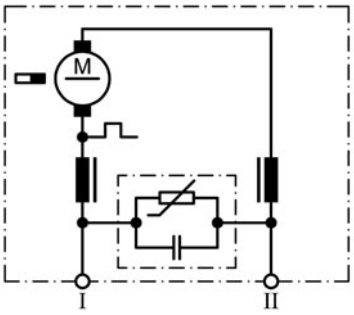
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 256



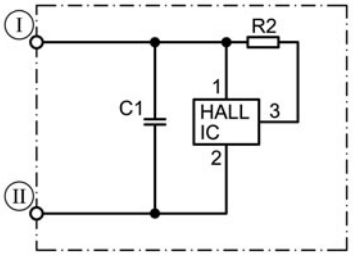
I Tapered splines 5 x 6 DIN 5481

S 82



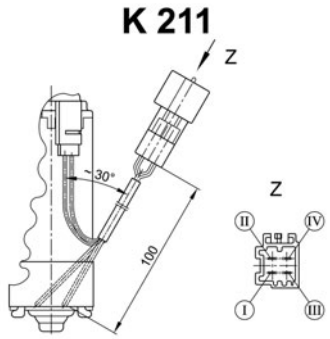
I Terminal 1, green
II Terminal 2, black

S 92



I Terminal 3, + , red
II Terminal 4, - , brown

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



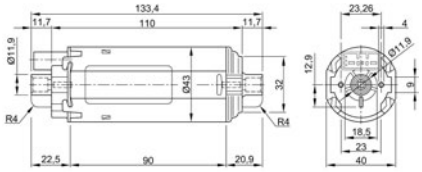
I Terminal 1, motor, green
II Terminal 2, motor, black
III Terminal 3, Hall-IC + , red
IV Terminal 4, Hall-IC - , brown

Notes

Series GMP
Motor type 404 743

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0220 F



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.10
No-load speed [min^{-1}]	n_0	2,700.0
Nominal power [W]	P_N	21.2
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

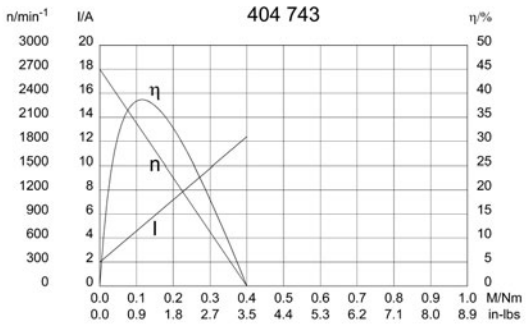
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	2,5µH, 47nF ( )
Enclosure class	IP 40
Weight [kg]	0.560

Remarks:

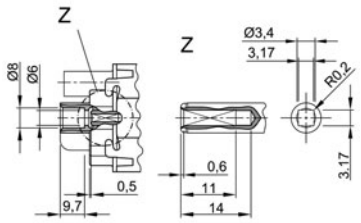
Motor picture

Characteristic curves

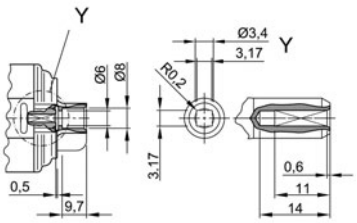


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

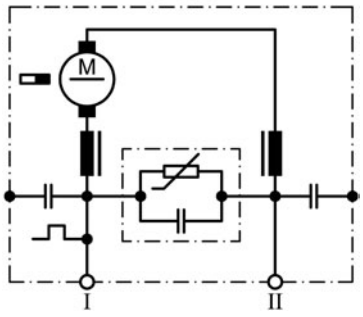
W 266



W 267



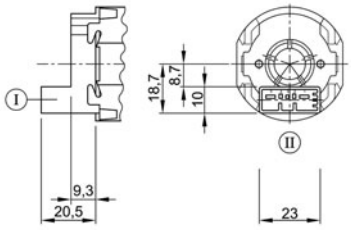
S 93



I Terminal 1
II Terminal 5

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



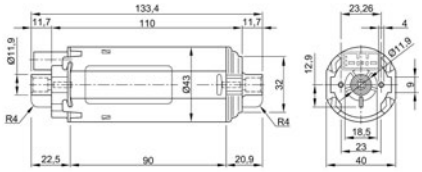
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMP
Motor type 404 744

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0220 F



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.10
No-load speed [min^{-1}]	n_0	2,700.0
Nominal power [W]	P_N	21.2
Nominal current [A]	I_N	4.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

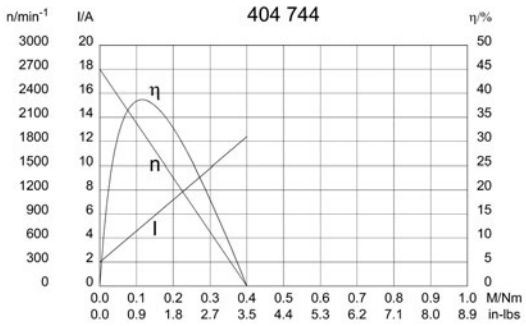
Sensor data	
Pulses	1
Output channels	1

Other data	
Gear ratio	
Gear wheel material	
Suppression components	2,5µH, 47nF
Enclosure class	IP 40
Weight [kg]	0.560

Remarks:

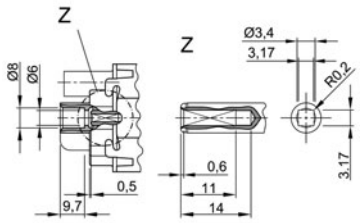
Motor picture

Characteristic curves

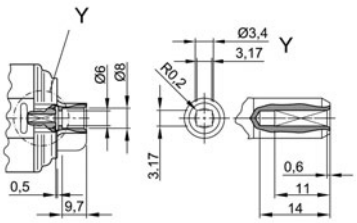


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

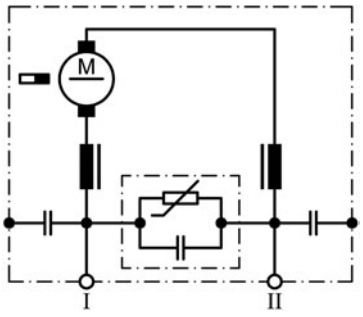
W 266



W 267



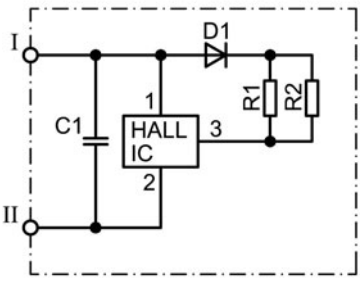
S 86



I Terminal 1
II Terminal 5

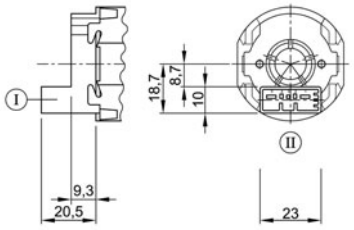
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

S 85



I Terminal 4, Hall-IC +
II Terminal 2, Hall-IC -

K 220



Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

Notes

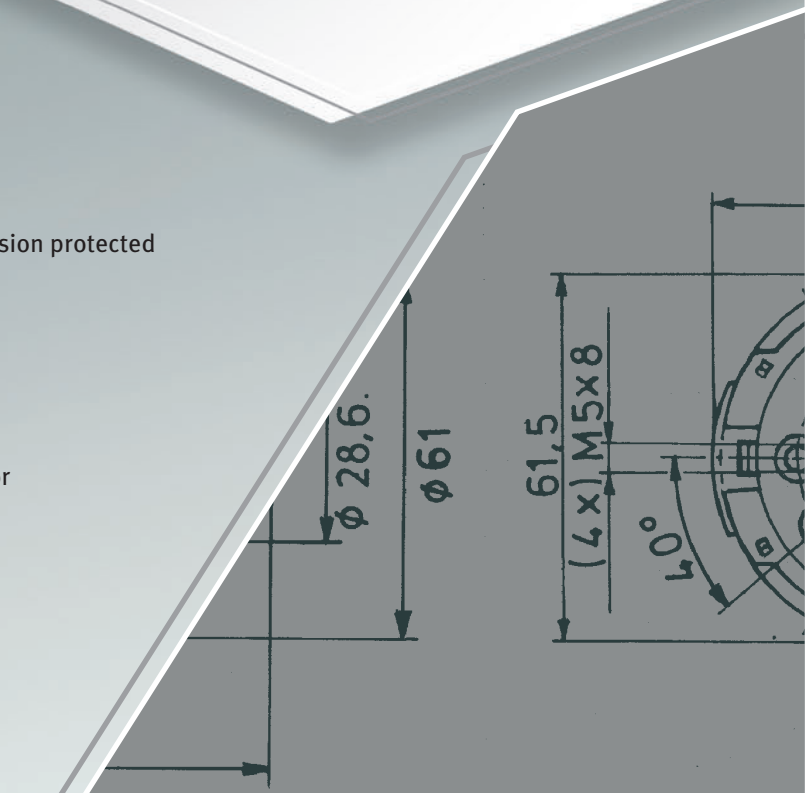
Notes

0272 (GMK)

···› DC MOTORS WITHOUT GEARING

···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	–
Gear housing:	–
Gear wheel material:	–
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional



···› INDUSTRIAL APPLICATION

Linear drives

···› AUTOMOTIVE APPLICATION

Electric torque management,
Automated manual transmission

Series GMK
Motor type 404 284

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

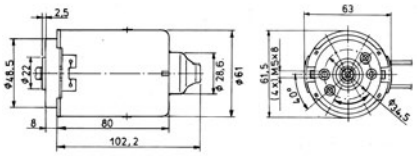
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.19
No-load speed [min^{-1}]	n_0	3,100.0
Nominal power [W]	P_N	52.7
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH
Enclosure class	IP 30
Weight [kg]	0.900

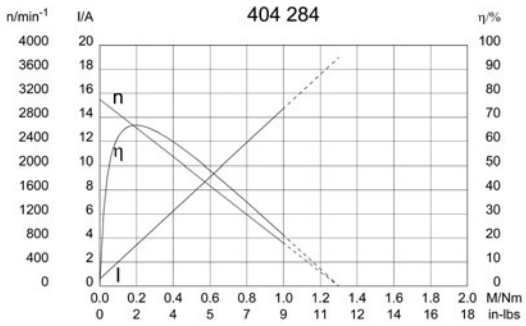
Remarks: 1 start worm

0272 A



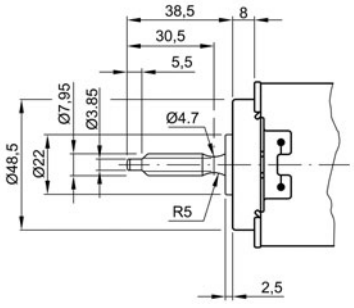
Motor picture

Characteristic curves

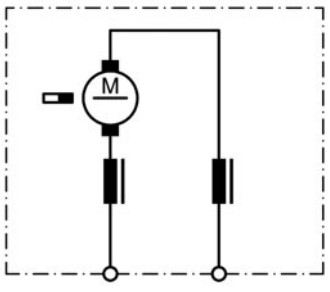


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

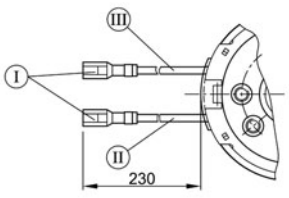
W 220



S 27



K 180



no of starts 1, **lead angle** 9°, **pressure angle** 10°, **module** 1, **pitch** 3,14159 mm (0,124")

I Blade terminal receptacles2,8 x 0,8 DIN 46 247
II green
III red

Series GMK
Motor type 404 382

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

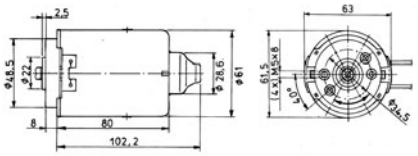
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.12
No-load speed [min^{-1}]	n_0	5,250.0
Nominal power [W]	P_N	58.8
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.900

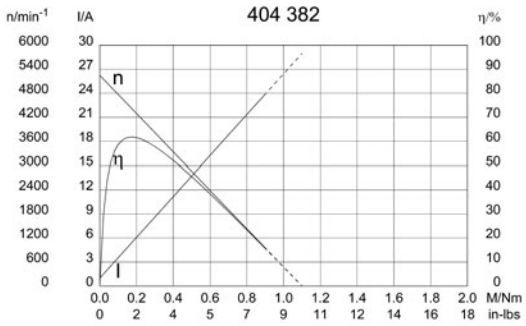
Remarks:

0272 A



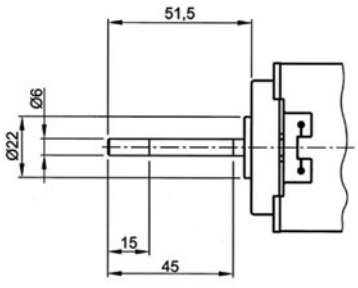
Motor picture

Characteristic curves

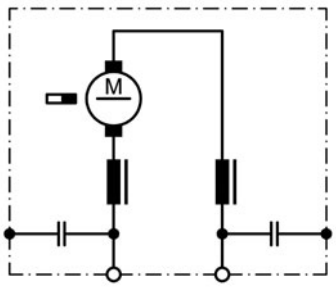


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

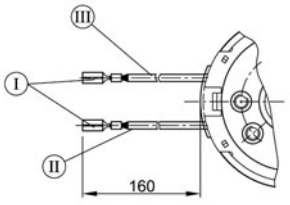
W 232



S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GMK
Motor type 404 384

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

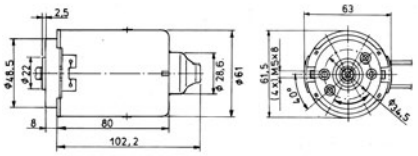
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.12
No-load speed [min^{-1}]	n_0	3,800.0
Nominal power [W]	P_N	43.9
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.900

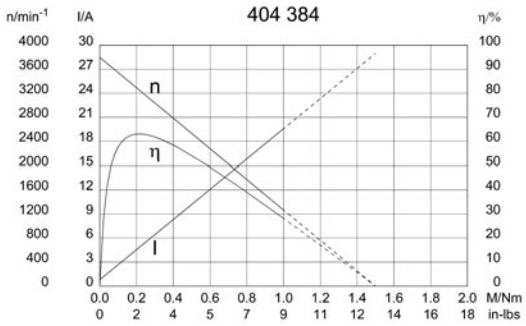
Remarks: 4 start worm

0272 A



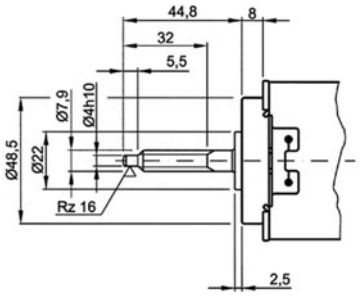
Motor picture

Characteristic curves

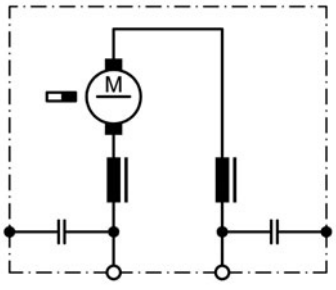


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

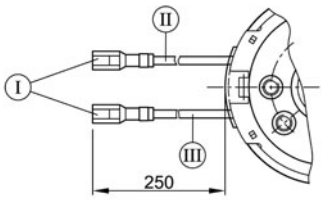
W 218



S 30



K 189



no of starts 4 ,**lead angle** 30°31'35", **pressure angle**: 15°, **pitch** 11.6707 mm (0,459"), **module** 0,8

I Receptacle for tabs 2,8 x 0,8 DIN 46 247
II red
III black

Series GMK
Motor type 404 753

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

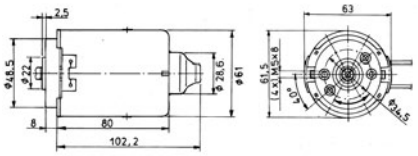
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.35
No-load speed [min^{-1}]	n_0	3,000.0
Nominal power [W]	P_N	79.2
Nominal current [A]	I_N	9.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	0.900

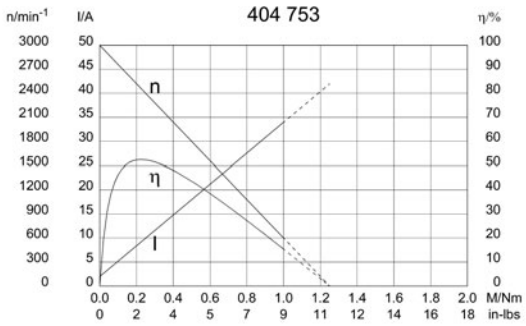
Remarks:

0272 A



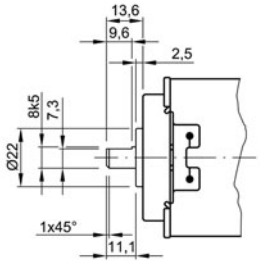
Motor picture

Characteristic curves

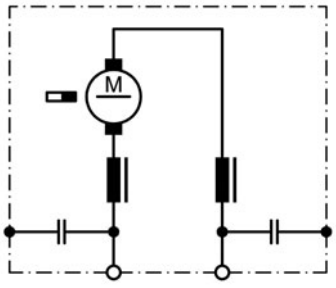


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

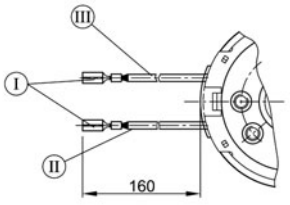
W 280



S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GMK
Motor type 404 757

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

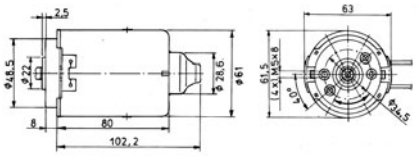
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.30
No-load speed [min^{-1}]	n_0	2,200.0
Nominal power [W]	P_N	53.2
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	0.890

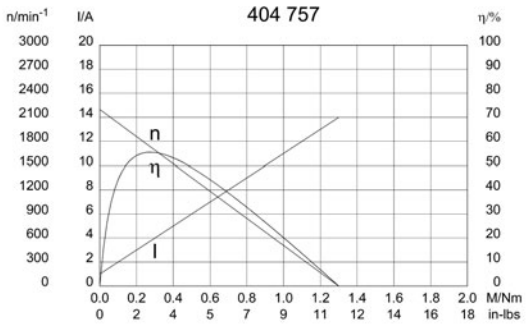
Remarks:

0272 A



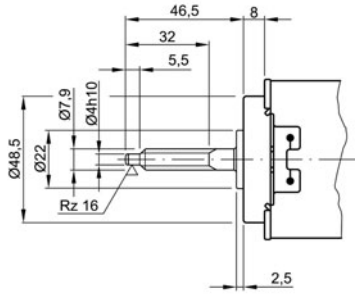
Motor picture

Characteristic curves



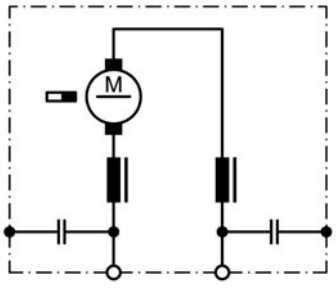
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 281

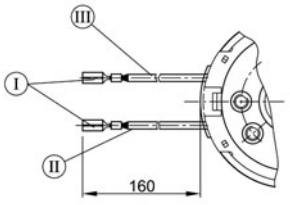


no of starts 2 **, lead angle** 19°48'54", **pressure angle** 15°, **pitch** 3,141 mm (0,124"), **module** 1

S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GMK
Motor type 404 880

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

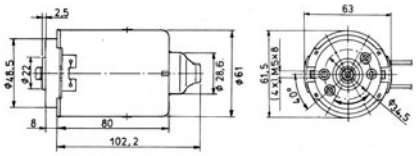
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.15
No-load speed [min^{-1}]	n_0	2,200.0
Nominal power [W]	P_N	30.9
Nominal current [A]	I_N	2.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH
Enclosure class	IP 30
Weight [kg]	0.900

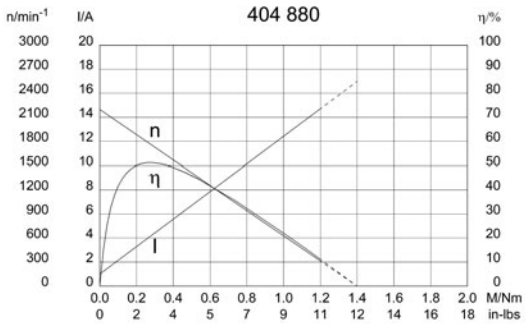
Remarks: 3 start worm

0272 A



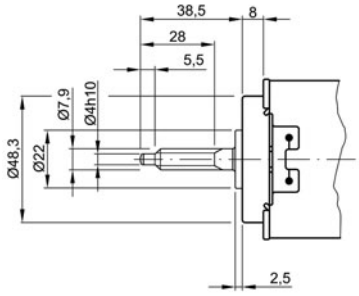
Motor picture

Characteristic curves

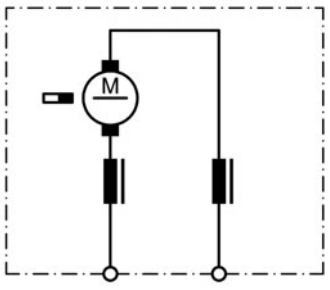


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

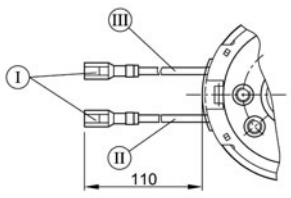
W 300



S 27



K 264



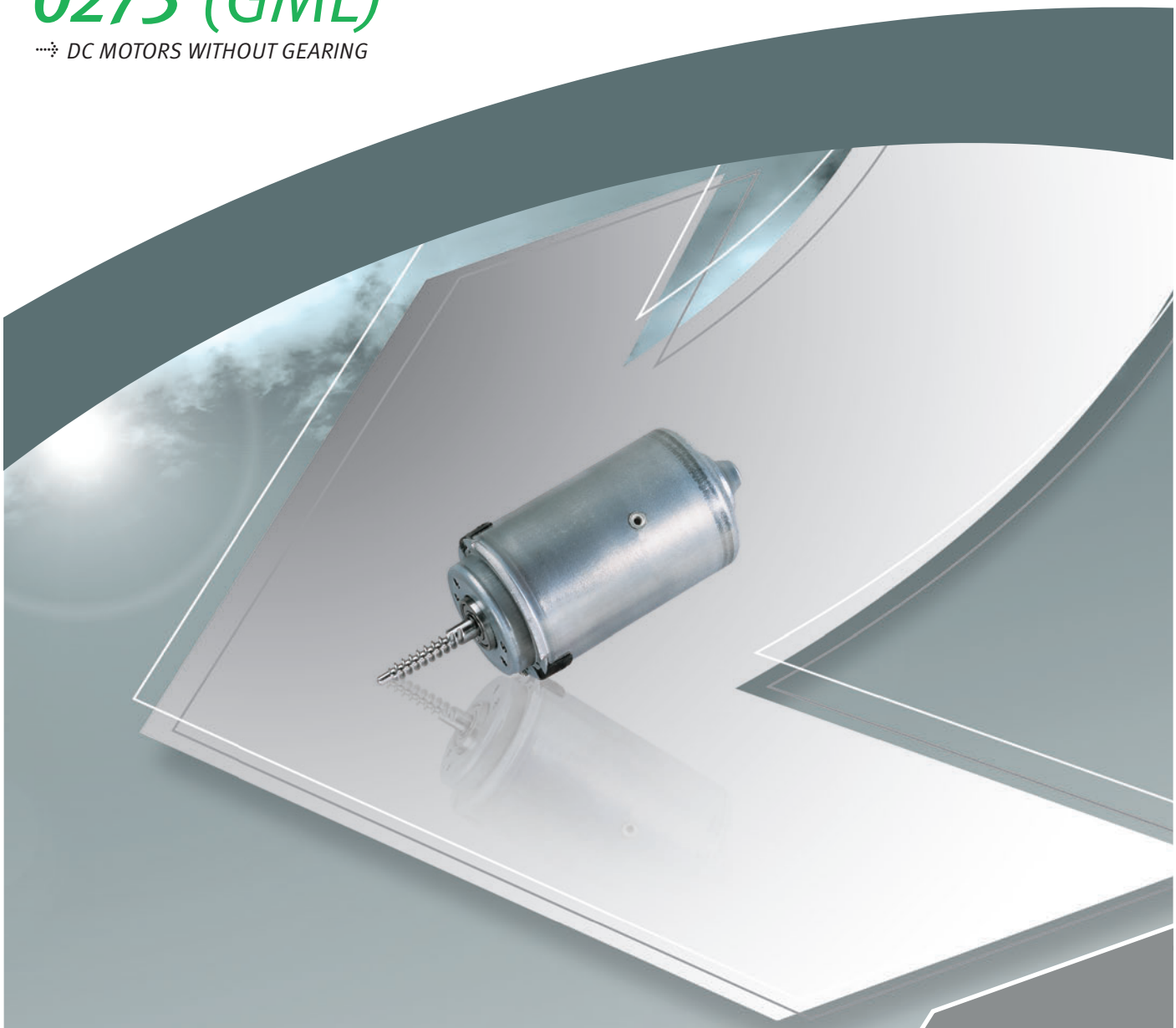
no of starts 3, **lead angle** 30°33'44", **pressure angle** 15°, **module 1**, **pitch** 3,141 mm (0,124")

I Receptacle for tabs 2,8 x 0,8 DIN 46 247
II green
III red

Notes

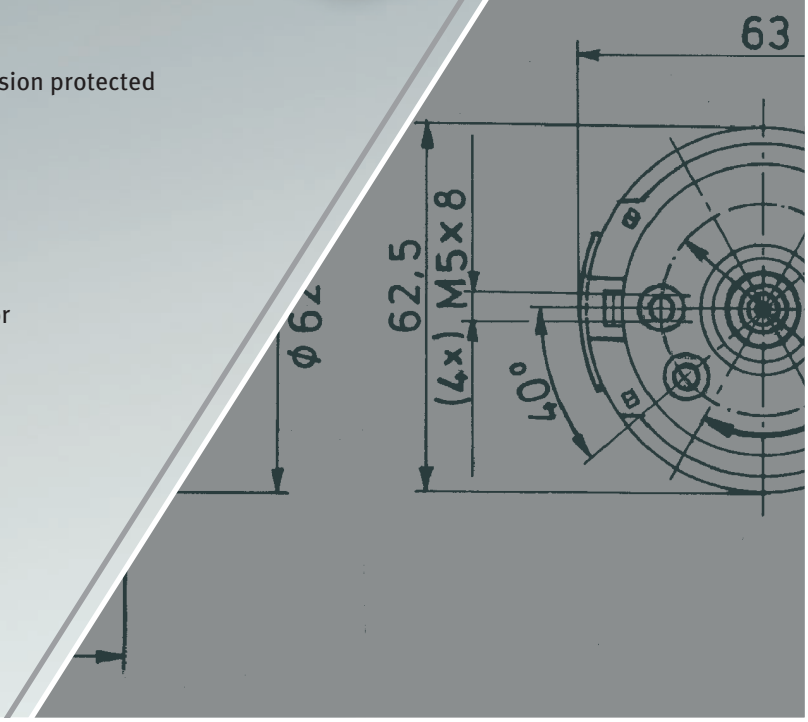
0273 (GML)

···› DC MOTORS WITHOUT GEARING



···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	–
Gear housing:	–
Gear wheel material:	–
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	leads with connector
Sensor:	–
Thermal protection:	optional
EMC suppression:	optional



···› INDUSTRIAL APPLICATION

Linear drives

···› AUTOMOTIVE APPLICATION

Electric torque management,
Automated manual transmission

Series GML
Motor type 404 469

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B-Sleeve

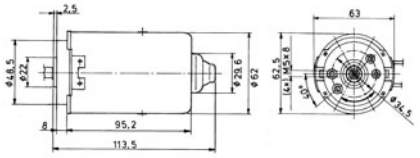
Performance data		
Rated voltage [V]	U_N	36
Nominal torque [Nm]	M_N	0.20
No-load speed [min^{-1}]	n_0	4,100.0
Nominal power [W]	P_N	79.7
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.150

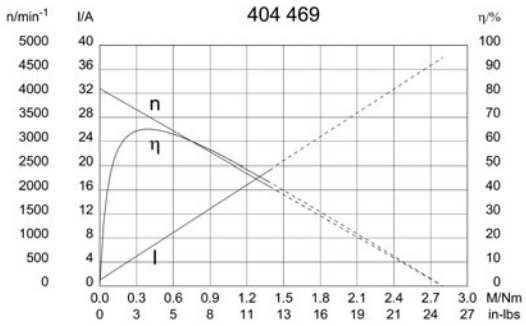
Remarks:

0273 A



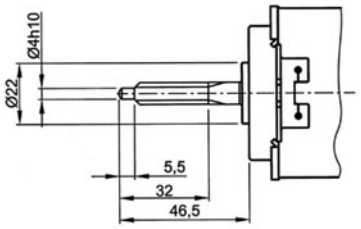
Motor picture

Characteristic curves



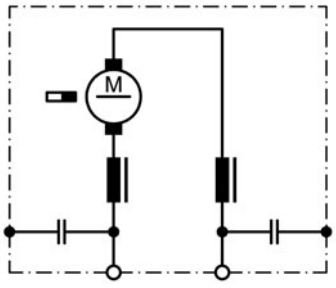
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 233

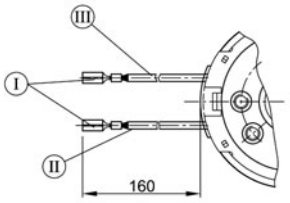


no of starts 2, **lead angle** 19°48'54", **pressure angle** 15°, **module** 1, **pitch** 3,141 mm (0,124")

S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GML
Motor type 404 536

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

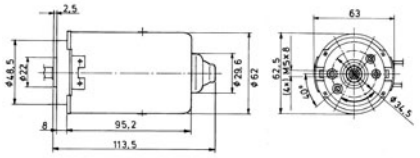
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.30
No-load speed [min^{-1}]	n_0	4,000.0
Nominal power [W]	P_N	107
Nominal current [A]	I_N	7.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.150

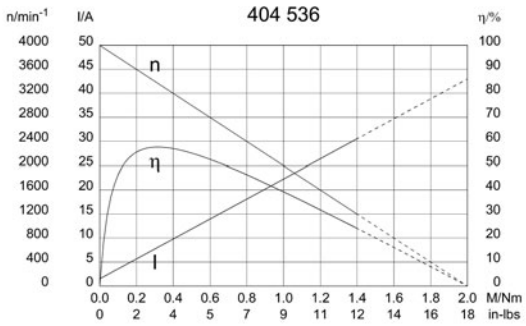
Remarks:

0273 A



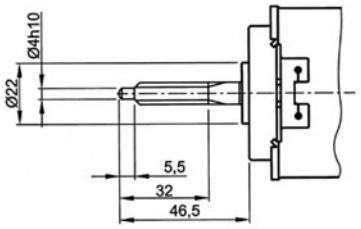
Motor picture

Characteristic curves



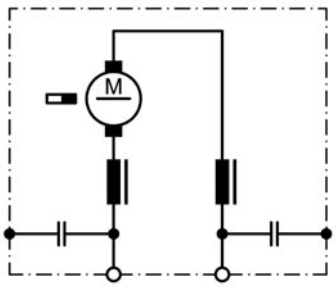
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 233

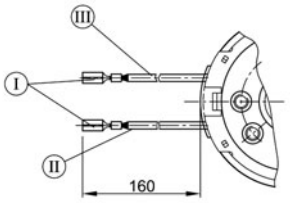


no of starts 2, **lead angle** 19°48'54", **pressure angle** 15°, **module** 1, **pitch** 3,141 mm (0,124")

S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GML
Motor type 404 596

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

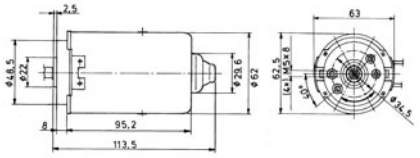
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.20
No-load speed [min^{-1}]	n_0	3,750.0
Nominal power [W]	P_N	67.3
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.150

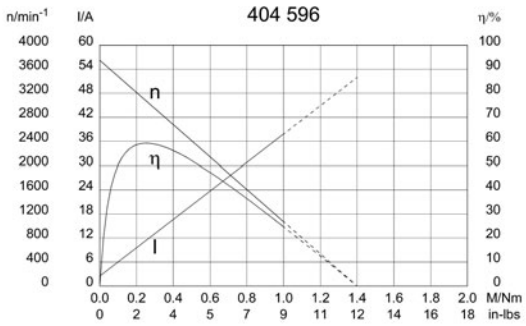
Remarks:

0273 A



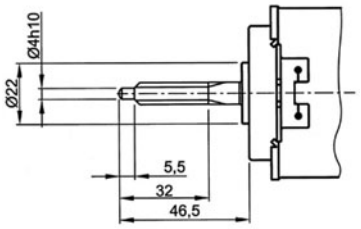
Motor picture

Characteristic curves



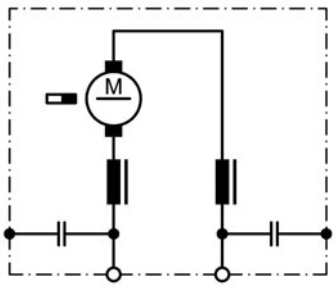
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 233

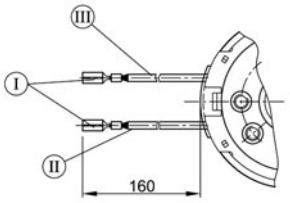


no of starts 2, **lead angle** 19°48'54", **pressure angle** 15°, **module** 1, **pitch** 3,141 mm (0,124")

S 30



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GML
Motor type 404 621

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

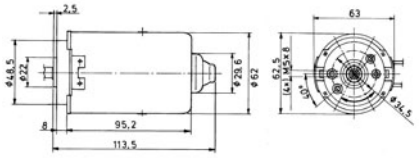
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.20
No-load speed [min^{-1}]	n_0	1,900.0
Nominal power [W]	P_N	32.6
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	Gearless
Gear wheel material	
Suppression components	5.0µH
Enclosure class	IP30
Weight [kg]	1.150

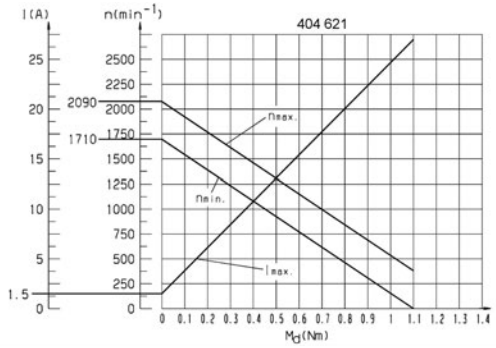
Remarks:

0273 A

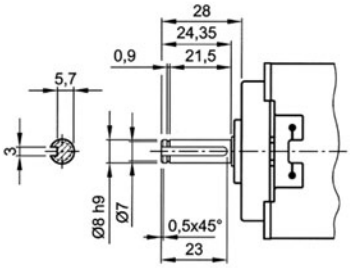


Motor picture

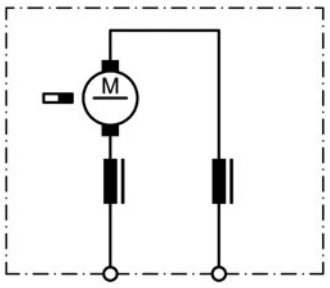
Characteristic curves



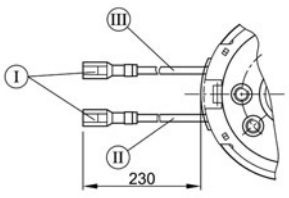
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 27



K 180



I Blade terminal receptacles2,8 x 0,8 DIN 46 247
II green
III red

Series GML
Motor type 404 890

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

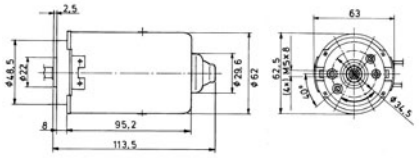
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.50
No-load speed [min^{-1}]	n_0	2,500.0
Nominal power [W]	P_N	96.5
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	Gearless
Gear wheel material	
Suppression components	5.0µH, 1nF
Enclosure class	IP30
Weight [kg]	1.150

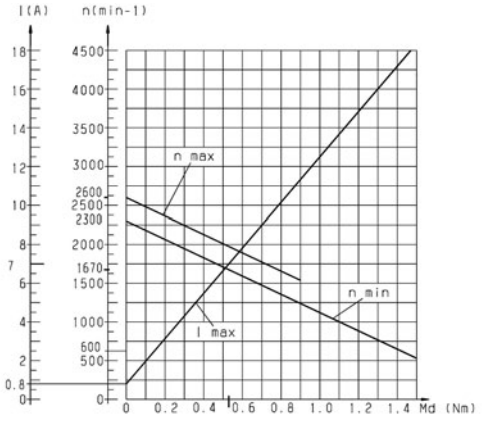
Remarks:

0273 A

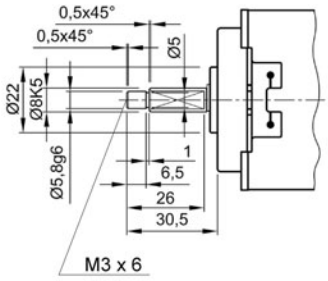


Motor picture

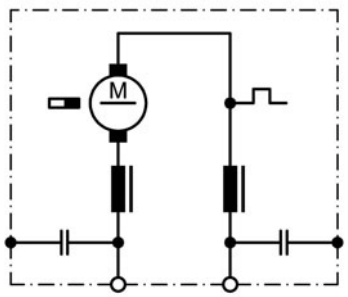
Characteristic curves



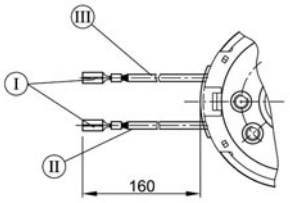
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 74



K 190



I Receptacles for tabs 2,8 x 0,8 DIN 46 247
II black
III red

Series GML
Motor type 404 965

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

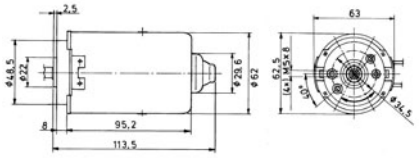
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.30
No-load speed [min^{-1}]	n_0	3,800.0
Nominal power [W]	P_N	105
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.100

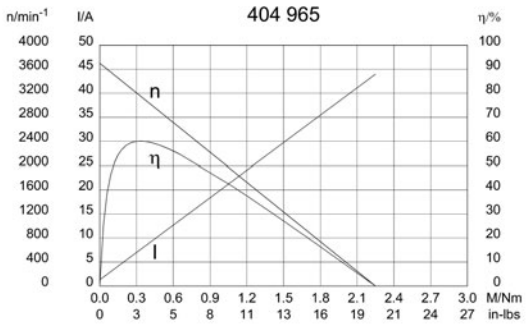
Remarks:

0273 A



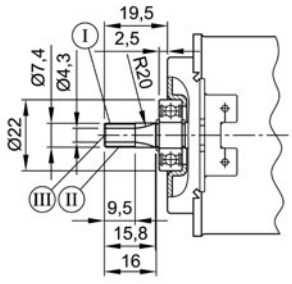
Motor picture

Characteristic curves



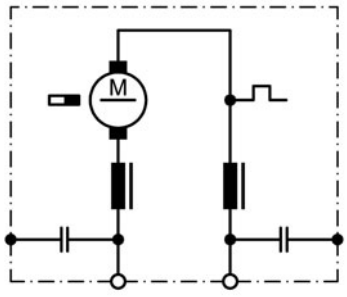
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 325

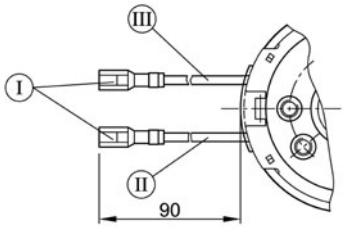


no of starts 7, **lead angle** 20°, **pressure angle** 20°, **module** 0,7, **pitch** 2,1991 mm (0,087"), induction hardened surface,

S 74



K 317



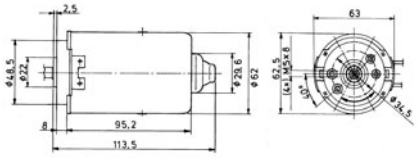
I Receptacle for tabs 6,3 x 0,8 G&H 35040.213.011
II red
III green

Series GML
Motor type 404 966

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.30
No-load speed [min^{-1}]	n_0	3,730.0
Nominal power [W]	P_N	99.2
Nominal current [A]	I_N	16.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

0273 A



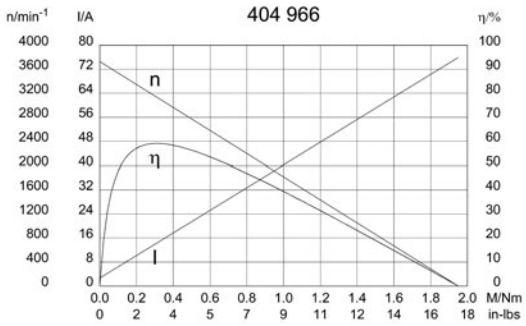
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.100

Remarks:

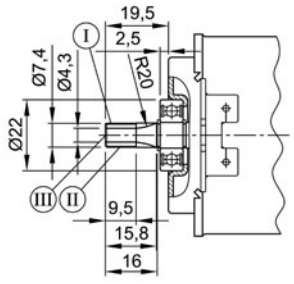
Motor picture

Characteristic curves



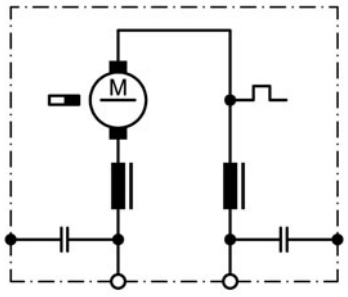
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 325

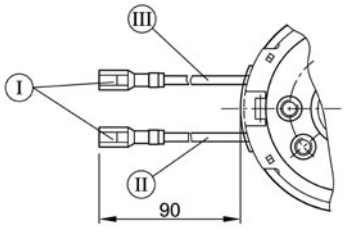


no of starts 7, **lead angle** 20°, **pressure angle** 20°, **module** 0,7, **pitch** 2,1991 mm (0,087"), induction hardened surface,

S 74



K 317



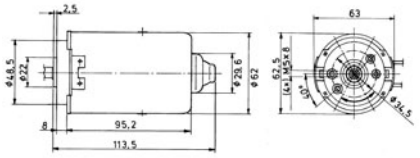
I Receptacle for tabs 6,3 x 0,8
G&H 35040.213.011
II red
III green

Series GML
Motor type 404 967

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

Performance data		
Rated voltage [V]	U_N	36
Nominal torque [Nm]	M_N	0.30
No-load speed [min^{-1}]	n_0	3,900.0
Nominal power [W]	P_N	109
Nominal current [A]	I_N	7.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

0273 A



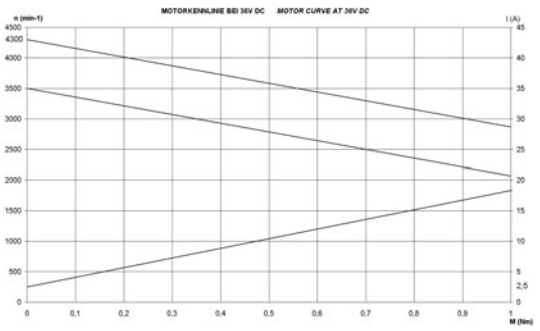
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	
Gear wheel material	
Suppression components	5µH, 10nF
Enclosure class	IP 30
Weight [kg]	1.100

Remarks:

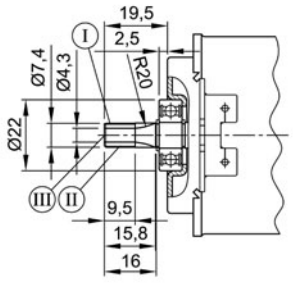
Motor picture

Characteristic curves

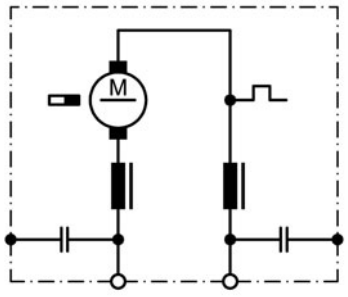


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

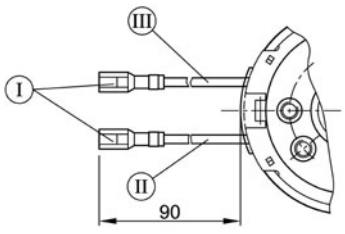
W 325



S 74



K 317



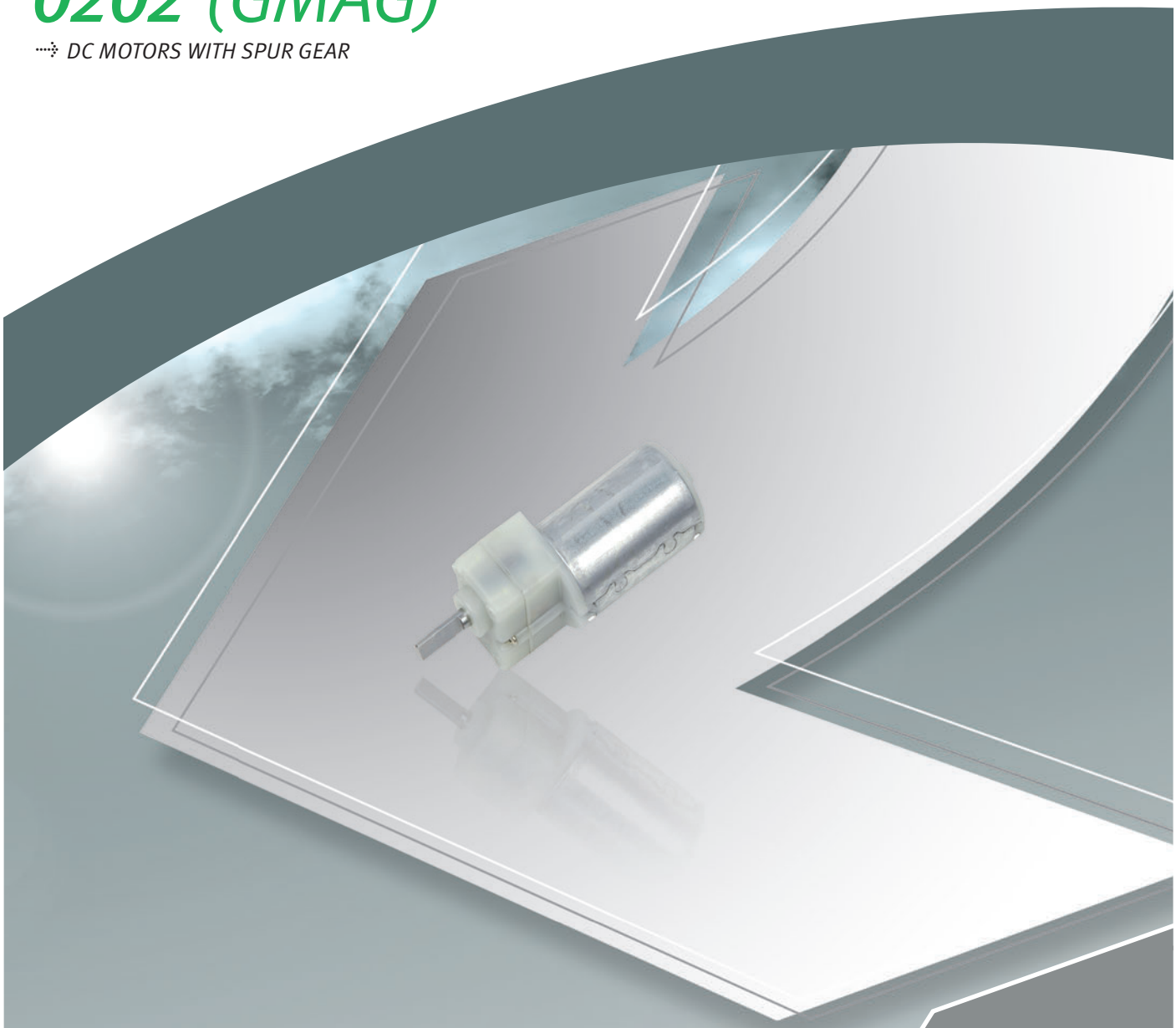
no of starts 7, **lead angle** 20°, **pressure angle** 20°, **module** 0,7, **pitch** 2,1991 mm (0,087"), induction hardened surface,

I Receptacle for tabs 6,3 x 0,8 G&H 35040.213.011
II red
III green

Notes

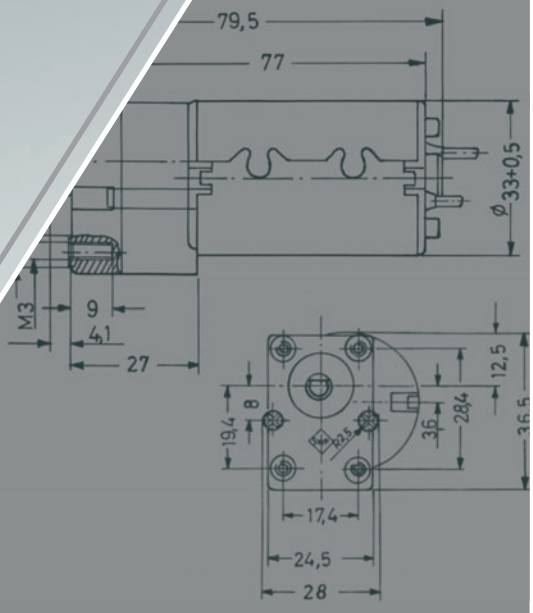
0202 (GMAG)

···› DC MOTORS WITH SPUR GEAR



···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	spur gear
Gear housing:	plastic
Gear wheel material:	steel or plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	tinned leads or with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

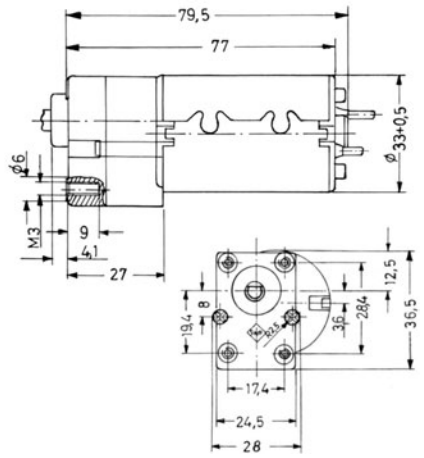


···› APPLICATION

Automatic machines, Constructional engineering
Business machines, Laboratory appliances
Medical appliances, Traffic & communications
technology, Photographic/optical equipment

Series GMAG
Motor type 402 757

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.24
No-load speed [min^{-1}]	n_0	17.0
Nominal power [W]	P_N	0.37
Nominal current [A]	I_N	0.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

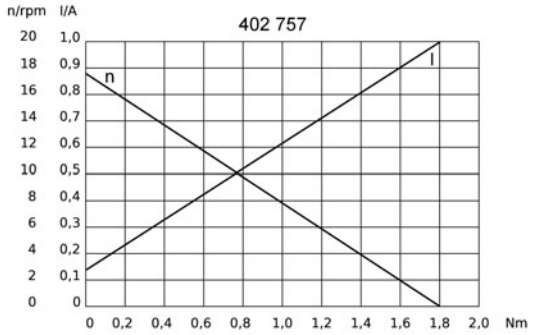
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	109/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.180

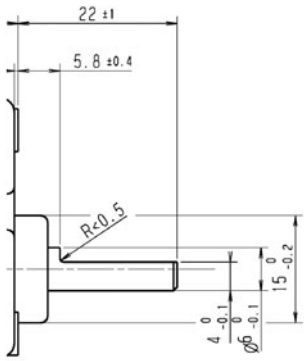
Remarks:

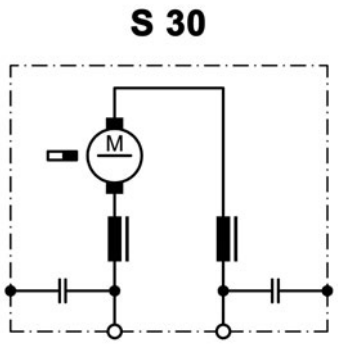
Motor picture

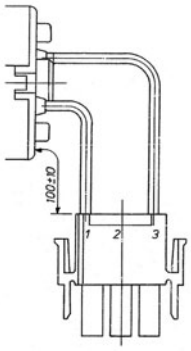
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

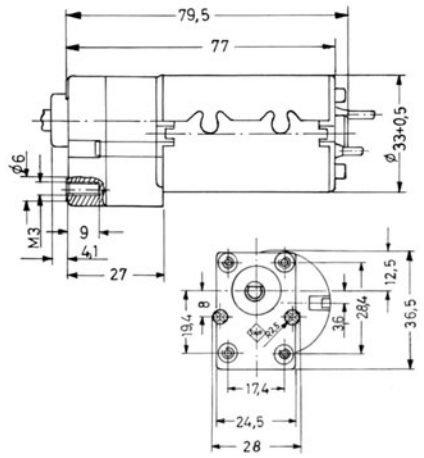






Series GMAG
Motor type 402 781

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.50
No-load speed [min^{-1}]	n_0	55.0
Nominal power [W]	P_N	2.56
Nominal current [A]	I_N	0.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

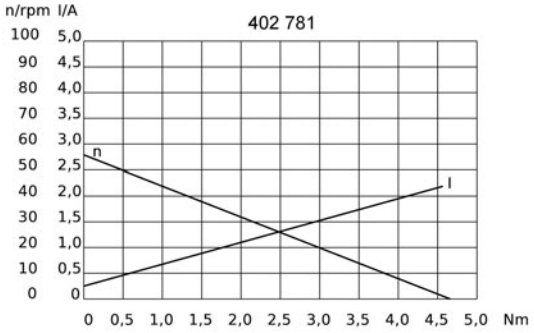
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	109/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.180

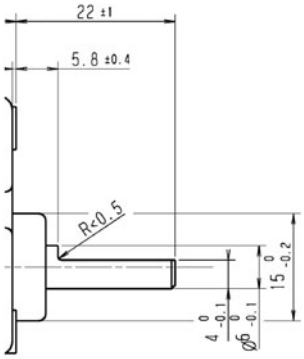
Remarks:

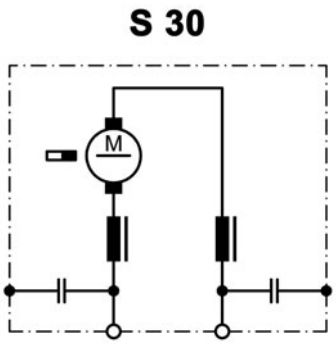
Motor picture

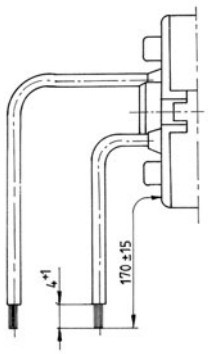
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

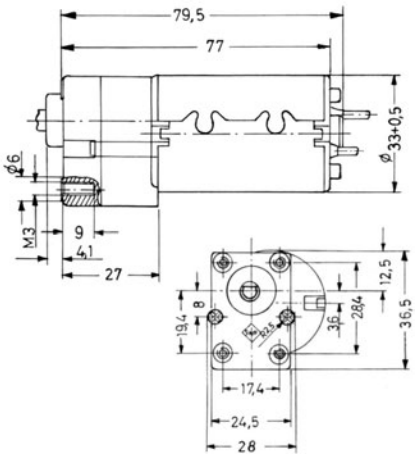






Series GMAG
Motor type 402 907

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.04
No-load speed [min^{-1}]	n_0	300.0
Nominal power [W]	P_N	1.07
Nominal current [A]	I_N	0.2
Nominal force [kN]	F_N	0.00
Duty cycle		s3

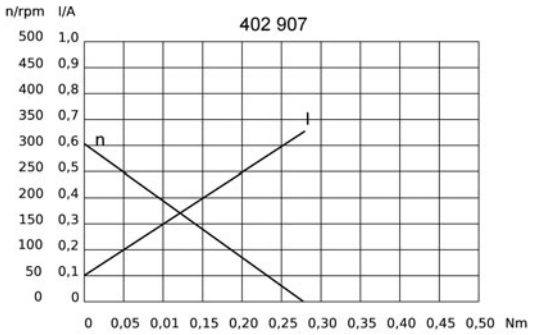
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	9.7/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.180

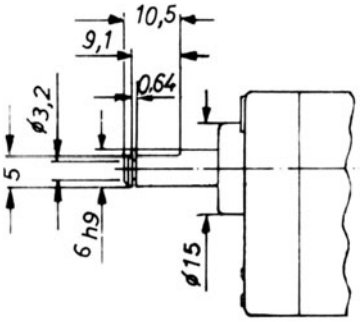
Remarks:

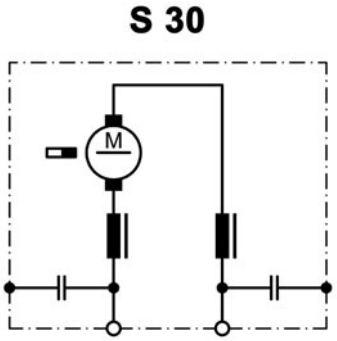
Motor picture

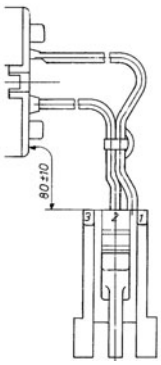
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



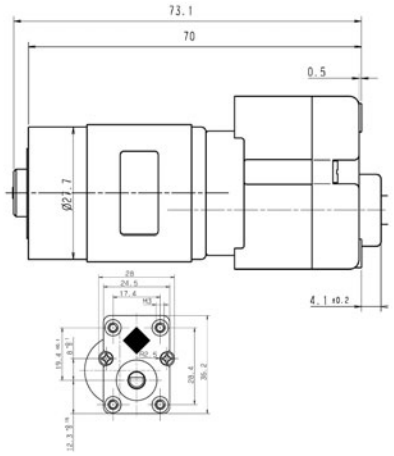




Connector Burndy
Pins: SWM 1EF TV2
Housing: SMS 2p-1

Series GMAG
Motor type 404 326

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.20
No-load speed [min^{-1}]	n_0	135.0
Nominal power [W]	P_N	2.26
Nominal current [A]	I_N	0.3
Nominal force [kN]	F_N	0.00
Duty cycle		s3

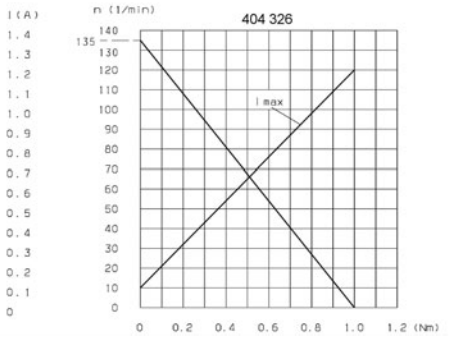
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	43/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.180

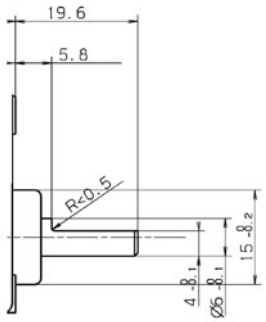
Remarks:

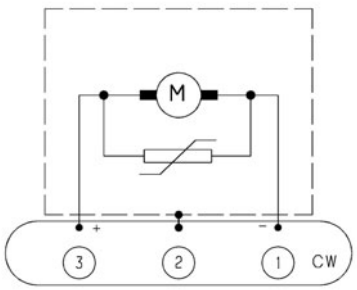
Motor picture

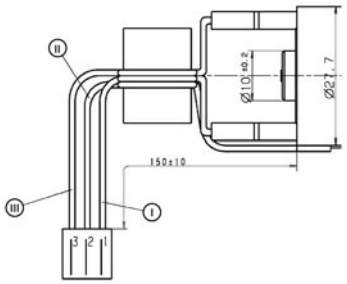
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



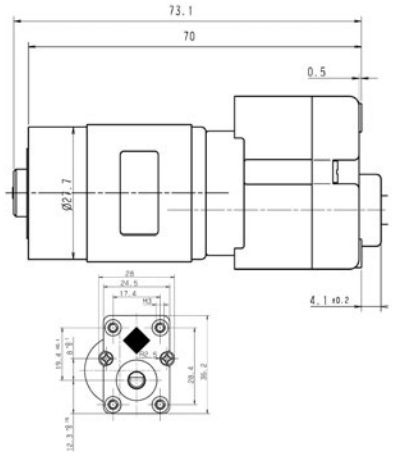




Housing: AMP-Nr.: 1-480 700-0
Pins: AMP-Nr.: 350 570-1
I: black
II: yellow/green
III: red

Series GMAG
Motor type 404 327

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.50
No-load speed [min^{-1}]	n_0	65.0
Nominal power [W]	P_N	2.84
Nominal current [A]	I_N	0.4
Nominal force [kN]	F_N	0.00
Duty cycle		s3

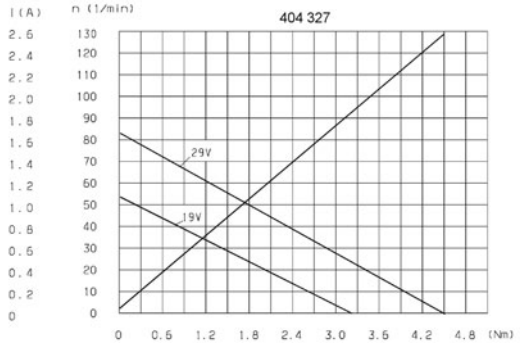
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	109/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.180

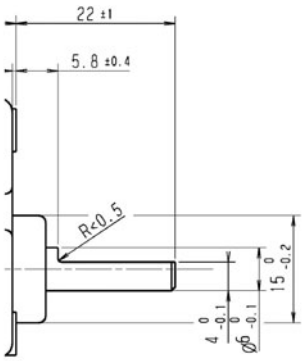
Remarks:

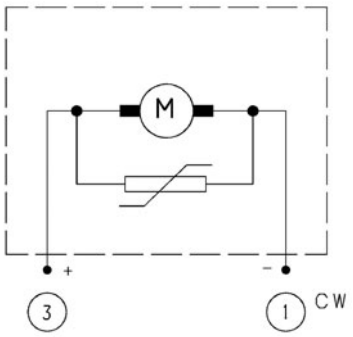
Motor picture

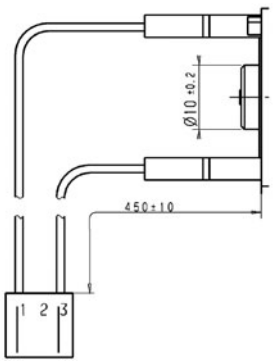
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







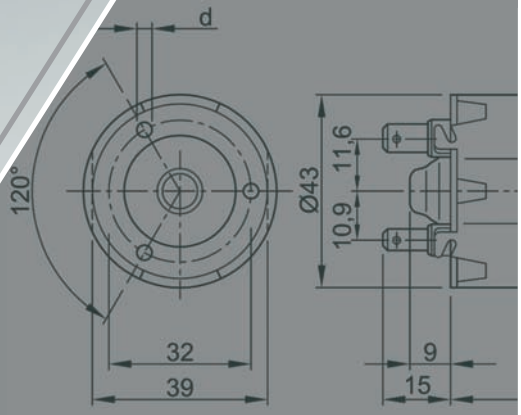
Housing: AMP-Nr. 1-480 700-0
Pins: AMP-Nr. 350 687-1

0231 (GMPI)

···› DC MOTORS WITH SPUR GEAR

···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	spur gear
Gear housing:	plastic
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional



···› INDUSTRIAL APPLICATION

Linear actuators, home automation

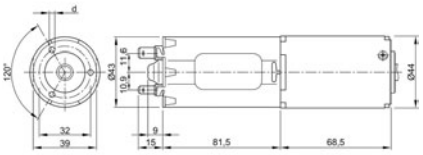
···› AUTOMOTIVE APPLICATION

Spoiler adjustment

Series GMPI
Motor type 404 465

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0231 A



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	210.0
Nominal power [W]	P_N	72.0
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

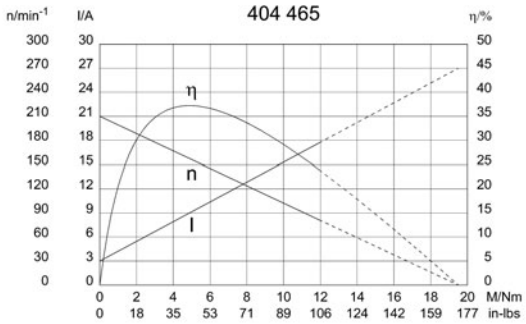
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	39.7/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP30
Weight [kg]	0.630

Remarks: d = 3,3mm, for selftapping screw 4mm (shape Remform)

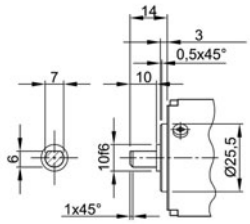
Motor picture

Characteristic curves

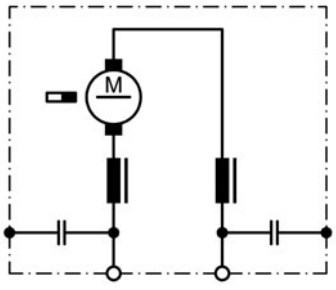


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

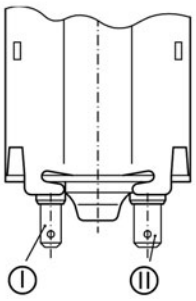
W 268



S 30



K 117

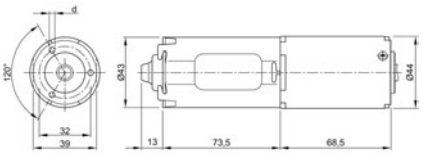


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPI
Motor type 404 636

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0231 C



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	178.0
Nominal power [W]	P_N	20.0
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

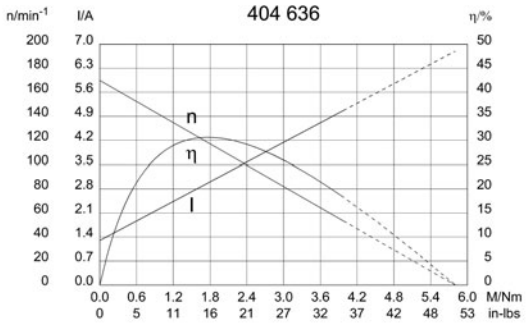
Sensor data	
Pulses	20
Output channels	2

Other data	
Gear ratio	20/1
Gear wheel material	plastic
Suppression components	4µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.750

Remarks: d = 3,3mm, for self-cutting screw 4mm (shape Remform)

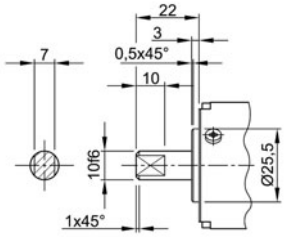
Motor picture

Characteristic curves

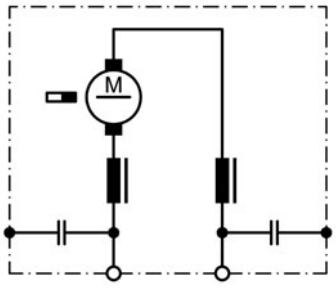


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

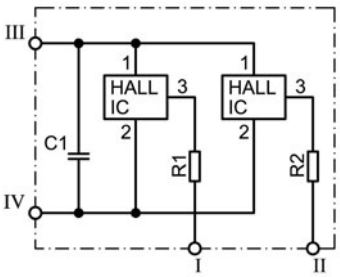
W 249



S 30



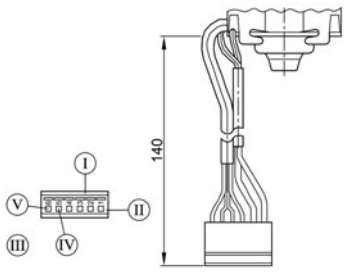
S 109



I Terminal 1, OUT A1, grey
II Terminal 2, OUT A2, black
III Terminal 3, + , white
IV Terminal 4, - , red

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 244



Crimp housing 0009501061 (3,96mm,0,156"),

Crimp terminals 008701031 mating with **PCB headers** 0026481066
1 grey encoder out ch1, **2 black** encoder out

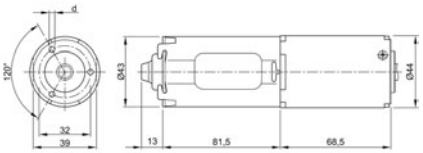
ch2, **3 white** encoder +, **4 red** encoder -, **5 violet** motor, **6 blue** motor
www.molex.com

Notes

Series GMPI
Motor type 404 722

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	sleeve bearing

0231 B



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	200.0
Nominal power [W]	P_N	69.8
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s2

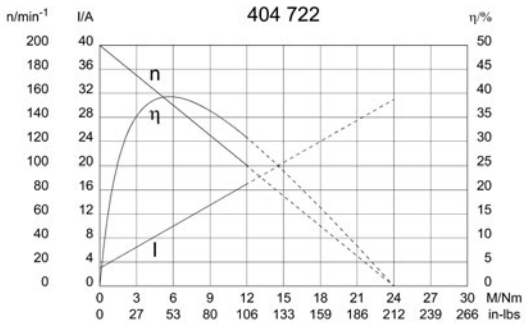
Sensor data	
Pulses	39
Output channels	2

Other data	
Gear ratio	39.7/1
Gear wheel material	plastic
Suppression components	4,0µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.650

Remarks: d = 3,3mm, for self-cutting screw 4mm

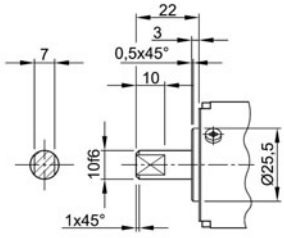
Motor picture

Characteristic curves

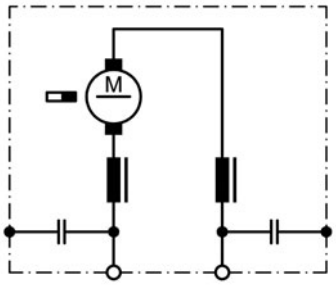


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

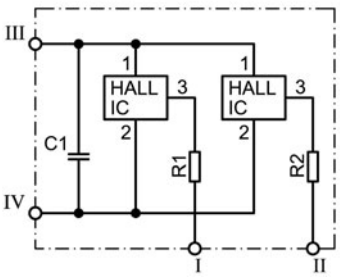
W 249



S 30



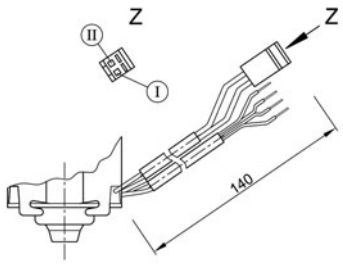
S 109



I Terminal 1, OUT A1, grey
II Terminal 2, OUT A2, black
III Terminal 3, + , white
IV Terminal 4, - , red

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 216

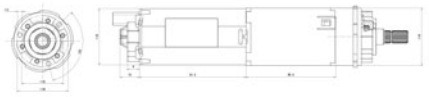


I Terminal 1, motor, violet
II Terminal 2, motor, blue

Notes

Series GMPI
Motor type 405 504

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	10.0
No-load speed [min^{-1}]	n_0	40.0
Nominal power [W]	P_N	34.4
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

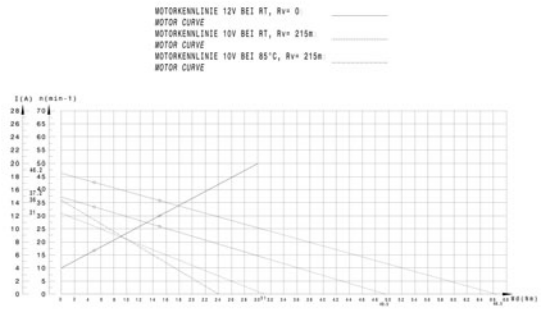
Sensor data	
Pulses	116
Output channels	1

Other data	
Gear ratio	116/1
Gear wheel material	plastic
Suppression components	2,5µH, 47nF, ( )
Enclosure class	IP 30
Weight [kg]	0.800

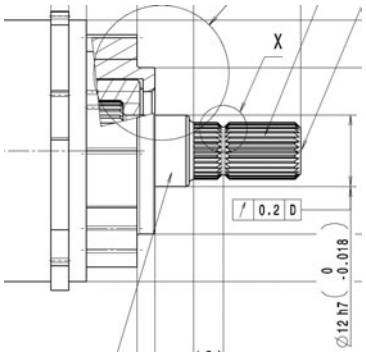
Remarks:

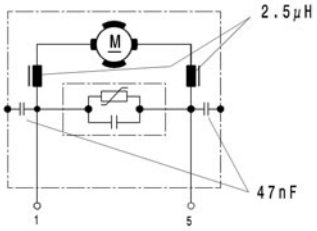
Motor picture

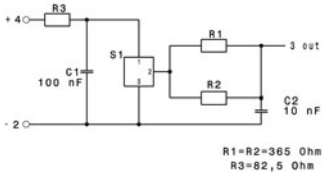
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

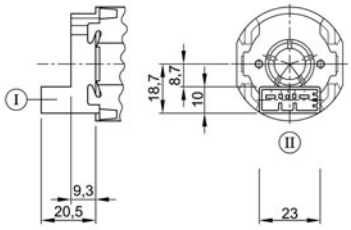






Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

0320 (GMPD)

···› DC MOTORS WITH WORM GEAR

···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	combination of worm and spur gear
Gear housing:	plastic
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	hollow shaft with profile
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

···› INDUSTRIAL APPLICATION

Machine construction

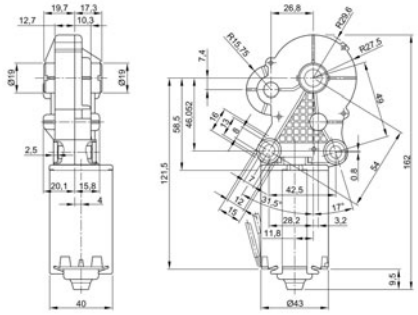
···› AUTOMOTIVE APPLICATION

Seat Recline Adjustment

Series GMPD
Motor type 404 682

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	40.0
Nominal power [W]	P_N	14.8
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

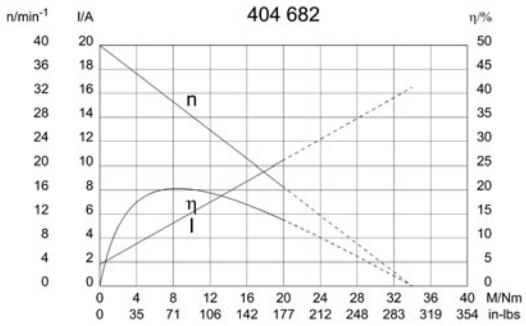
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

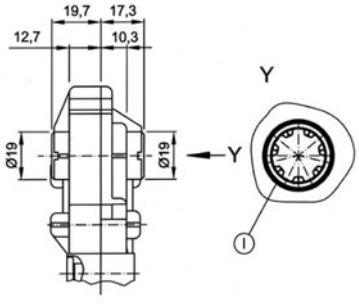
Motor picture

Characteristic curves

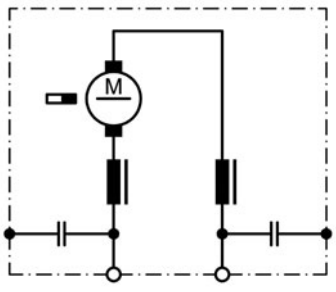


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

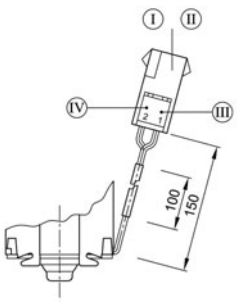
W 224



S 30



K 206



I through Profile KRC 316928 AEIZ 01

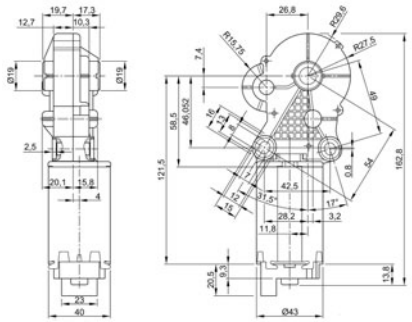
tap housing 365057-3, **timer contacts** 928781-5

mating with **receptacle housing** 365058-3,
timer contacts 927768-1
1 black motor, **2 blue** motor

Series GMPD
Motor type 404 747

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	5.59
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

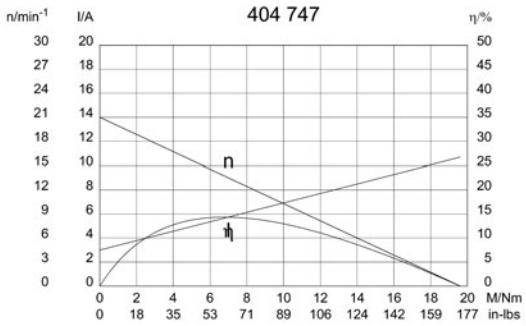
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

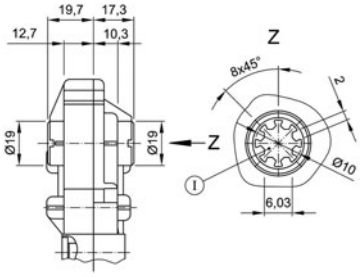
Motor picture

Characteristic curves



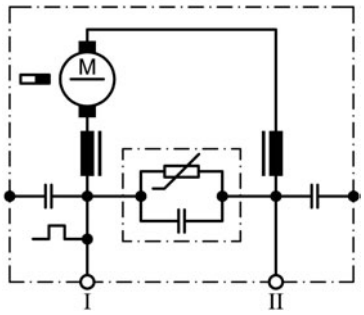
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 270



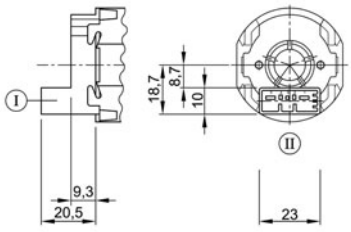
I through profile

S 93



I Terminal 1
II Terminal 5

K 220

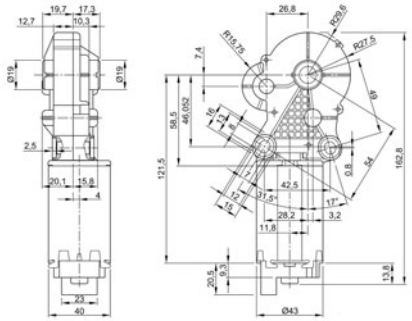


Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

Series GMPD
Motor type 404 748

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	5.59
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

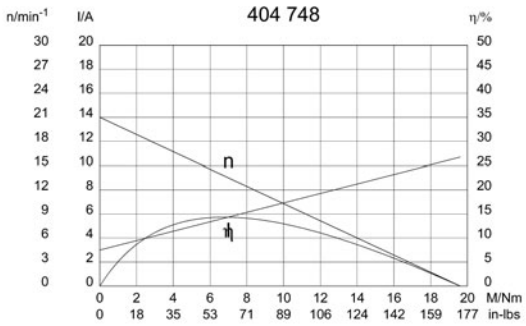
Sensor data	
Pulses	210
Output channels	1

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

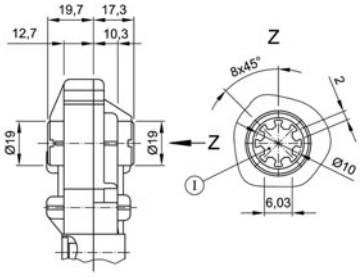
Motor picture

Characteristic curves



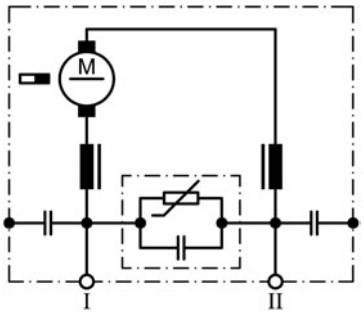
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 270



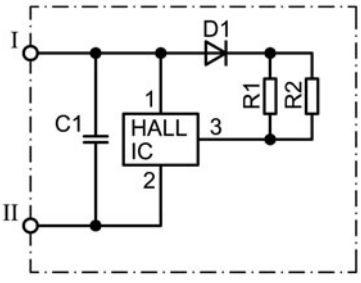
I through profile

S 86



I Terminal 1
II Terminal 5

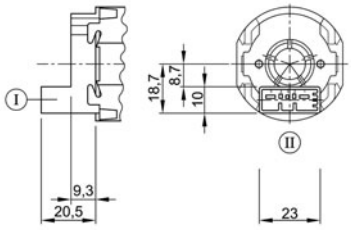
S 85



I Terminal 4, Hall-IC +
II Terminal 2, Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



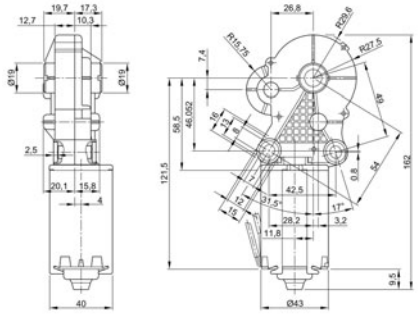
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPD
Motor type 404 764

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	22.0
Nominal power [W]	P_N	7.54
Nominal current [A]	I_N	1.8
Nominal force [kN]	F_N	0.00
Duty cycle		s3

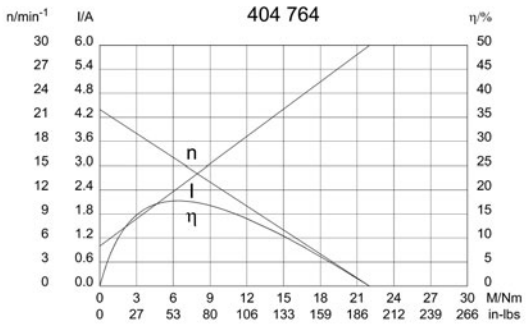
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	7,5µH, 47nF, (0,47µF)
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

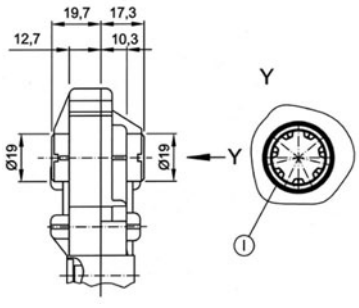
Motor picture

Characteristic curves



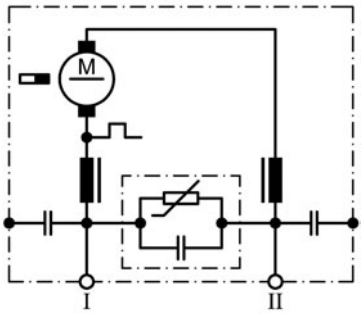
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224



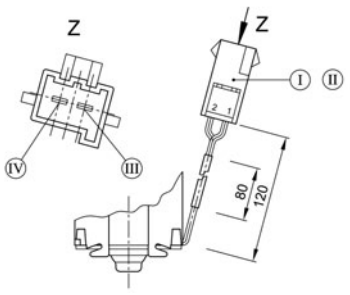
I through Profile KRC 316928 AEIZ 01

S 103



I Terminal 1, black
II Terminal 2, blue

K 227

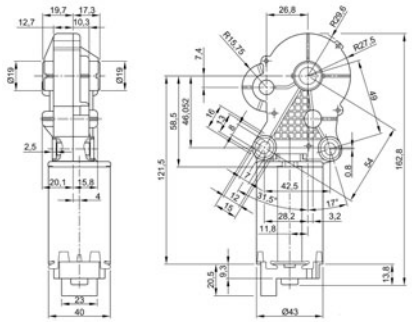


tap housing 365057-1, **timer contacts** 928781-5
mating with **receptacle housing** 365058-1,
timer contacts 927768-1
1 black motor, **2 blue** motor

Series GMPD
Motor type 404 904

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	3.95
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

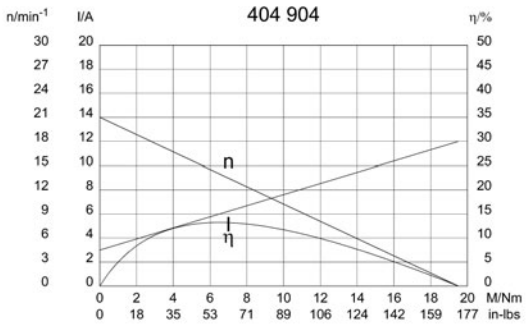
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

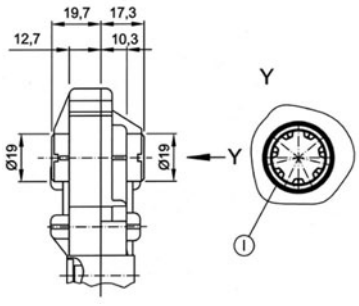
Motor picture

Characteristic curves



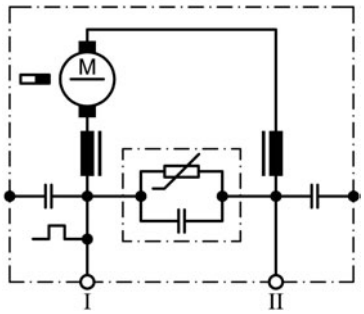
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224



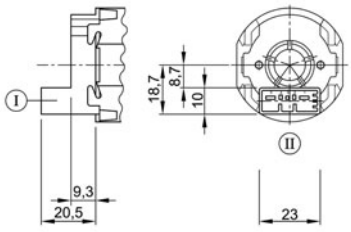
I through Profile KRC 316928 AEIZ 01

S 93



I Terminal 1
II Terminal 5

K 220

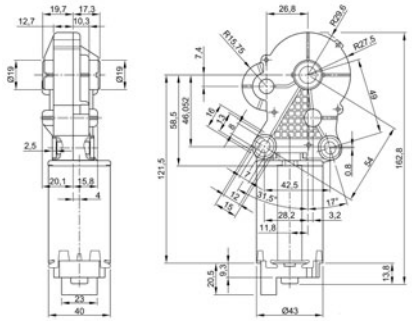


Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

Series GMPD
Motor type 404 905

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	3.95
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s2

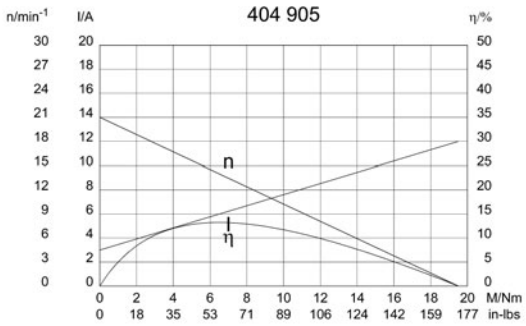
Sensor data	
Pulses	210
Output channels	1

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

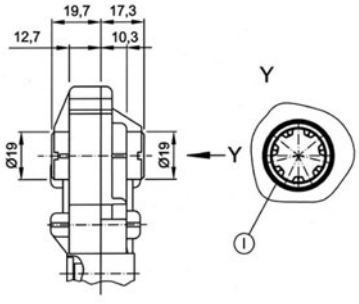
Motor picture

Characteristic curves



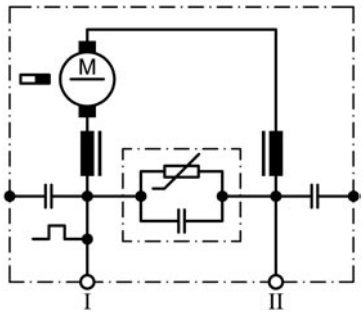
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224



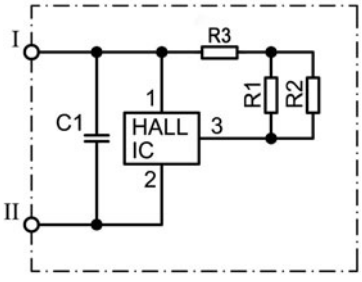
I through Profile KRC 316928 AEIZ 01

S 93



I Terminal 1
II Terminal 5

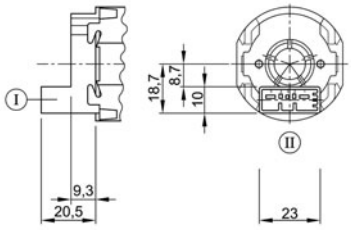
S 140



I Terminal 4; Hall-IC +
II Terminal 2; Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



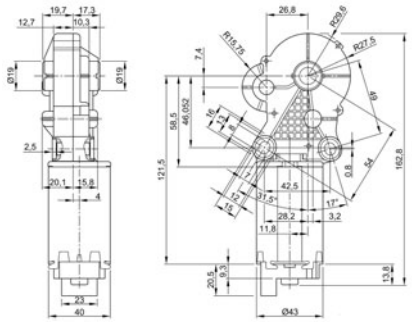
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPD
Motor type 404 907

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	3.92
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

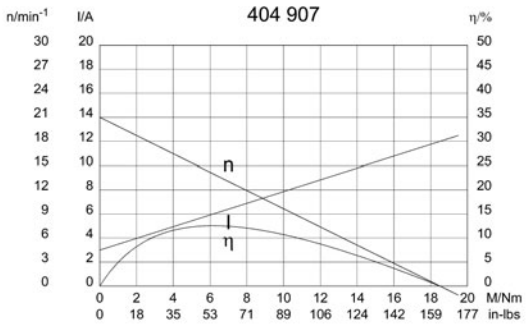
Sensor data	
Pulses	210
Output channels	1

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	""
Enclosure class	IP 40
Weight [kg]	0.440

Remarks: Plastic gearbox

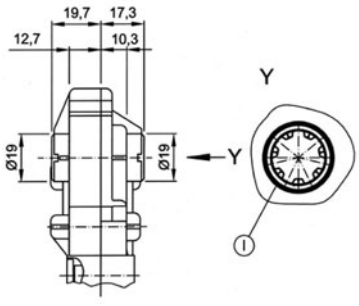
Motor picture

Characteristic curves



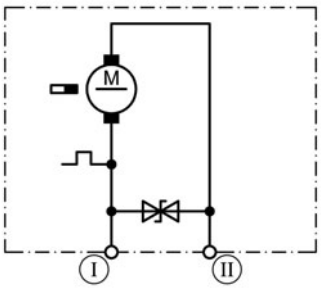
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224



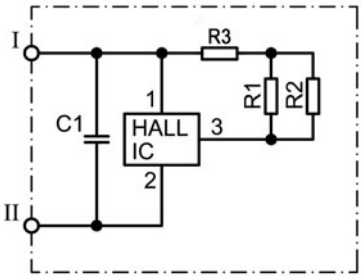
I through Profile KRC 316928 AEIZ 01

S 138



I Terminal 1
II Terminal 5

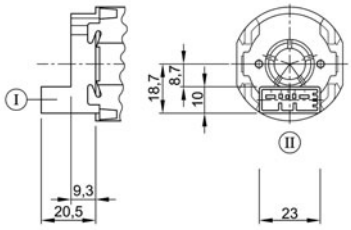
S 140



I Terminal 4; Hall-IC +
II Terminal 2; Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



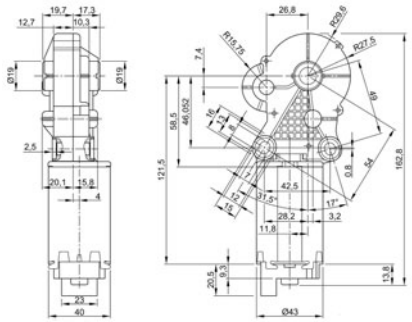
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPD
Motor type 404 980

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	22.0
Nominal power [W]	P_N	4.10
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

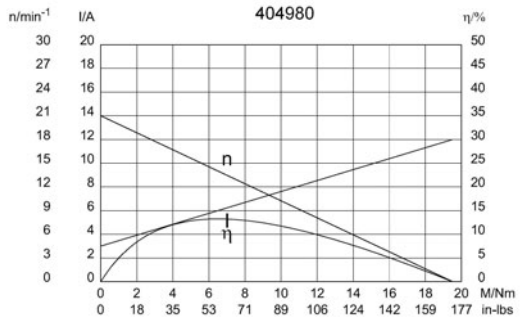
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP40
Weight [kg]	0.440

Remarks:

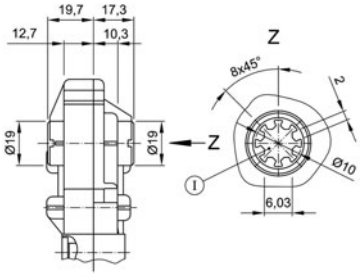
Motor picture

Characteristic curves



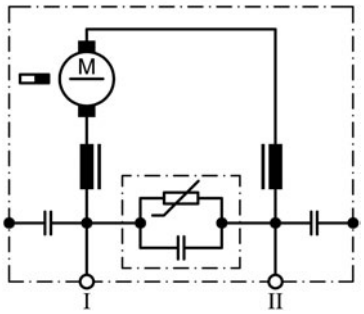
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 270



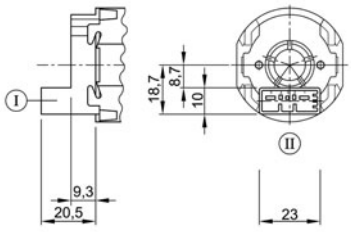
I through profile

S 86



I Terminal 1
II Terminal 5

K 220

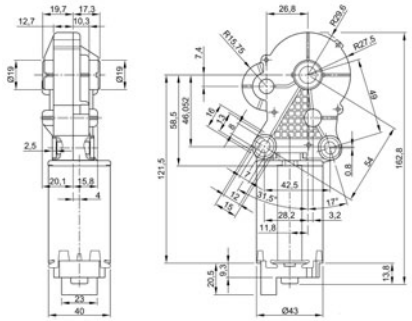


Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

Series GMPD
Motor type 405 031

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B-Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	22.0
Nominal power [W]	P_N	4.19
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

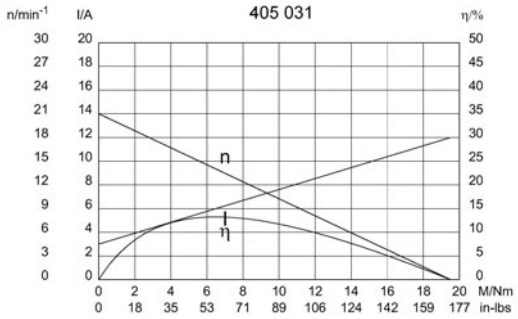
Sensor data	
Pulses	210
Output channels	1

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF
Enclosure class	IP 40
Weight [kg]	0.000

Remarks:

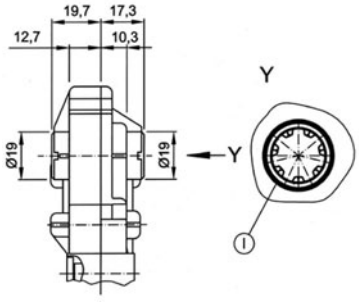
Motor picture

Characteristic curves



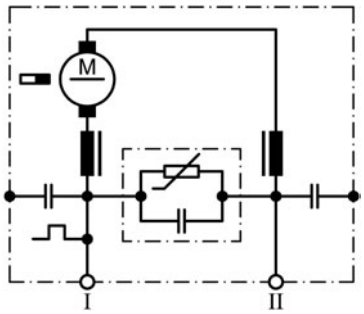
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224

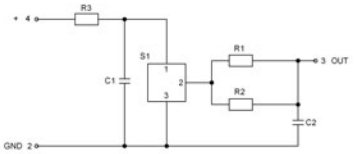


I through Profile KRC 316928 AEIZ 01

S 93

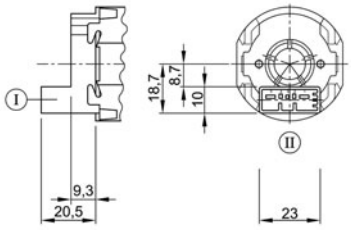


I Terminal 1
II Terminal 5



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220

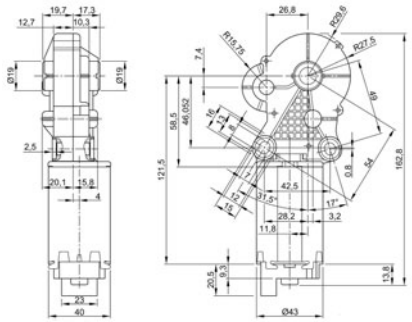


Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	3.95
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

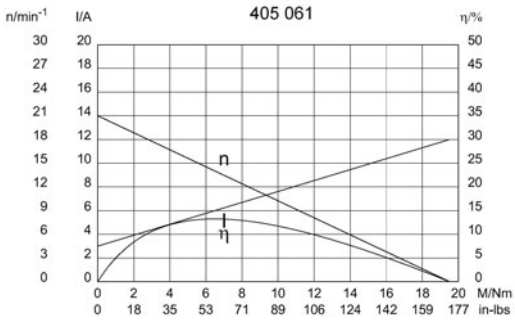
Sensor data	
Pulses	210
Output channels	2

Other data	
Gear ratio	210/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF
Enclosure class	IP 40
Weight [kg]	0.000

Remarks:

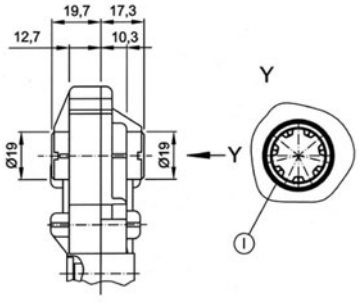
Motor picture

Characteristic curves



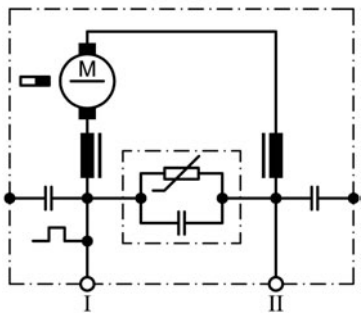
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224

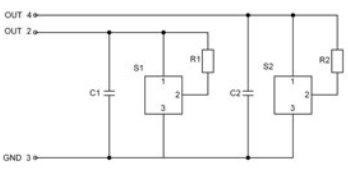


I through Profile KRC 316928 AEIZ 01

S 93

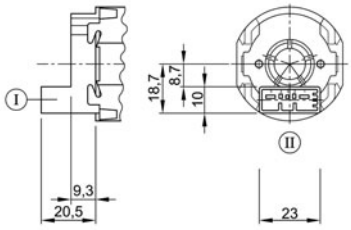


I Terminal 1
II Terminal 5



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



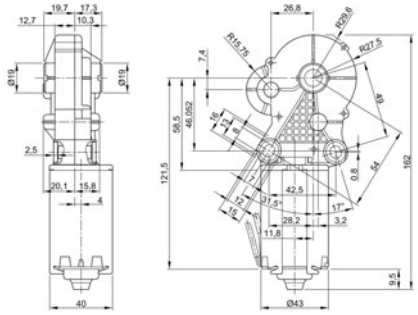
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPD
Motor type 405 228

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0320 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	20.0
Nominal power [W]	P_N	6.70
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

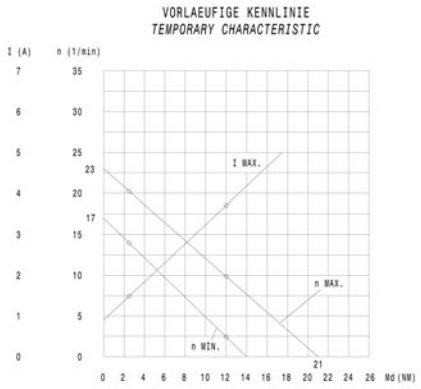
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	246.75/1
Gear wheel material	plastic
Suppression components	7,5µ, 47nF
Enclosure class	IP 40
Weight [kg]	0.440

Remarks:

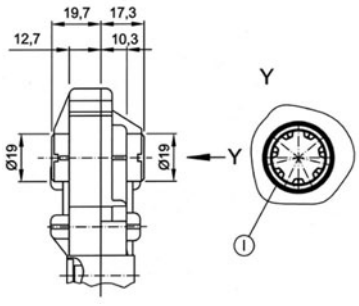
Motor picture

Characteristic curves



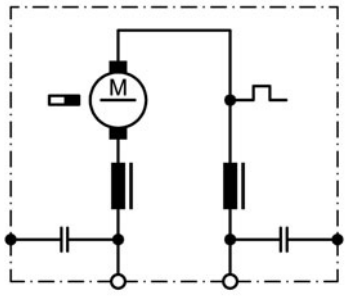
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 224

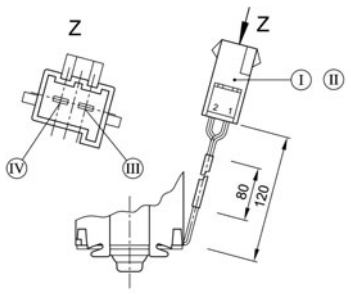


I through Profile KRC 316928 AEIZ 01

S 74



K 227

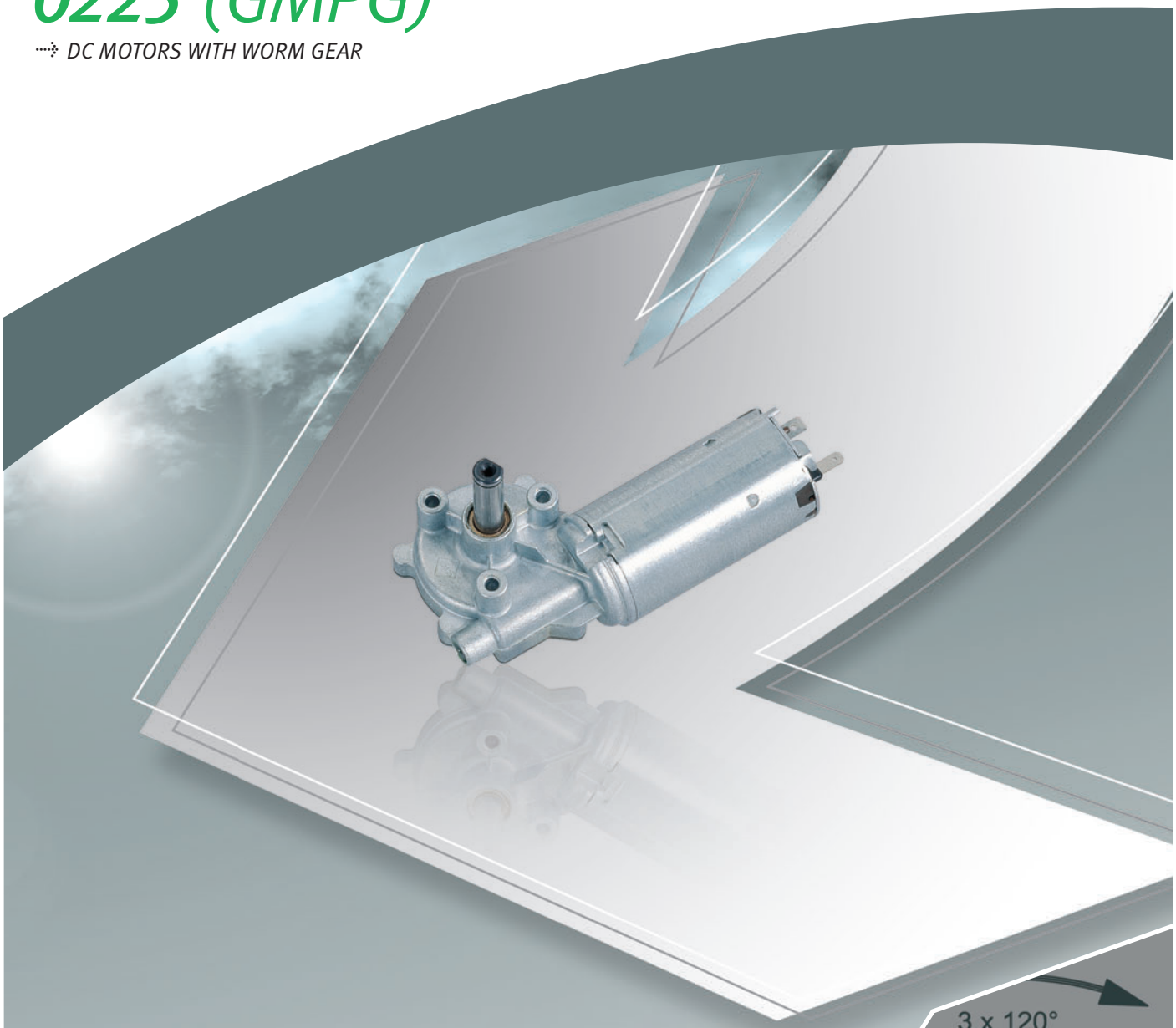


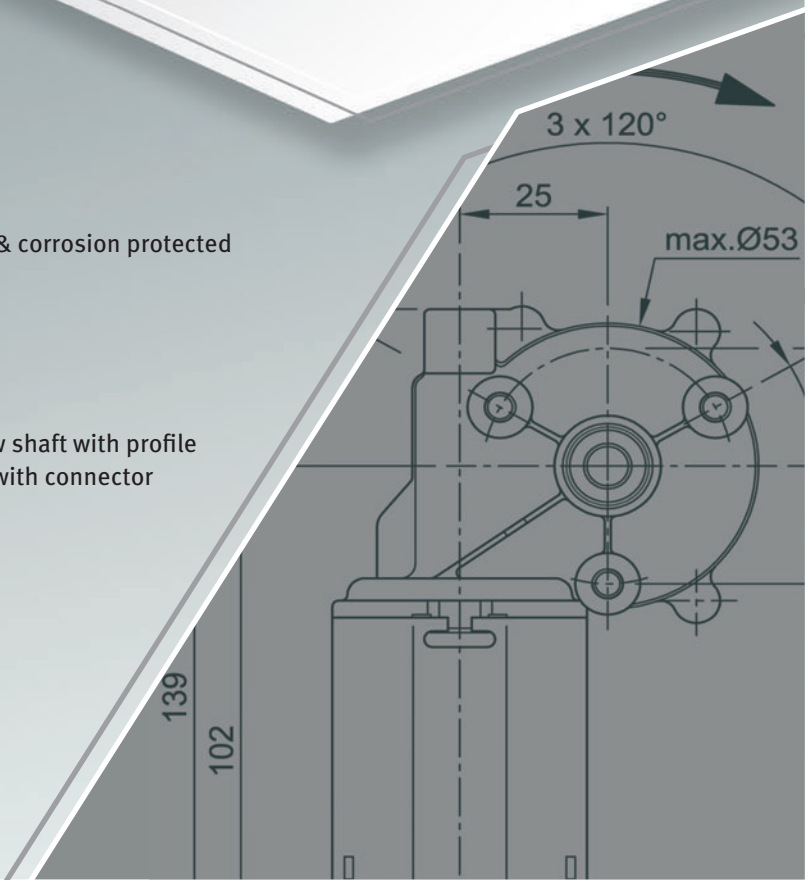
tap housing 365057-1, **timer contacts** 928781-5
mating with **receptacle housing** 365058-1,
timer contacts 927768-1
1 black motor, **2 blue** motor

Notes

0225 (GMPG)

···› DC MOTORS WITH WORM GEAR





···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft or hollow shaft with profile
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

···› INDUSTRIAL APPLICATION

Catering, Office machines, Furniture Adjustment, Machine Construction

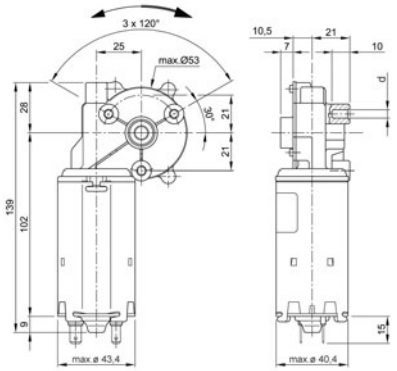
···› AUTOMOTIVE APPLICATION

Sunroof adjustment

Series GMPG
Motor type 404 156

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	80.0
Nominal power [W]	P_N	7.33
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

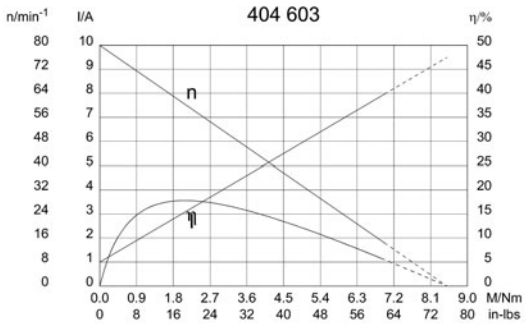
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	62/1
Gear wheel material	plastic
Suppression components	
Enclosure class	IP 30
Weight [kg]	0.610

Remarks: d=selftapping screw M5

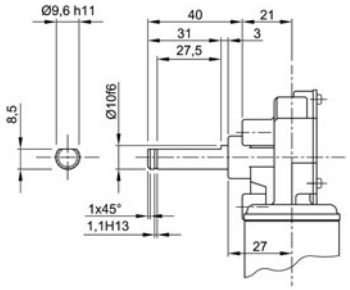
Motor picture

Characteristic curves

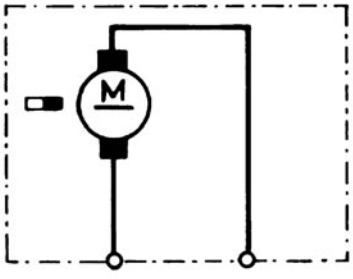


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

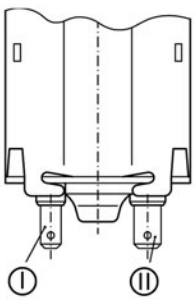
W 147



S 28



K 117

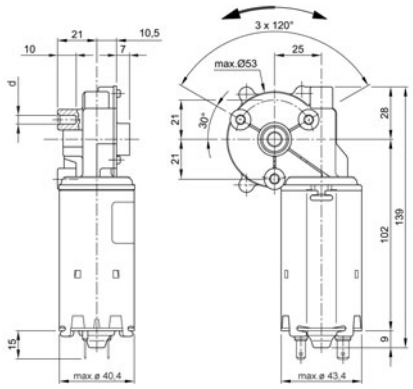


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 157

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.50
No-load speed [min^{-1}]	n_0	540.0
Nominal power [W]	P_N	24.7
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

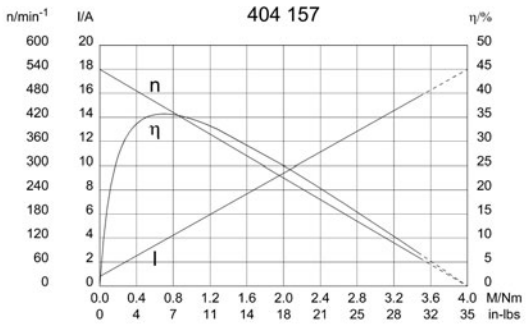
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	56/4
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.710

Remarks: d = for thread-forming screw M 5 DIN 7500

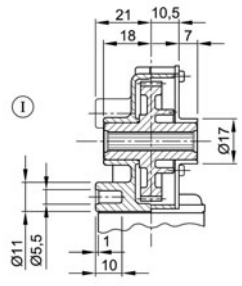
Motor picture

Characteristic curves

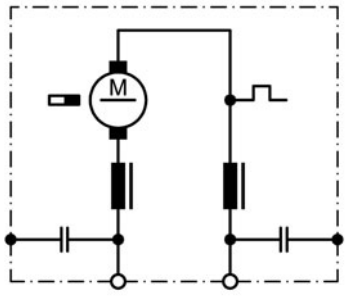


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

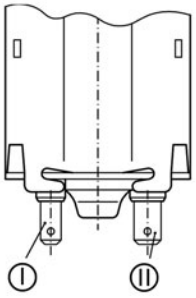
W 148



S 74



K 117



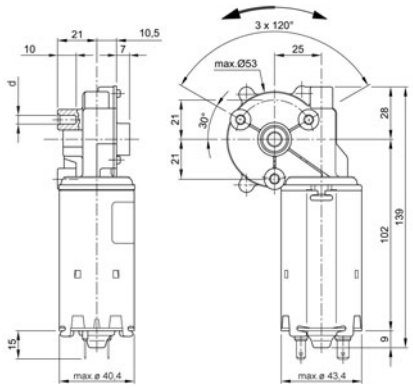
I Tapered splines 7 x 8 DIN 5481 continuous

I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 166

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0225 AL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.50
No-load speed [min^{-1}]	n_0	60.0
Nominal power [W]	P_N	2.83
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

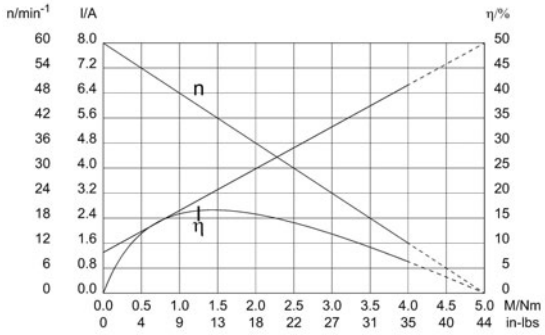
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	62/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

Remarks:

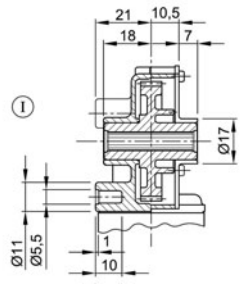
Motor picture

Characteristic curves



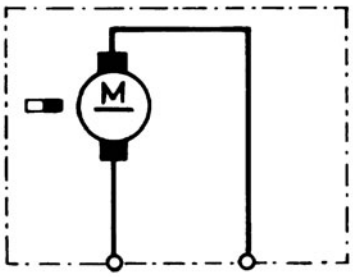
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 148

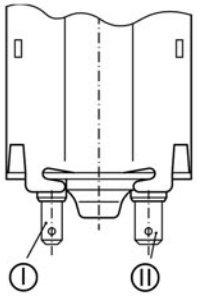


I Tapered splines 7 x 8 DIN 5481
continuous

S 28



K 117

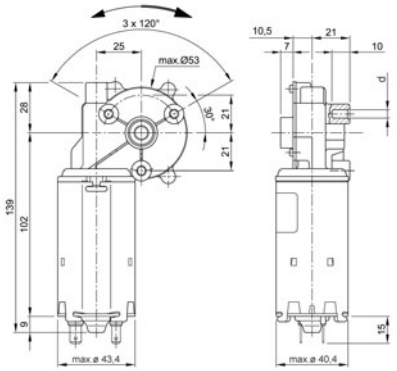


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 603

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	80.0
Nominal power [W]	P_N	7.39
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

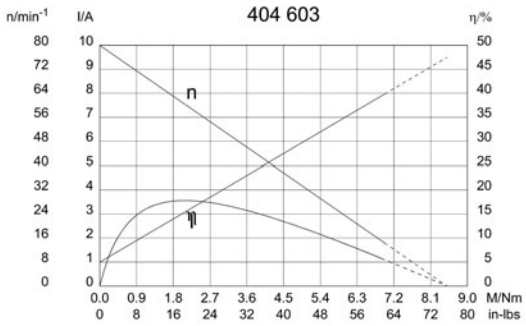
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	62/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP30
Weight [kg]	0.710

Remarks: d = for thread-forming screw M 5 DIN 7500

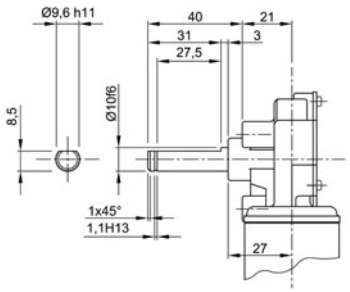
Motor picture

Characteristic curves

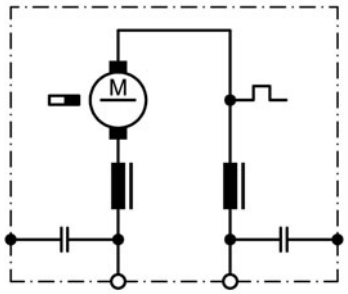


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

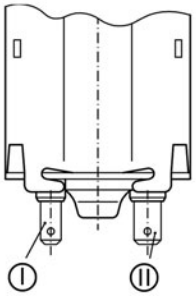
W 147



S 74



K 117

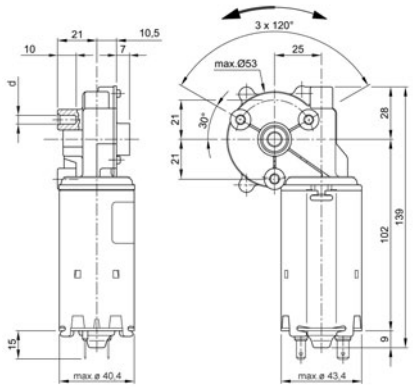


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 694

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	28.0
Nominal power [W]	P_N	2.48
Nominal current [A]	I_N	1.0
Nominal force [kN]	F_N	0.00
Duty cycle		s2

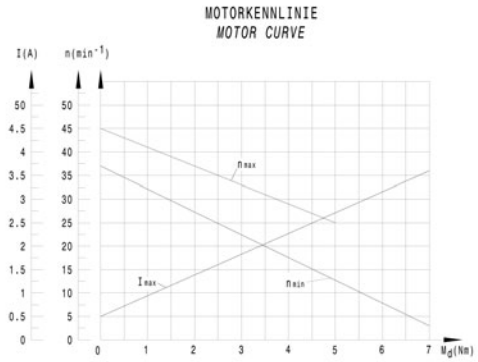
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	72/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.710

Remarks: d=selftapping screw M5

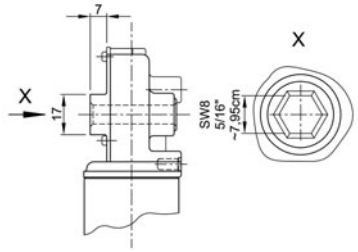
Motor picture

Characteristic curves

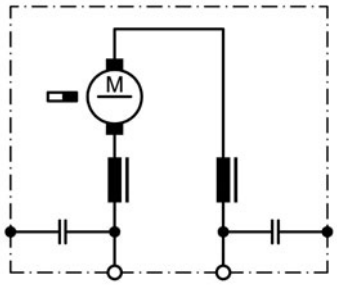


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

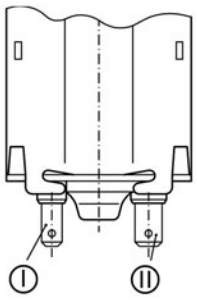
W 229



S 30



K 117

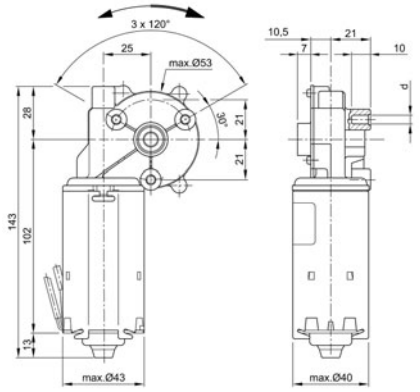


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 763

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 DR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	140.0
Nominal power [W]	P_N	25.1
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s3

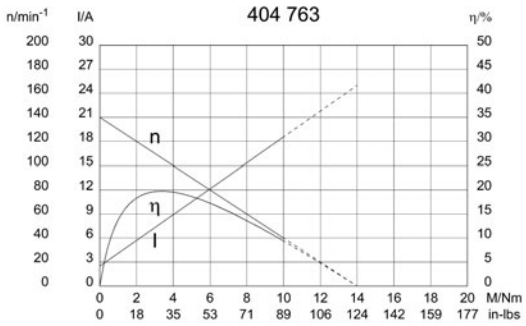
Sensor data	
Pulses	62
Output channels	2

Other data	
Gear ratio	62/1
Gear wheel material	plastic
Suppression components	4µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.710

Remarks: d = for thread-forming screw M5 DIN 7500

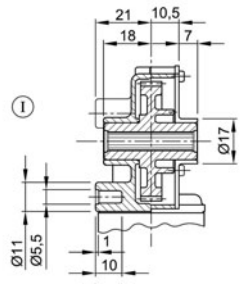
Motor picture

Characteristic curves



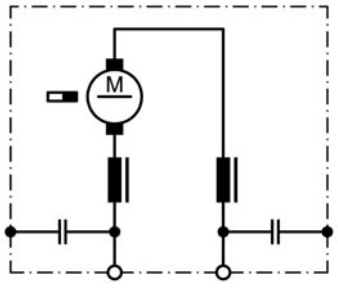
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 148

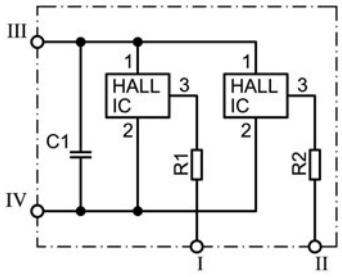


I Tapered splines 7 x 8 DIN 5481 continuous

S 30



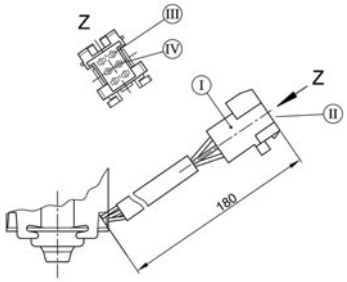
S 109



I Terminal 1, OUT A1, grey
II Terminal 2, OUT A2, black
III Terminal 3, + , white
IV Terminal 4, - , red

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 205



I Connector housing AMP 929505-2 mating

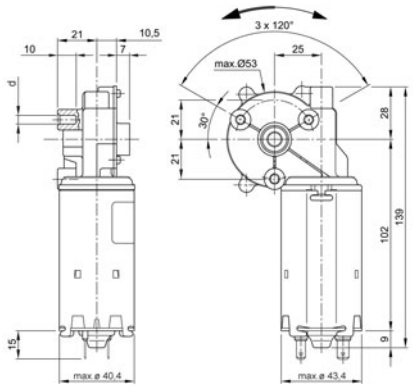
with connector AMP 929504-2
blue motor, **violet** motor, **white** encoder +, **red** encoder -, **grey** A1, **black** A2

Notes

Series GMPG
Motor type 404 774

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.30
No-load speed [min^{-1}]	n_0	35.0
Nominal power [W]	P_N	3.94
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

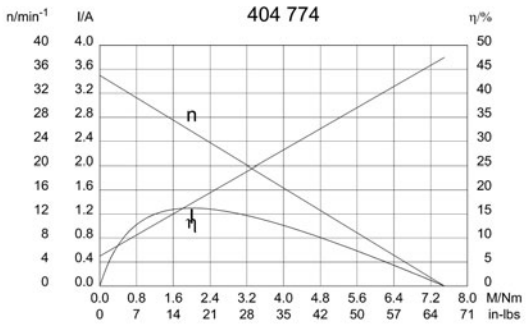
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	72/1
Gear wheel material	plastic
Suppression components	7,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	0.570

Remarks: d = for self-tapping screw M5 DIN 7500

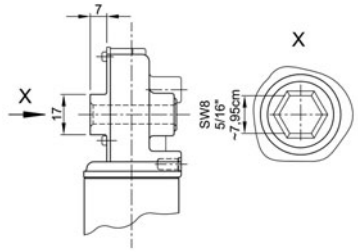
Motor picture

Characteristic curves

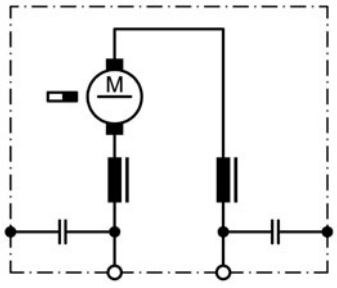


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

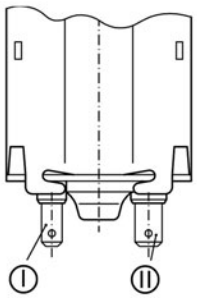
W 229



S 30



K 117

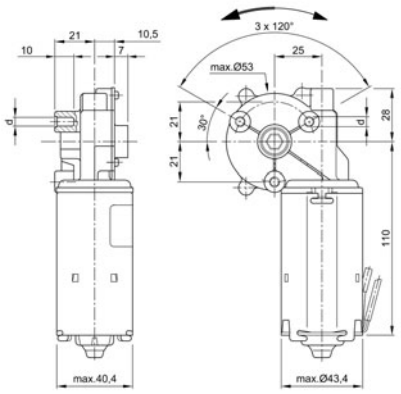


I Blade terminal ends 4,8 x 0,8 DIN 46 244
II Blade terminal ends 6,3 x 0,8 DIN 46 244

Series GMPG
Motor type 404 910

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0225 DL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	35.0
Nominal power [W]	P_N	4.47
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s3

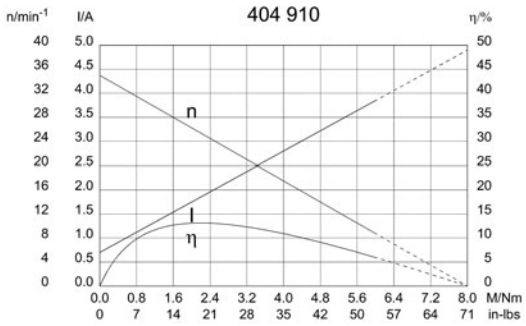
Sensor data	
Pulses	288
Output channels	1

Other data	
Gear ratio	72/1
Gear wheel material	plastic
Suppression components	7,5µH
Enclosure class	IP 30
Weight [kg]	0.710

Remarks: d = for thread-forming screw M5 DIN 7500

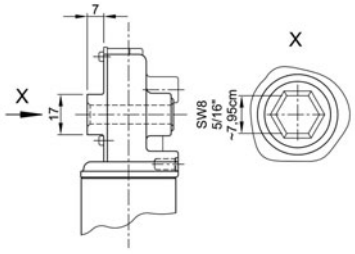
Motor picture

Characteristic curves

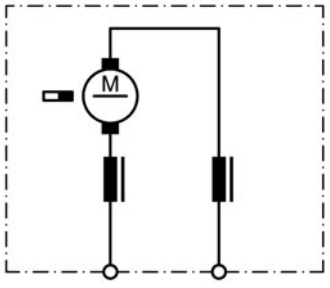


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

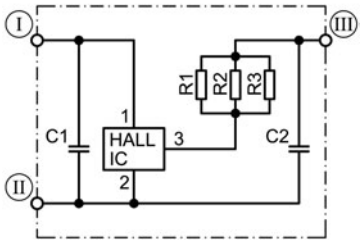
W 229



S 27



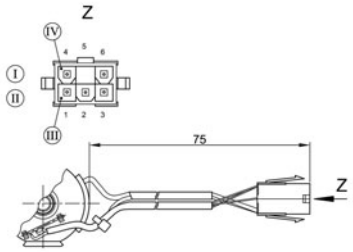
S 125



I Terminal 3, + , white
II Terminal 2, - , black
III Terminal 6, OUT, red

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 268



plug housing Molex minifit jr 39-01-2066

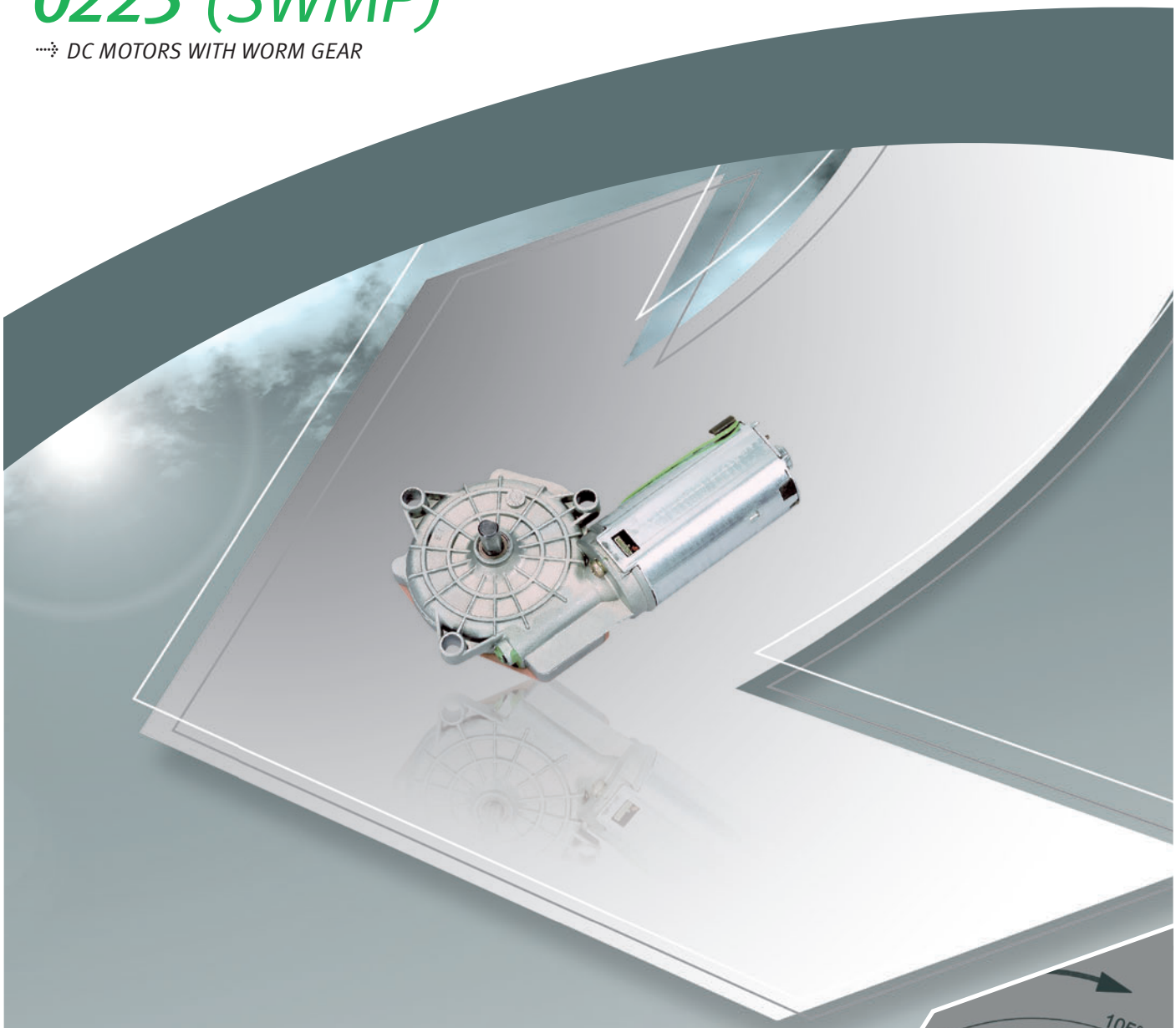
(4,2mm - .165"), **terminals** Molex 39-00-0430
(18-24AWG, gold plated)
1 violet motor, **2 black** encoder gnd, **3 white** encoder +, **4 blue** motor, **6 red** encoder out

Notes

Notes

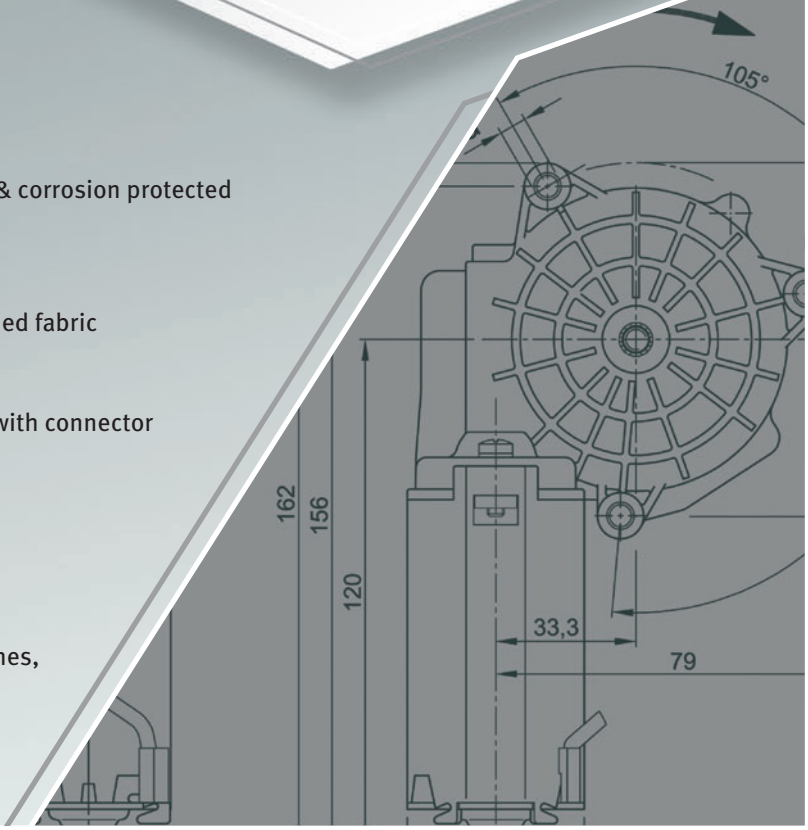
0223 (SWMP)

···› DC MOTORS WITH WORM GEAR



···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic or resinbonded fabric
Lubrication:	grease
Mechanical interface:	output shaft
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

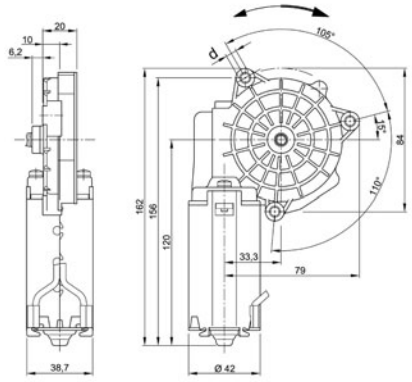


···› APPLICATION

General machine construction, Automatic machines,
Agricultural technology, Business machines,
Laboratory appliances, Medical appliances,
Traffic & communications technology,
Photographic/optical equipment

Series SWMP
Motor type 403 194

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	8.73
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

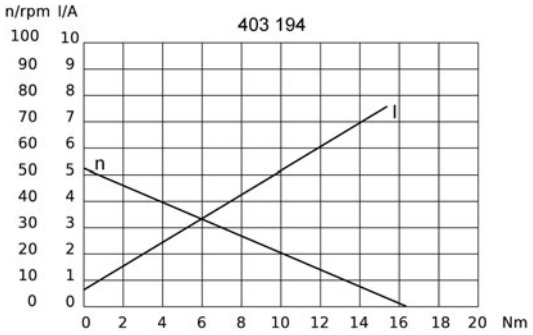
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	85/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

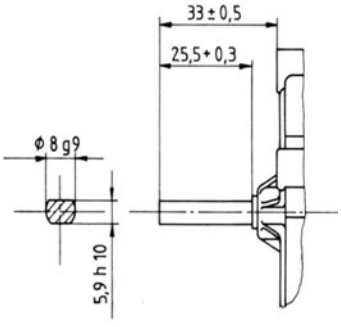
Remarks: d = M6

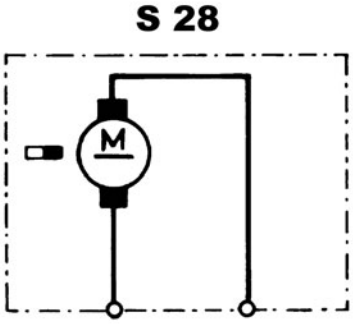
Motor picture

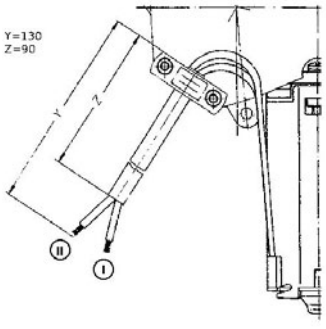
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



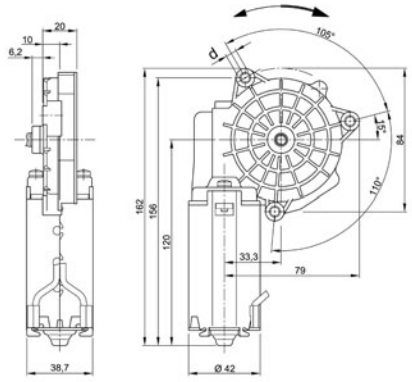




I: green
II: black

Series SWMP
Motor type 403 279

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	54.0
Nominal power [W]	P_N	9.94
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

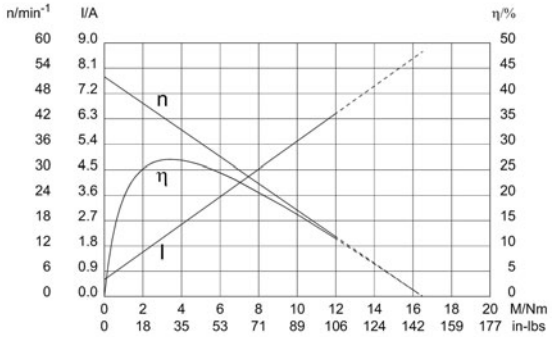
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	85/1
Gear wheel material	Plastic
Suppression components	7.5µH, 47nF
Enclosure class	IP30
Weight [kg]	0.710

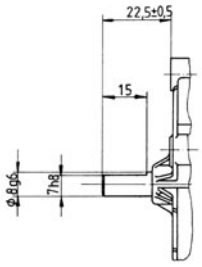
Remarks: d = 7.5mm, Ball bearing

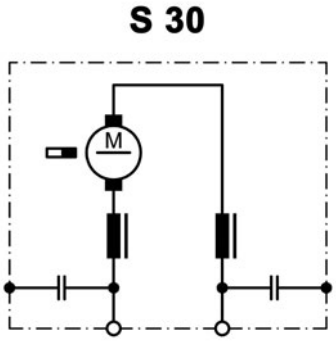
Motor picture

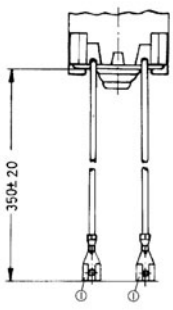
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



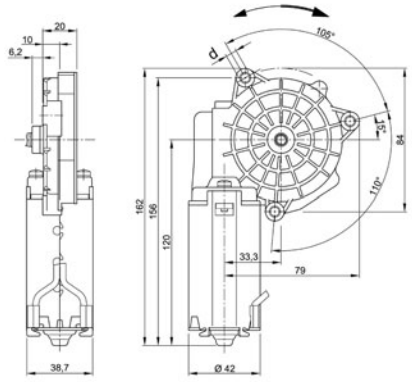




Spade connector 4.8 DIN 46 247

Series SWMP
Motor type 403 280

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



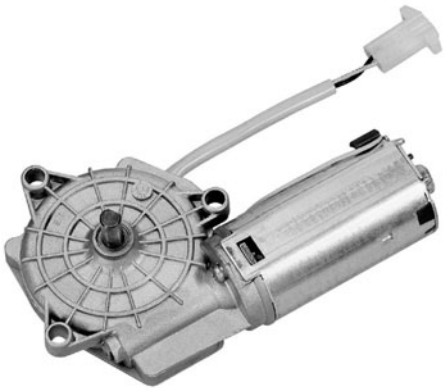
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	52.0
Nominal power [W]	P_N	9.57
Nominal current [A]	I_N	0.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

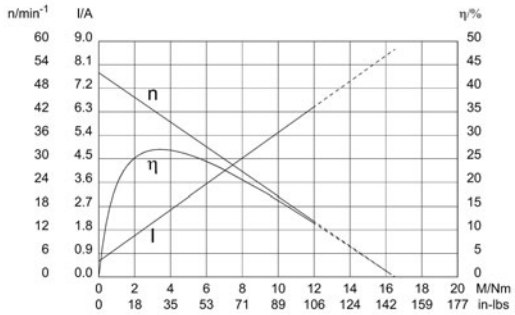
Other data	
Gear ratio	85/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

Remarks: d = 7.5mm, Ball bearing

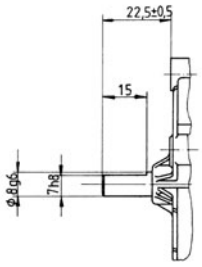
Motor picture

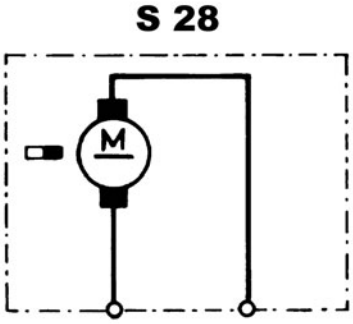


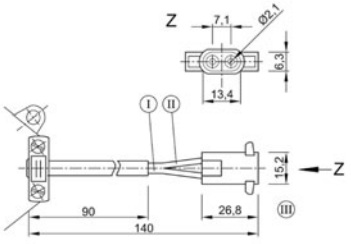
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

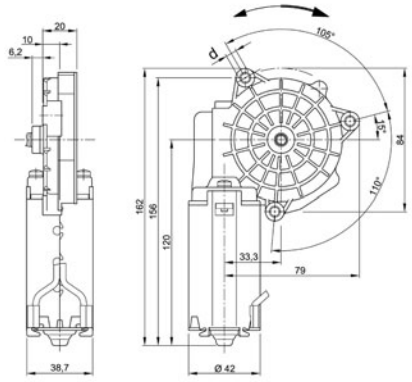






Series SWMP
Motor type 403 281

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	52.0
Nominal power [W]	P_N	9.34
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

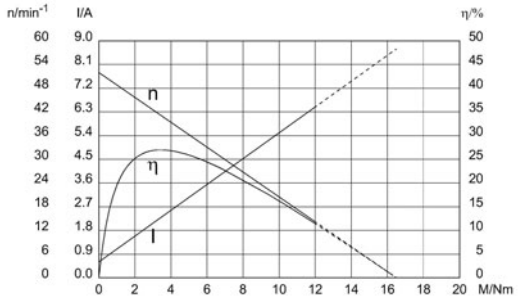
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	85/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

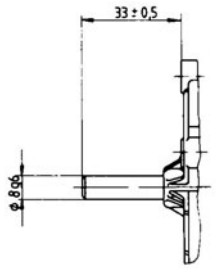
Remarks: d = M6, Ball bearing

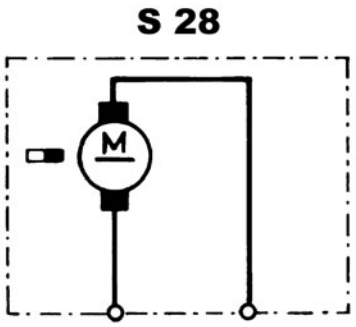
Motor picture

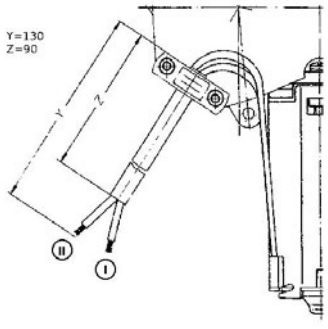
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



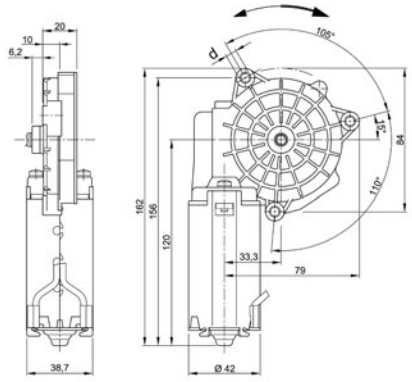




I: green
II: black

Series SWMP
Motor type 403 290

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	52.0
Nominal power [W]	P_N	9.34
Nominal current [A]	I_N	1.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

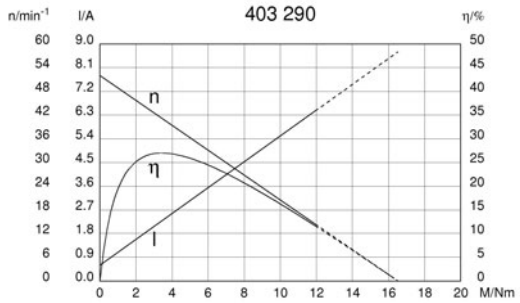
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	85/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

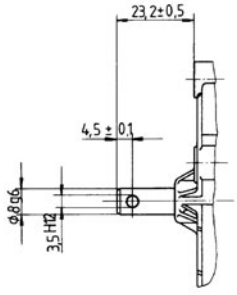
Remarks: d = M6, Ball bearing

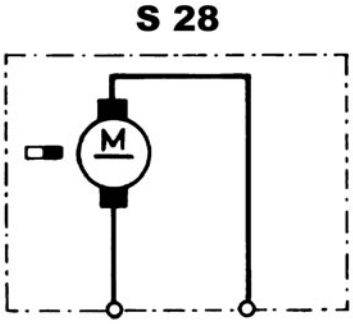
Motor picture

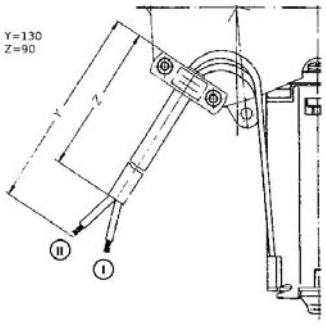
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





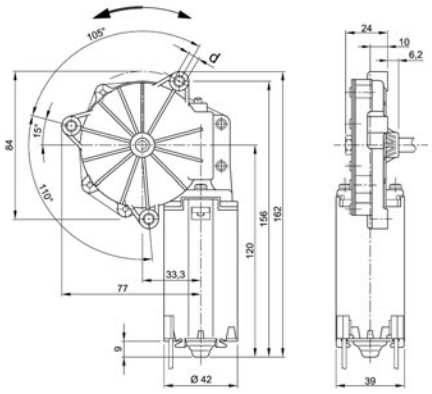


I: green
II: black

Series SWMP
Motor type 403 304

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0223 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.30
No-load speed [min^{-1}]	n_0	110.0
Nominal power [W]	P_N	12.2
Nominal current [A]	I_N	2.6
Nominal force [kN]	F_N	0.00
Duty cycle		s1

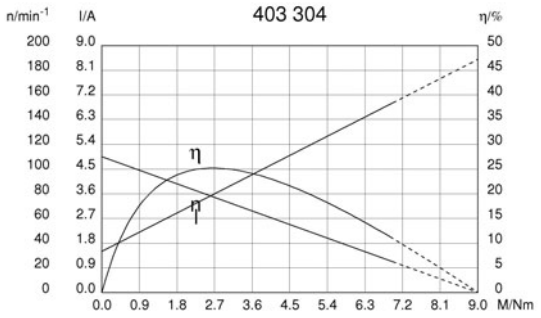
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	83/2
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

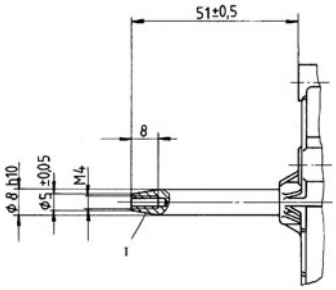
Remarks: d = M6, Ball bearing

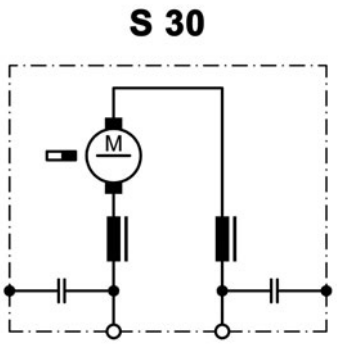
Motor picture

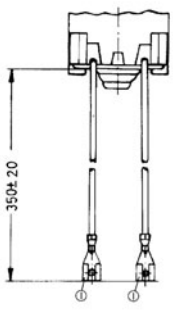
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





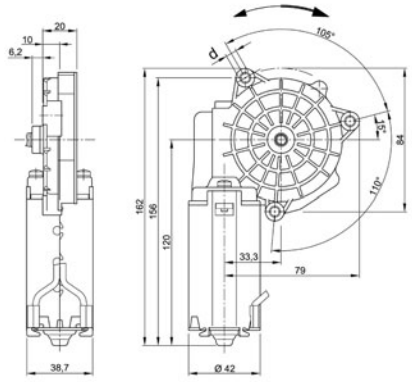


I: Cone 1:4

Spade connector 4.8 DIN 46 247

Series SWMP
Motor type 403 712

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.30
No-load speed [min^{-1}]	n_0	100.0
Nominal power [W]	P_N	11.1
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

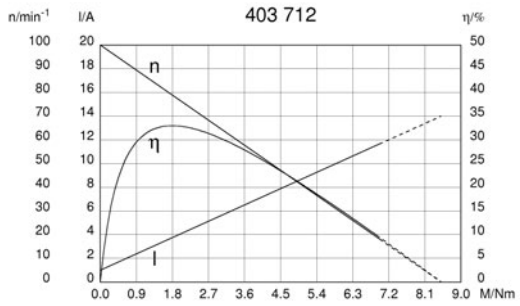
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	83/2
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

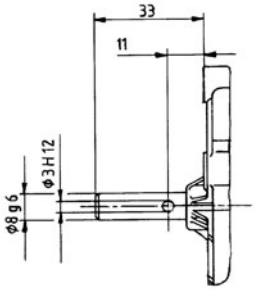
Remarks: d = M6, Ball bearing

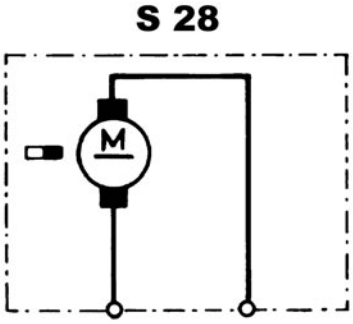
Motor picture

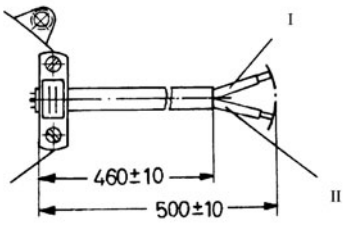
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



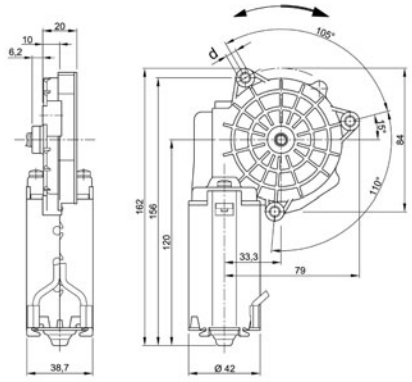




I: black
II: green

Series SWMP
Motor type 404 003

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	8.98
Nominal current [A]	I_N	2.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

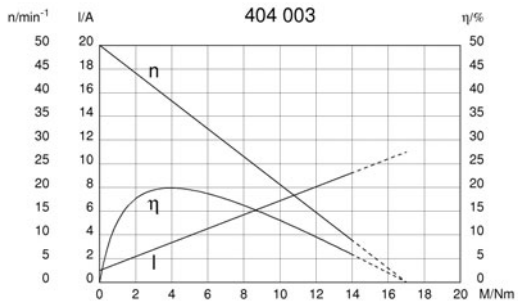
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	99/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	
Weight [kg]	0.710

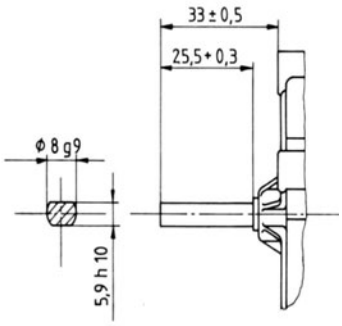
Remarks: d = M6, Ball bearing

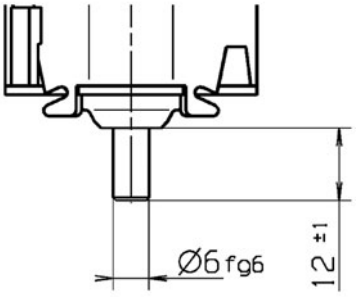
Motor picture

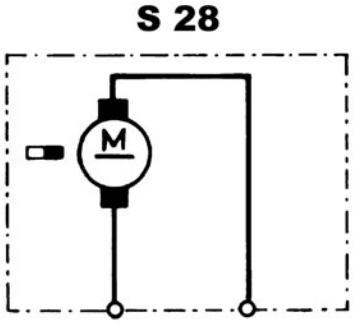
Characteristic curves



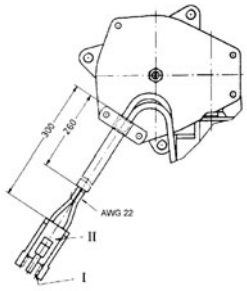
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

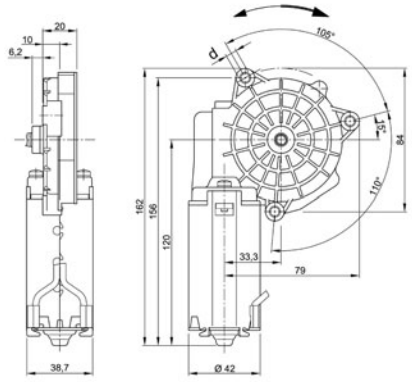


I: Housing RDST OCE: 2645082
II: Pins RD OCE: 2642354

Notes

Series SWMP
Motor type 404 127

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	8.38
Nominal current [A]	I_N	2.3
Nominal force [kN]	F_N	0.00
Duty cycle		s1

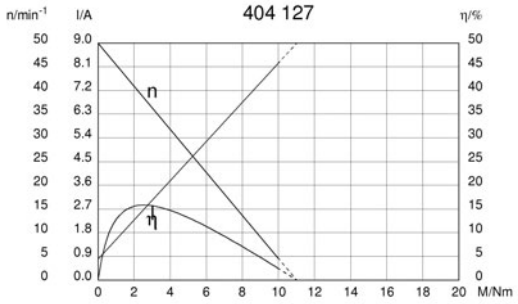
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	85/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	IP30
Weight [kg]	0.710

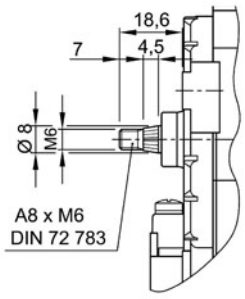
Remarks: d = M6, Ball bearing

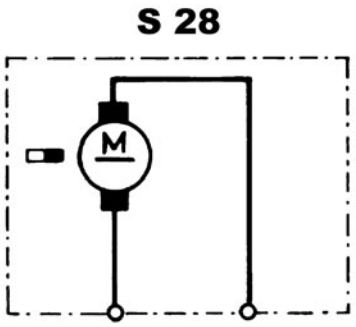
Motor picture

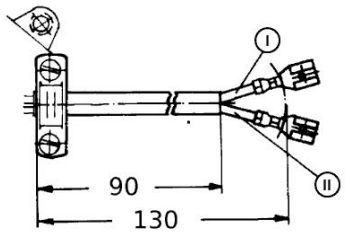
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





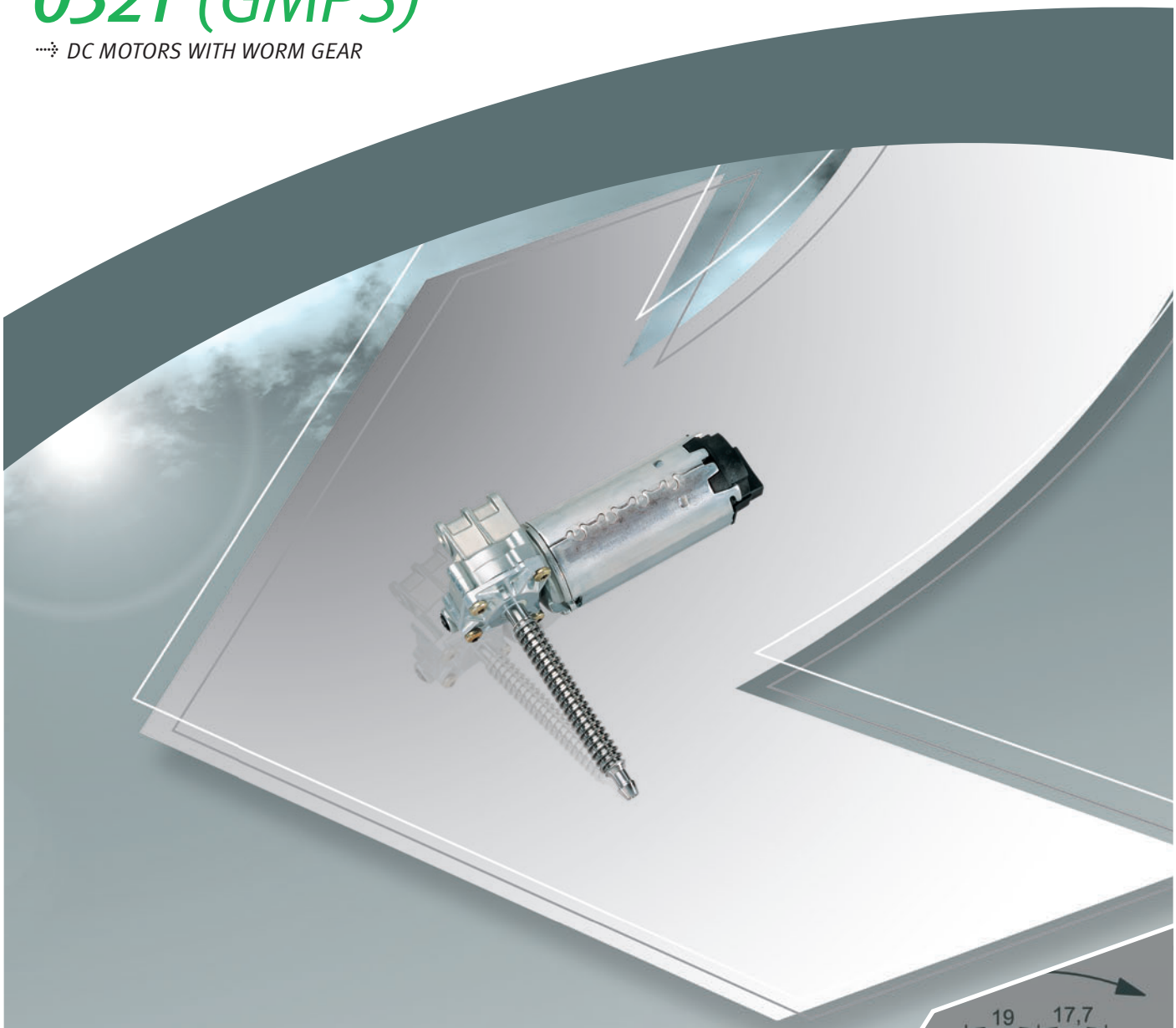


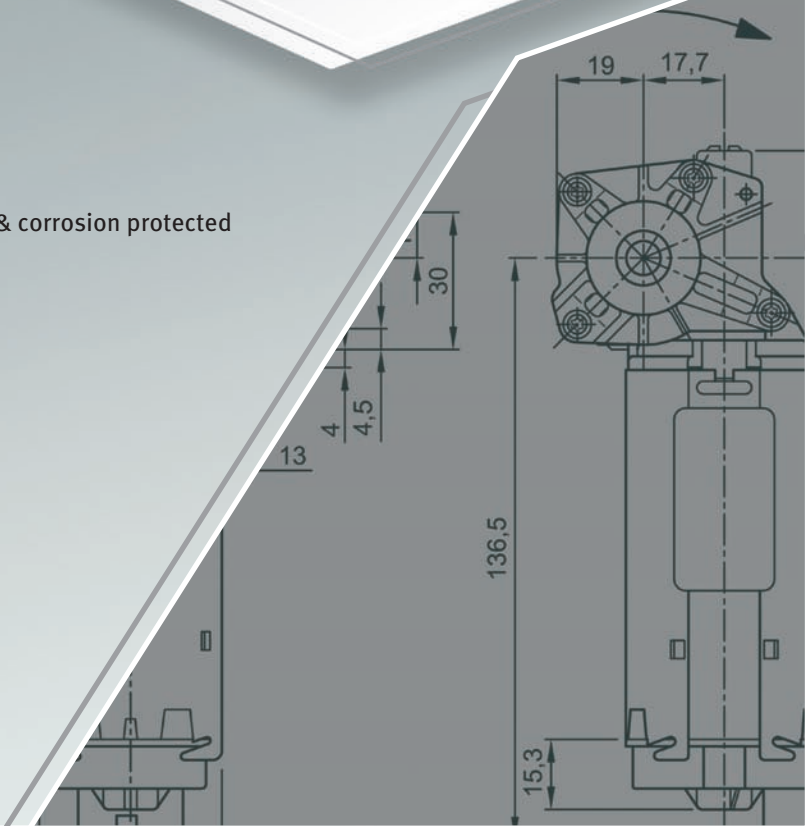
Spade connector 6.3 x 0.8 DIN 46 244
I: black
II: green

Notes

0321 (GMPS)

···› DC MOTORS WITH WORM GEAR





···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel lead screw
Electric interface:	connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

···› INDUSTRIAL APPLICATION

Home automation

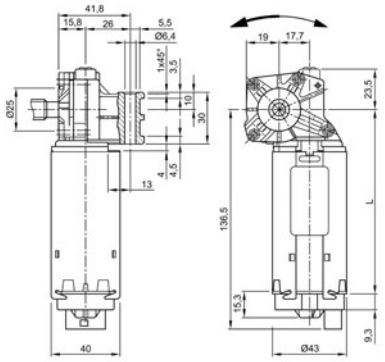
···› AUTOMOTIVE APPLICATION

Seat tilt and height adjustment

Series GMPS
Motor type 404 846

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0321 BL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	180.0
Nominal power [W]	P_N	21.3
Nominal current [A]	I_N	9.0
Nominal force [kN]	F_N	2.00
Duty cycle		s3

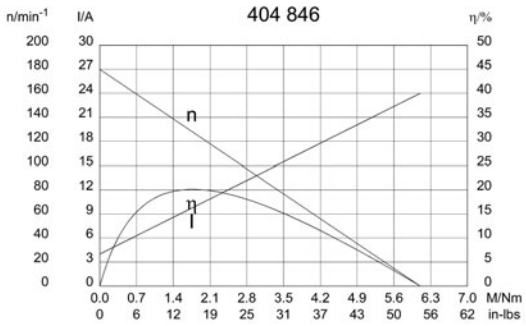
Sensor data	
Pulses	29
Output channels	1

Other data	
Gear ratio	29/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP 40
Weight [kg]	0.880

Remarks: L = 116mm, 1 start worm

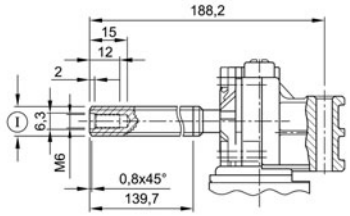
Motor picture

Characteristic curves



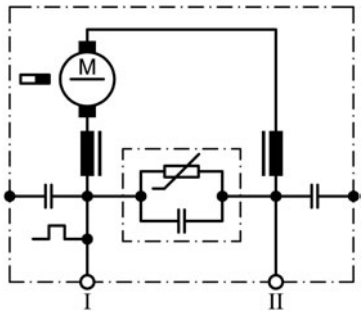
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 288



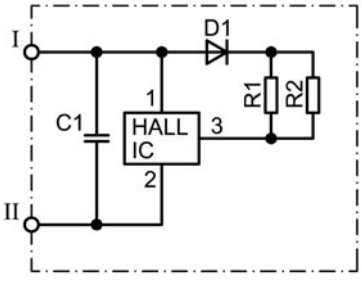
shape 7/16-8 STUB ACME RH, **pressure angle** 20°, **pitch** 3,175mm (0,125"), **no of starts** 1

S 93



I Terminal 1
II Terminal 5

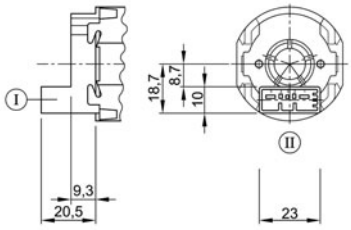
S 85



I Terminal 4, Hall-IC +
II Terminal 2, Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



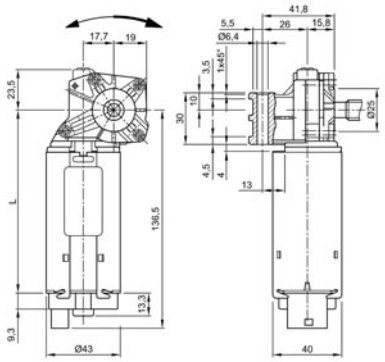
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPS
Motor type 404 847

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Sleeve - B:Sleeve

0321 BR



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	180.0
Nominal power [W]	P_N	21.3
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	2.00
Duty cycle		s3

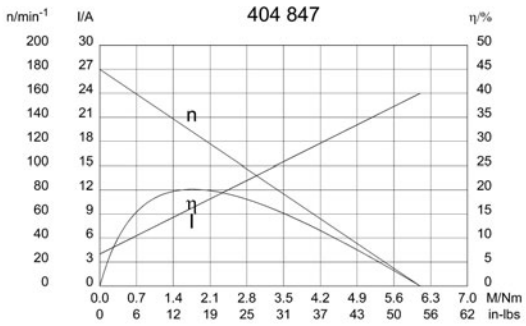
Sensor data	
Pulses	29
Output channels	1

Other data	
Gear ratio	29/1
Gear wheel material	plastic
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP 40
Weight [kg]	0.880

Remarks: L = 116mm, 1 start worm

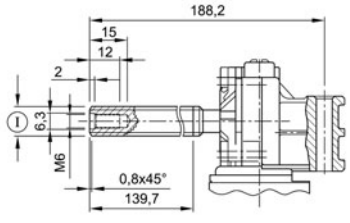
Motor picture

Characteristic curves



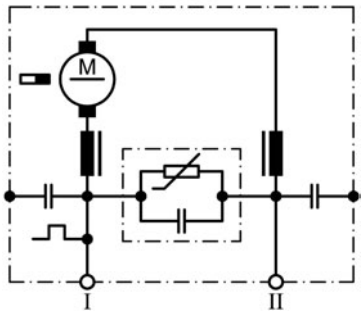
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 288



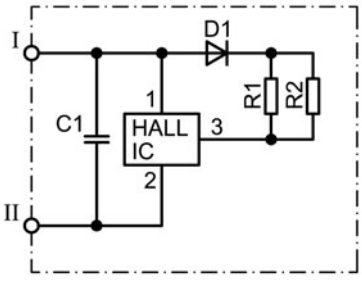
shape 7/16-8 STUB ACME RH, **pressure angle** 20°, **pitch** 3,175mm (0,125"), **no of starts** 1

S 93



I Terminal 1
II Terminal 5

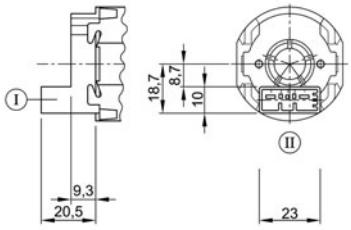
S 85



I Terminal 4, Hall-IC +
II Terminal 2, Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



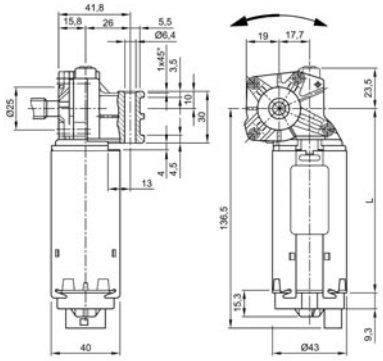
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPS
Motor type 405 091

Design Data	
Commutation	none
Direction of rotation	Bi-directional
Bearing type	A: Sleeve - B: Sleeve

0321 BL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	145.0
Nominal power [W]	P_N	16.6
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	1.50
Duty cycle		s3

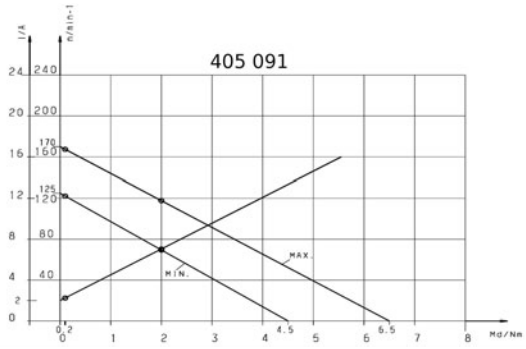
Sensor data	
Pulses	29
Output channels	1

Other data	
Gear ratio	29/1
Gear wheel material	
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP40
Weight [kg]	0.880

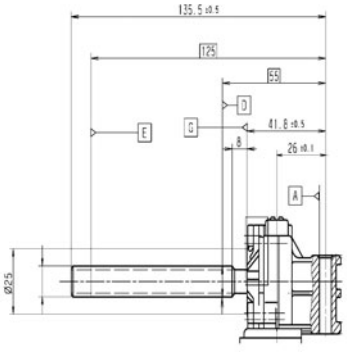
Remarks: 1 start worm

Motor picture

Characteristic curves

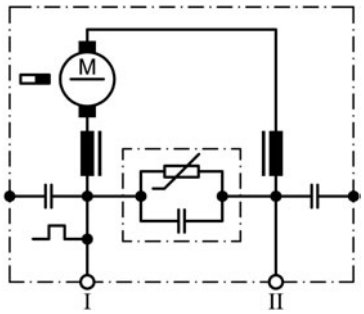


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



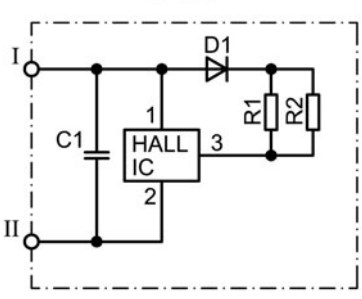
Output spindle: 7 / 16 Stub ACME RH

S 93



I Terminal 1
II Terminal 5

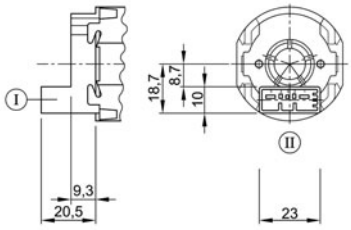
S 85



I Terminal 4, Hall-IC +
II Terminal 2, Hall-IC -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 220



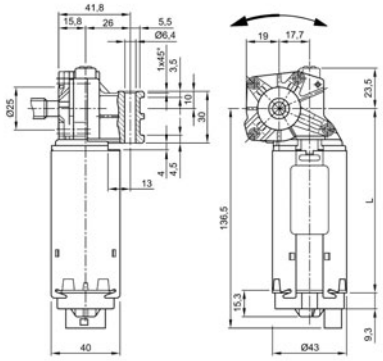
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover**
1379218-2
www.tycoelectronics.com

Notes

Series GMPS
Motor type 405 092

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Sleeve - B: Sleeve

0321 BL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	145.0
Nominal power [W]	P_N	16.6
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	1.50
Duty cycle		s3

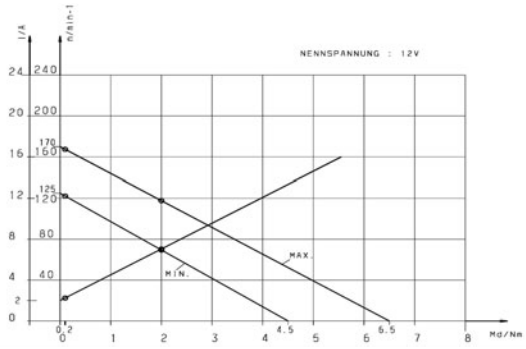
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	29/1
Gear wheel material	
Suppression components	5,5µH, 47nF, (0,47µF)
Enclosure class	IP40
Weight [kg]	0.880

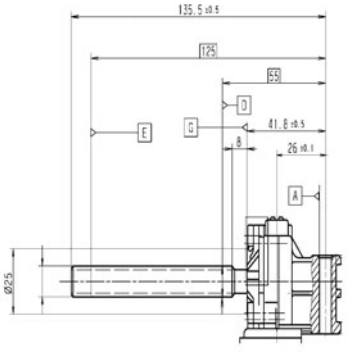
Remarks: 1 start worm

Motor picture

Characteristic curves

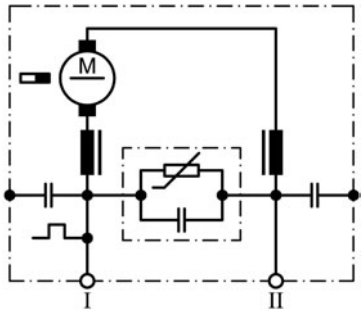


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



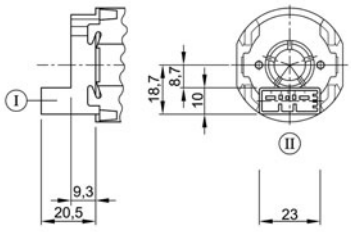
Output spindle: 7 / 16 Stub ACME RH

S 93



I Terminal 1
II Terminal 5

K 220

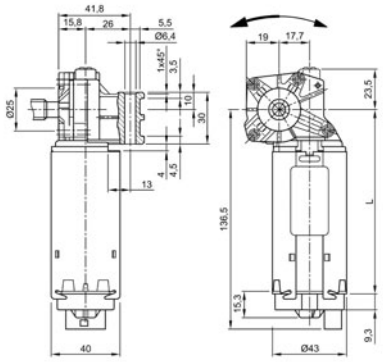


Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

Series GMPS
Motor type 405 237

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Sleeve - B: Sleeve

0321 BL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.50
No-load speed [min^{-1}]	n_0	145.0
Nominal power [W]	P_N	17.2
Nominal current [A]	I_N	4.5
Nominal force [kN]	F_N	1.50
Duty cycle		s3

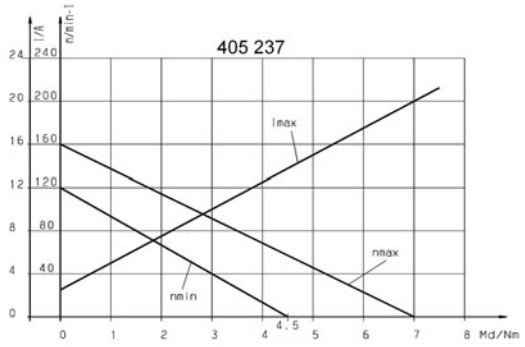
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	29/1
Gear wheel material	
Suppression components	
Enclosure class	IP40
Weight [kg]	0.880

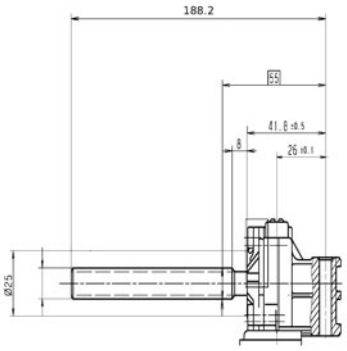
Remarks: L = 116mm

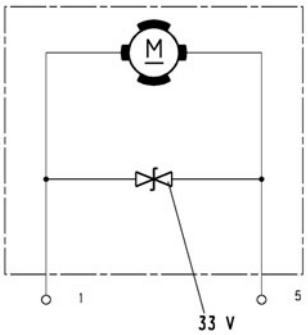
Motor picture

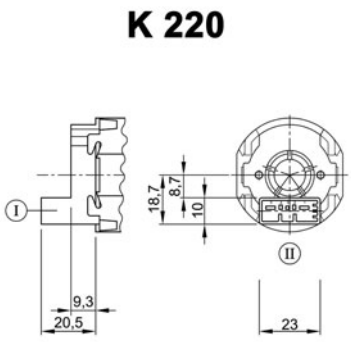
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







Output spindle: 7 / 16 Stub ACME RH

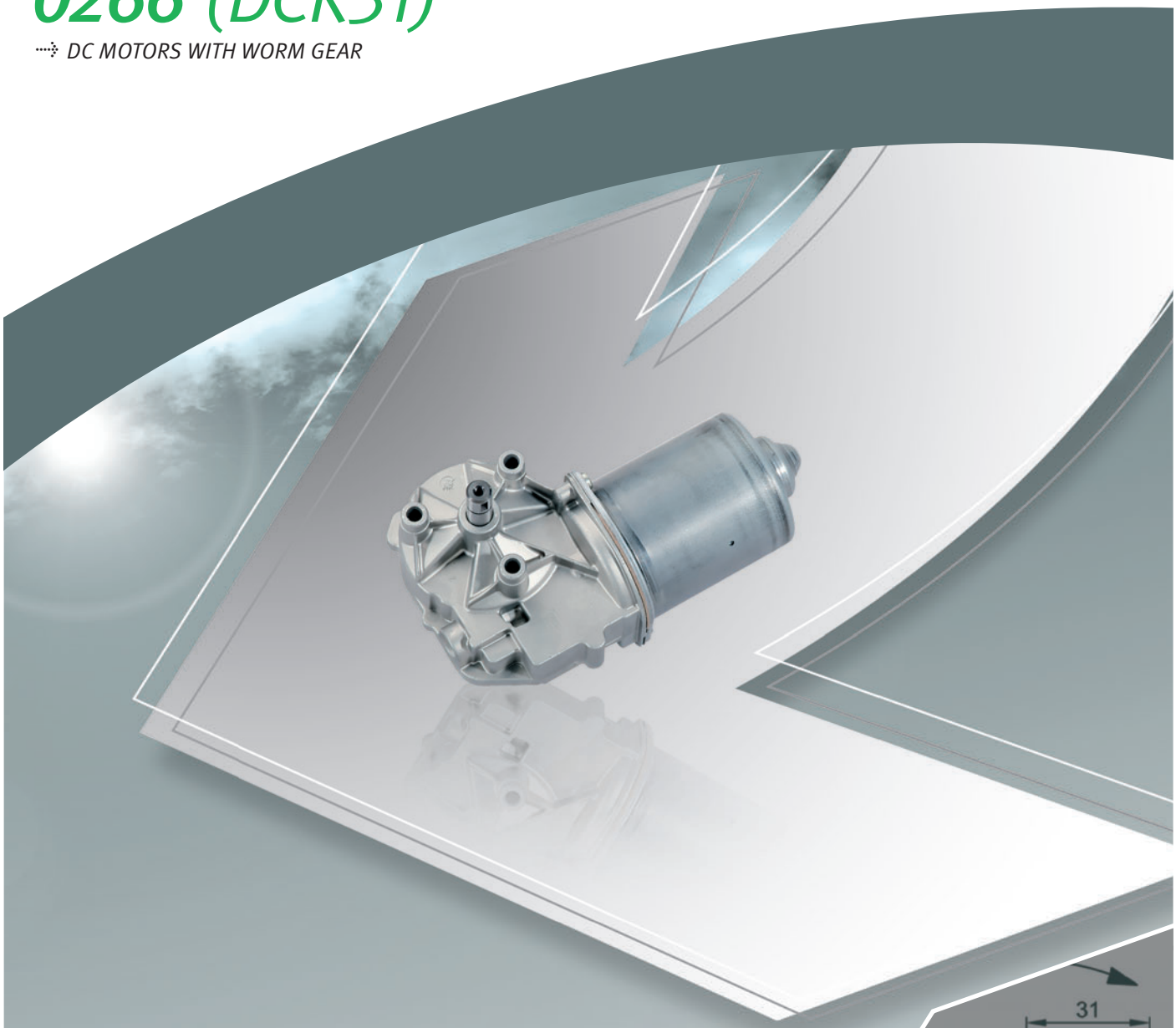
Connector TYCO C-208-15621 (Z) mating with:
Connector housing 1379217-3 **& cover** 1379218-2
www.tycoelectronics.com

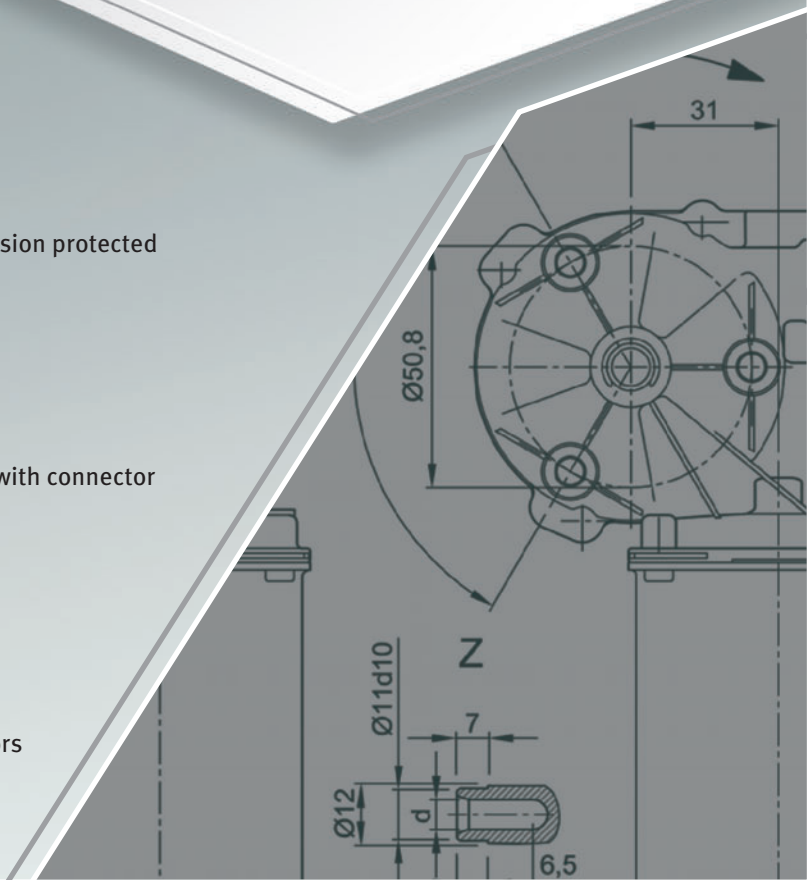
Notes

NIDEC MOTORS & ACTUATORS ···› MOTOR SERIES

0266 (DCK31)

···› DC MOTORS WITH WORM GEAR





···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic, steel
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector or leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

···› INDUSTRIAL APPLICATION

Door & gate openers, pumps,
lubricating technology, appliance, linear actuators

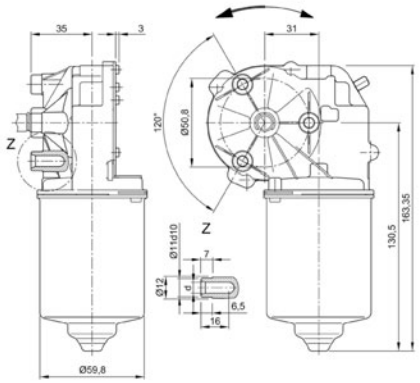
···› AUTOMOTIVE APPLICATION

Trunk & tailgate opening & closing

Series DCK31
Motor type 404 854

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:ball - B:sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	65.0
Nominal power [W]	P_N	25.0
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

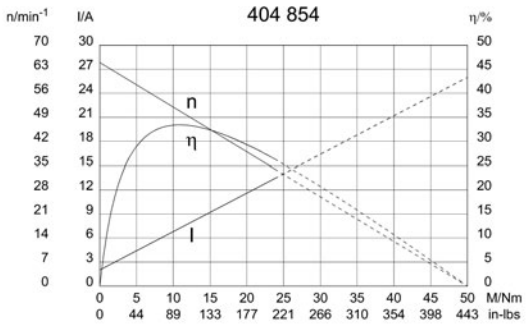
Sensor data	
Pulses	69
Output channels	1

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6 µH
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d=for selftapping screw M6 DIN ISO 965-2

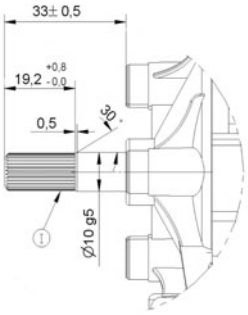
Motor picture

Characteristic curves

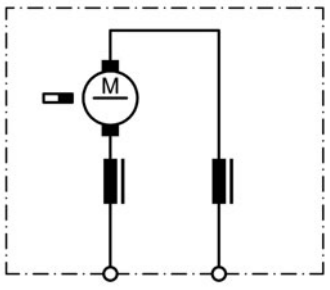


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

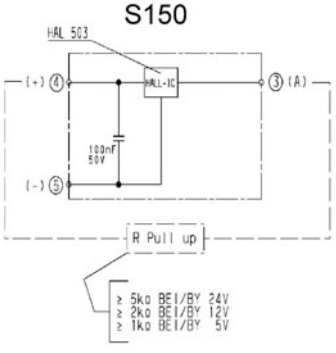
W330



S 27



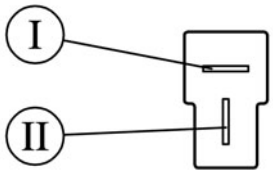
S150



I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60° - go/no go gauge Frenco 33906 - www.frenco.de

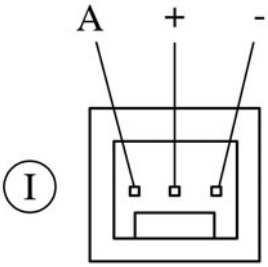
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

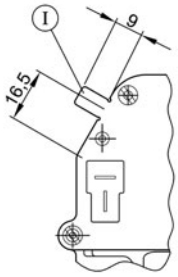
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



Ground connection 6.3 x 0.8 DIN 46 244,

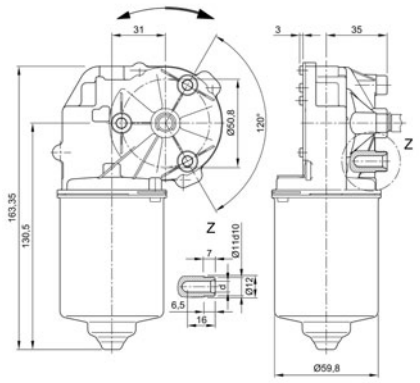
d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK31
Motor type 404 864

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: ball - B:sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	66.0
Nominal power [W]	P_N	25.4
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

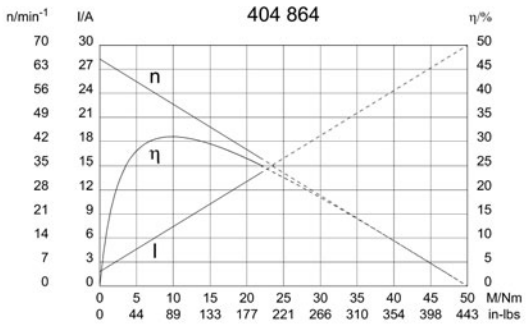
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	3,5µH, 1µF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

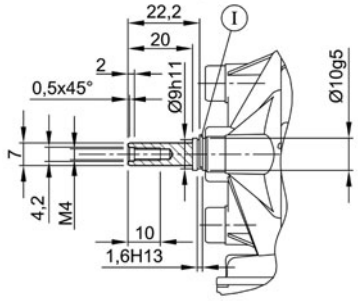
Motor picture

Characteristic curves

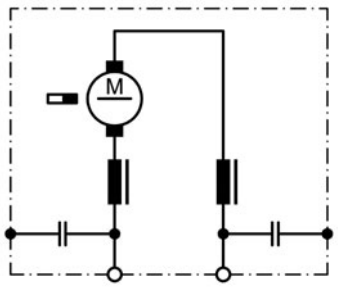


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

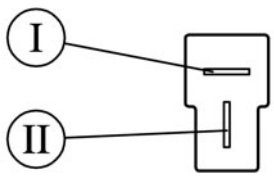
W 289



S 30



K 320



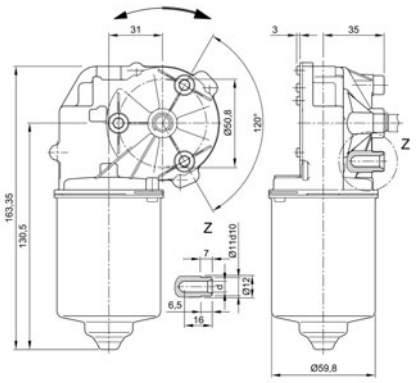
I Circlip

Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 404 865

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	75.0
Nominal power [W]	P_N	28.9
Nominal current [A]	I_N	5.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

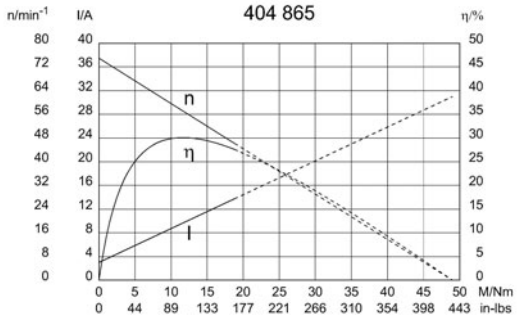
Sensor data	
Pulses	69
Output channels	2

Other data	
Gear ratio	69/1
Gear wheel material	Plastic
Suppression components	6.0µH, 1nF
Enclosure class	IP30
Weight [kg]	1.210

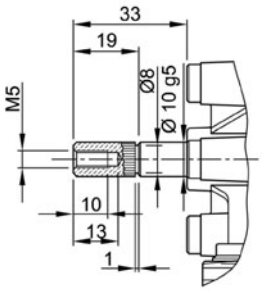
Remarks: d = for thread-forming screw M6 DIN ISO 965-2

Motor picture

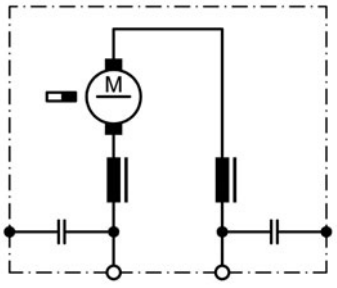
Characteristic curves



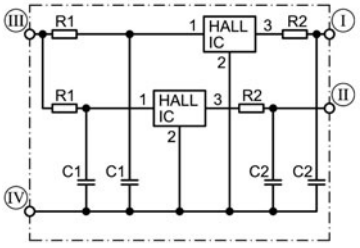
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 30



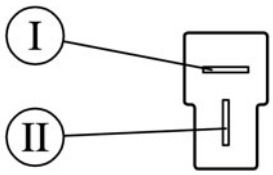
S 141



I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

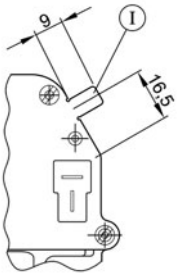
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320

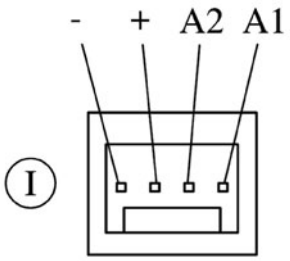


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 321



I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244



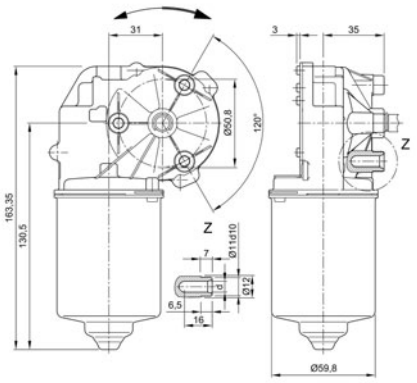
I Mating connector: Panduit CE100 F22-04

Notes

Series DCK31
Motor type 404 866

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:ball - B:sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	64.0
Nominal power [W]	P_N	24.4
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

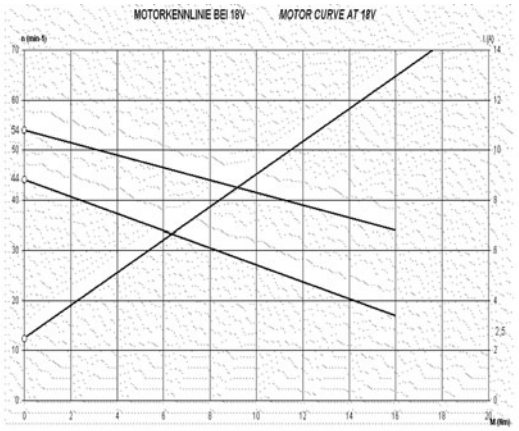
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.216

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

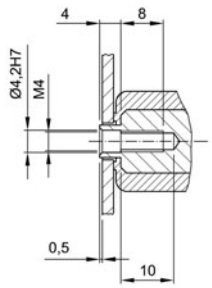
Motor picture

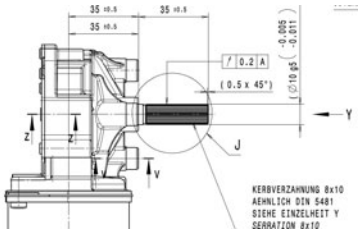
Characteristic curves



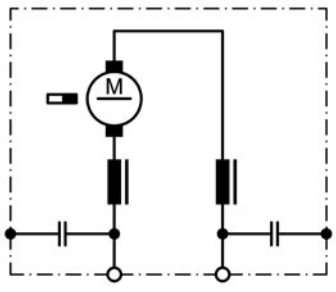
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 222





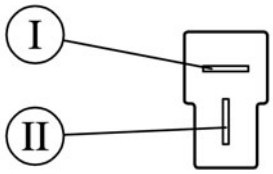
S 30



! Only for connection of encoder

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Notes

Series DCK31
Motor type 404 867

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: ball - B:sleeve

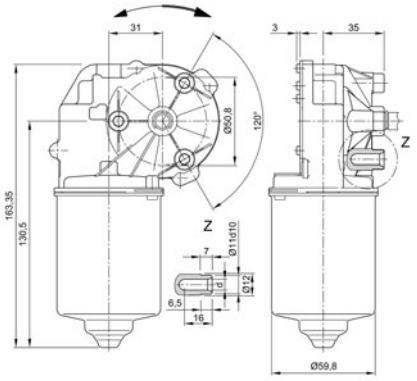
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	35.0
Nominal power [W]	P_N	19.2
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.210

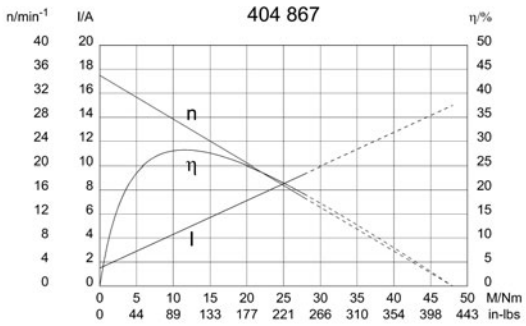
Remarks: d = for thread-forming screw M6 DIN ISO 965-2

0266 AR



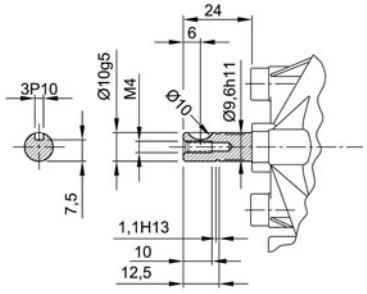
Motor picture

Characteristic curves

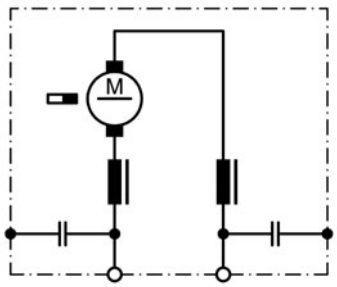


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

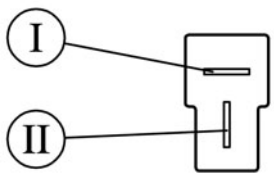
W 304



S 30



K 320

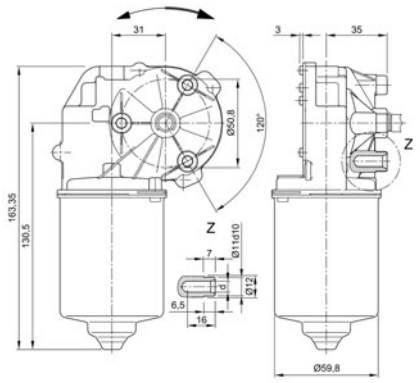


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 404 868

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:ball - B:sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	7.79
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

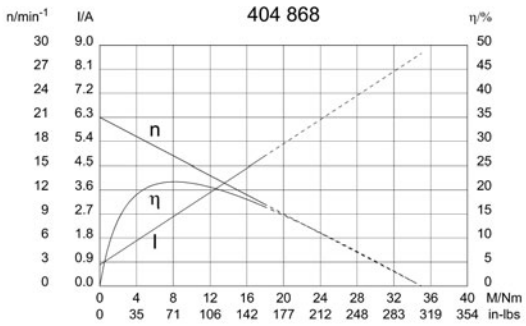
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	3,5µH,1µF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

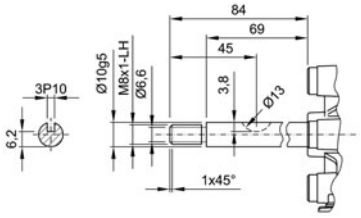
Motor picture

Characteristic curves

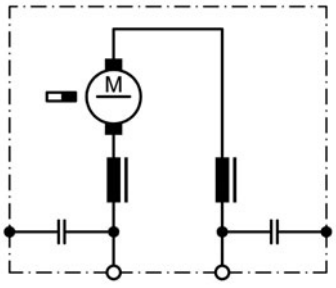


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

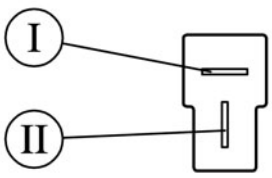
W 120



S 30



K 320

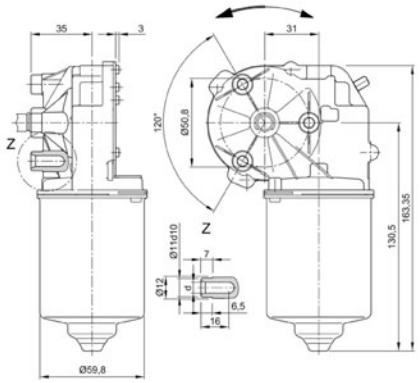


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 404 872

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	30.0
Nominal power [W]	P_N	10.8
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

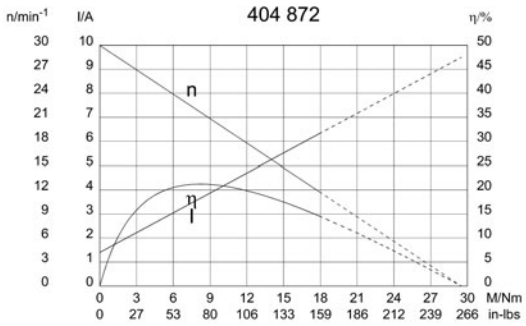
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

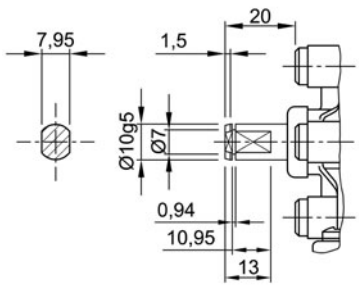
Motor picture

Characteristic curves

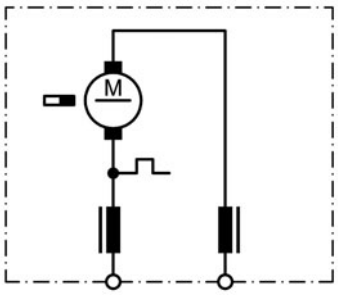


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

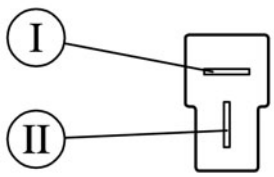
W 252



S 25



K 320

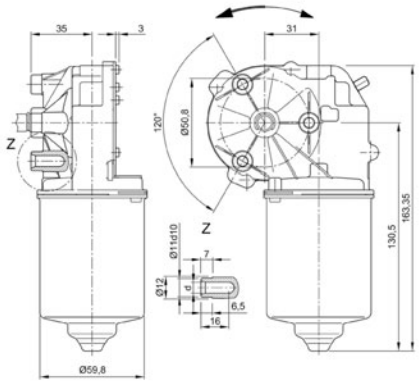


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 404 961

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	160.0
Nominal power [W]	P_N	30.9
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

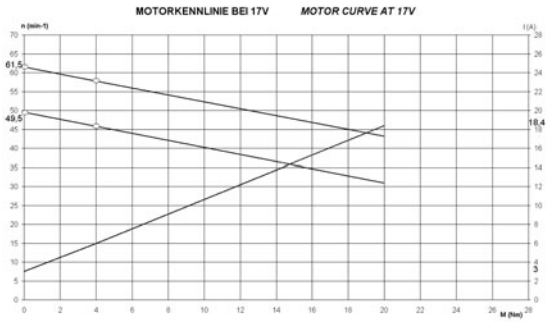
Sensor data	
Pulses	1
Output channels	2

Other data	
Gear ratio	53/2
Gear wheel material	plastic
Suppression components	6µH,1nF
Enclosure class	IP 30
Weight [kg]	1.210

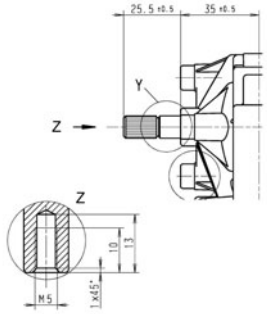
Remarks: d= for thread forming screw M6 DIN ISO 965-2

Motor picture

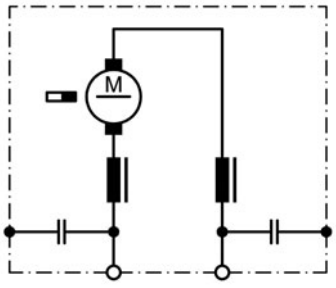
Characteristic curves



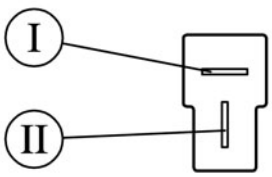
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 30



K 320



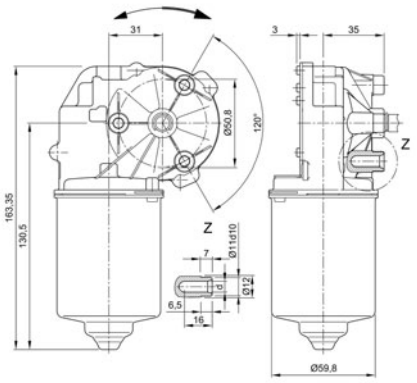
I serration (rolled): **No teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60° - go/no go gauge Frenco 33906 - www.frenco.de

Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 404 987

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B:Sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	14.0
Nominal power [W]	P_N	3.60
Nominal current [A]	I_N	1.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

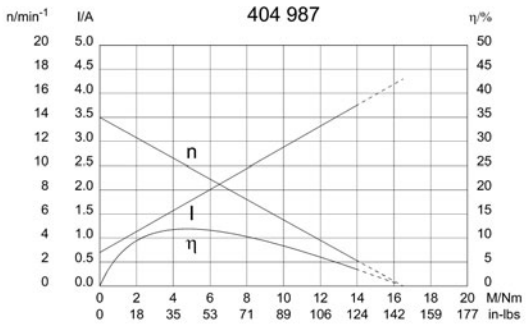
Sensor data	
Pulses	234
Output channels	1

Other data	
Gear ratio	78/1
Gear wheel material	bronze
Suppression components	6µH,1nF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

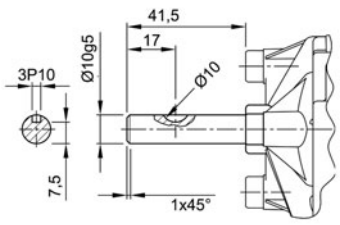
Motor picture

Characteristic curves

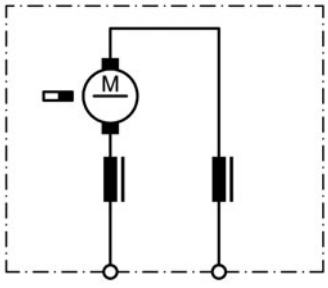


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

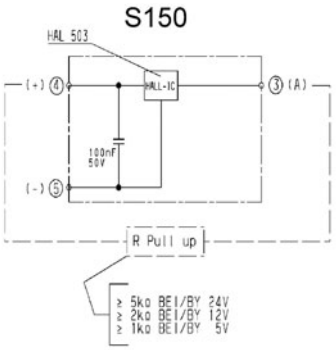
W 327



S 27

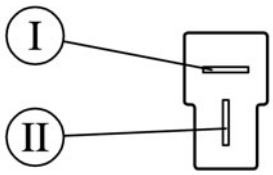


S150



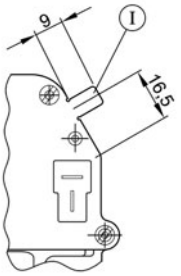
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



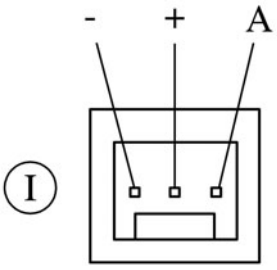
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 321



I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

K 326



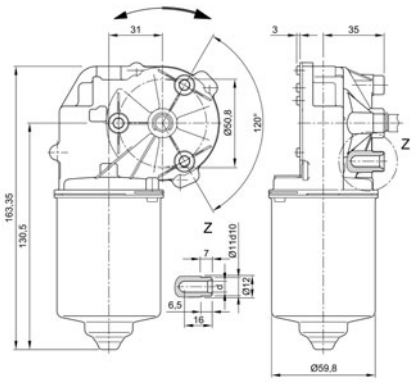
MAS-CON solder tail MLAS 100-3435 mating with end connector CE 100F-22-xx-x-x or CEP 100F-22-xx-x-x

Notes

Series DCK31
Motor type 404 988

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: ball - B: sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	36.0
Nominal power [W]	P_N	12.9
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

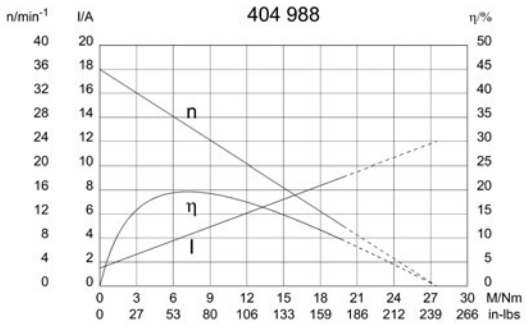
Sensor data	
Pulses	207
Output channels	1

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

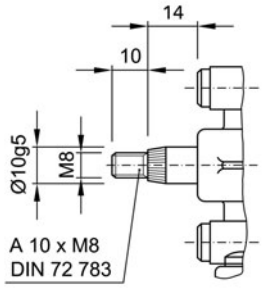
Motor picture

Characteristic curves

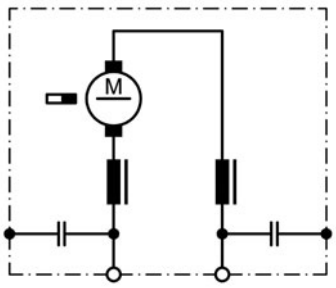


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

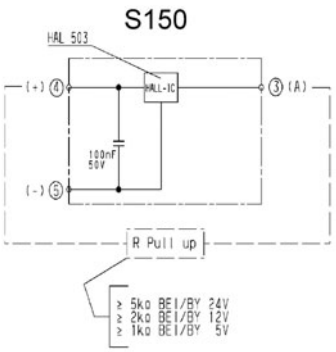
W 205



S 30

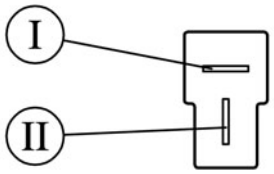


S150



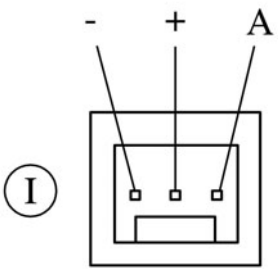
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



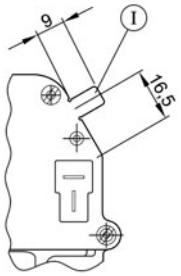
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 326



MAS-CON solder tail MLAS 100-3435 mating with end connector CE 100F-22-xx-x-x or CEP 100F-22-xx-x-x

K 321



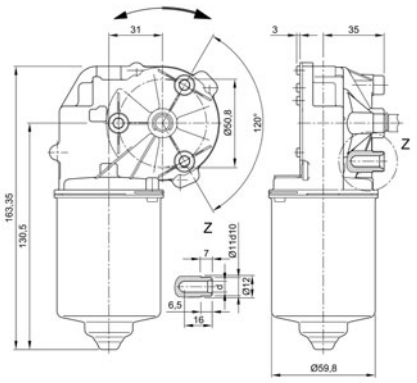
I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

Notes

Series DCK31
Motor type 404 990

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	195.0
Nominal power [W]	P_N	52.5
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

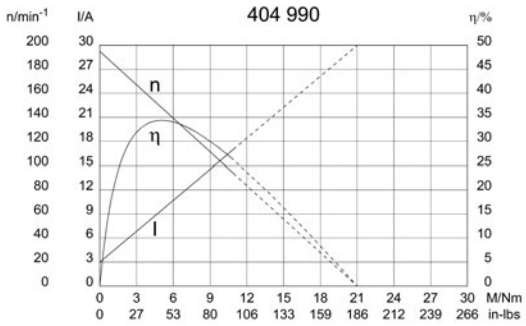
Sensor data	
Pulses	207
Output channels	1

Other data	
Gear ratio	53/2
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

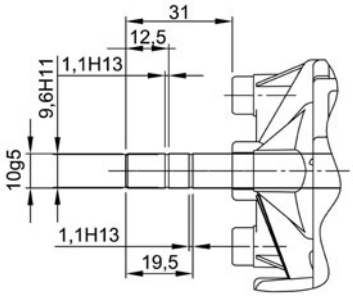
Motor picture

Characteristic curves

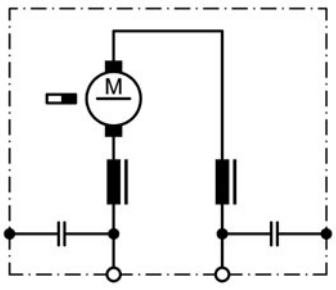


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

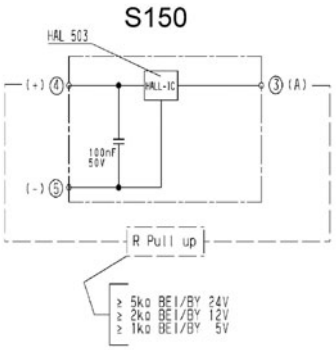
W 328



S 30

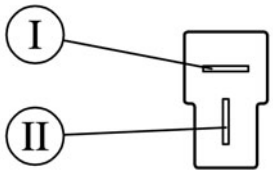


S150



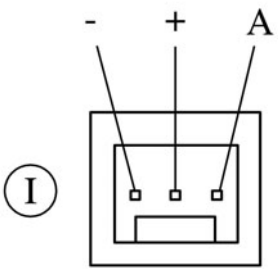
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



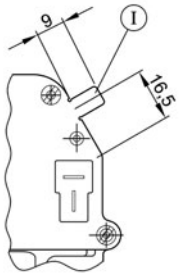
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 326



MAS-CON solder tail MLAS 100-3435 mating with end connector CE 100F-22-xx-x-x or CEP 100F-22-xx-x-x

K 321



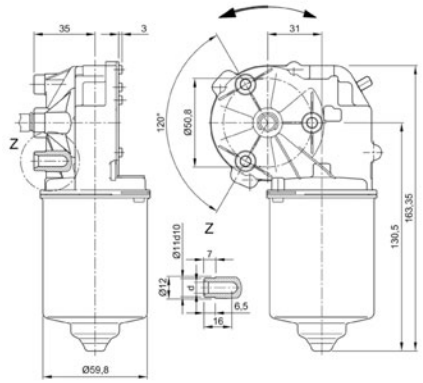
I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

Notes

Series DCK31
Motor type 404 991

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball- B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	270.0
Nominal power [W]	P_N	24.5
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

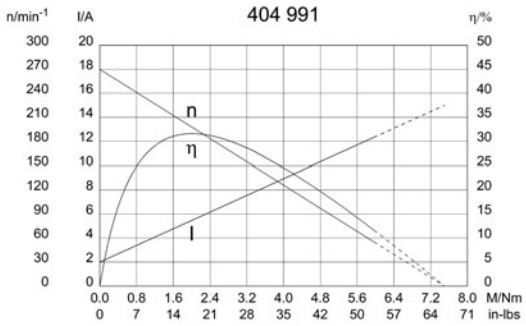
Sensor data	
Pulses	10.25
Output channels	1

Other data	
Gear ratio	41/4
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

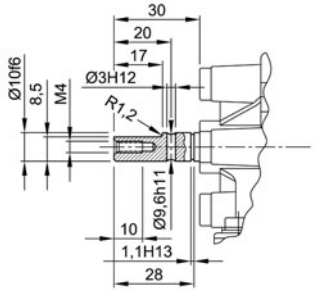
Motor picture

Characteristic curves

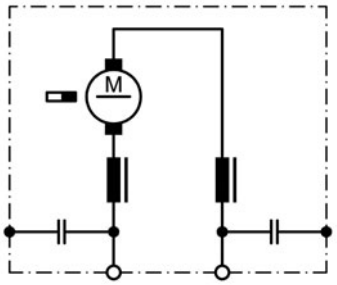


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

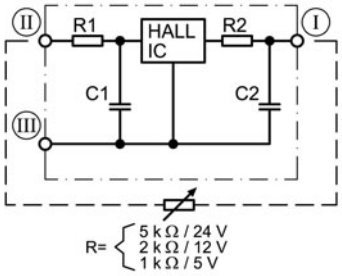
W 40



S 30



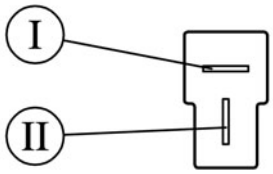
S 124



I Terminal 3, A
II Terminal 4, +
III Terminal 5, -

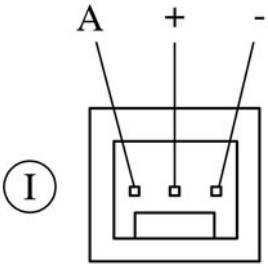
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

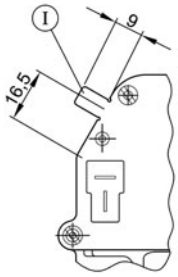
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



Ground connection 6.3 x 0.8 DIN 46 244,

d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK31
Motor type 405 002

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

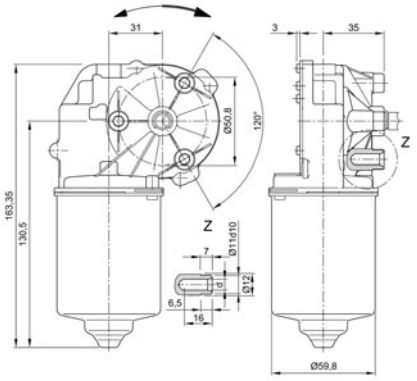
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	7.79
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	3,5µH, 1µF
Enclosure class	IP 30
Weight [kg]	1.210

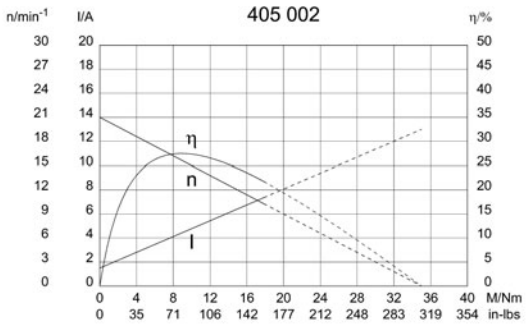
Remarks: d = for thread-forming screw M6 DIN ISO 965-2

0266 AR



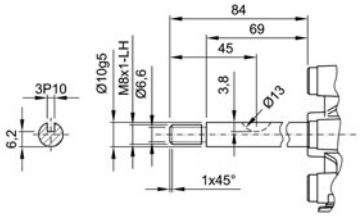
Motor picture

Characteristic curves

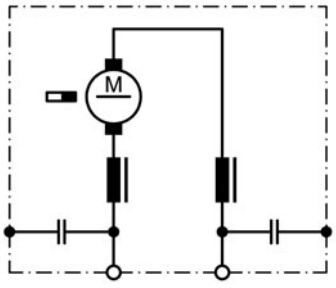


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

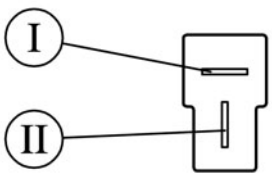
W 120



S 30



K 320

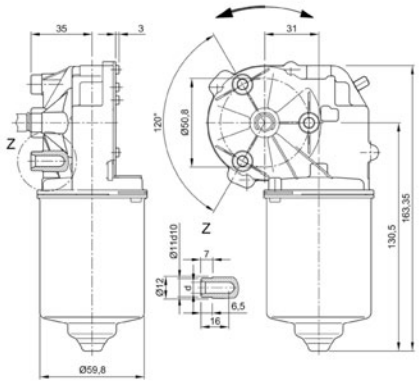


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK31
Motor type 405 006

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	65.0
Nominal power [W]	P_N	25.0
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

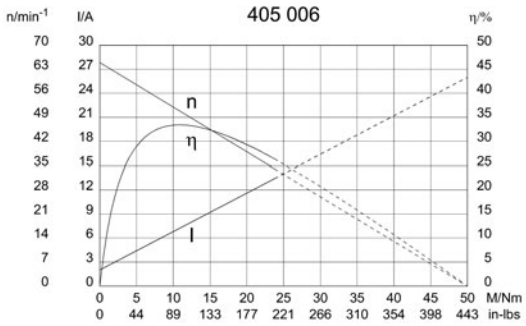
Sensor data	
Pulses	69
Output channels	2

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

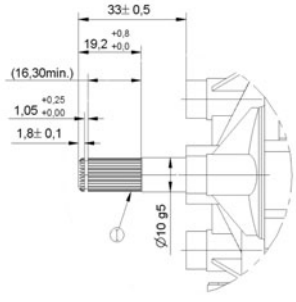
Motor picture

Characteristic curves

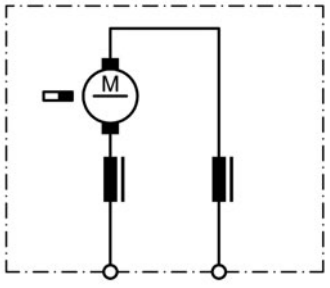


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

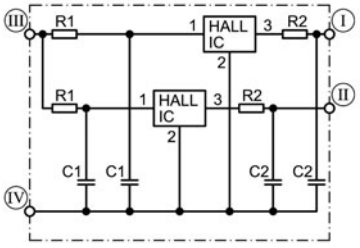
W334



S 27



S 141

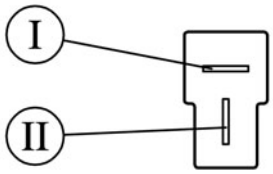


I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60° - go/no go gauge Frenco 33906 - www.frenco.de

I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

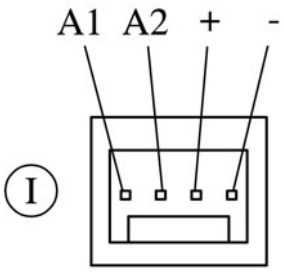
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

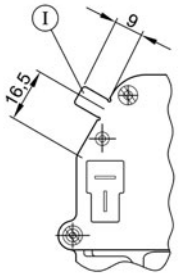
K 324



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



Ground connection 6.3 x 0.8 DIN 46 244,

d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK31
Motor type 405 054

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

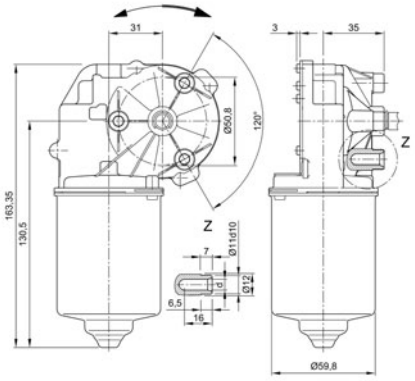
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	195.0
Nominal power [W]	P_N	59.9
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	26.5
Output channels	2

Other data	
Gear ratio	53/2
Gear wheel material	Plastic
Suppression components	6.0µH, 1nF
Enclosure class	IP30
Weight [kg]	1.210

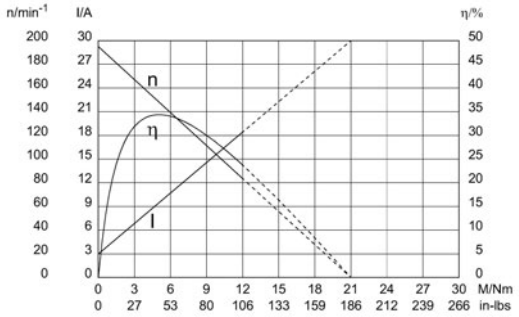
Remarks: d = for thread-forming screw M6 DIN ISO 965-2

0266 AR



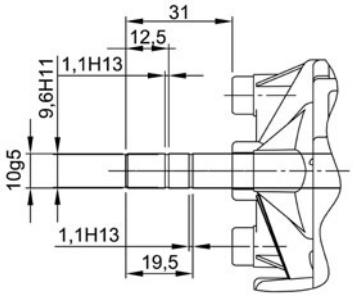
Motor picture

Characteristic curves

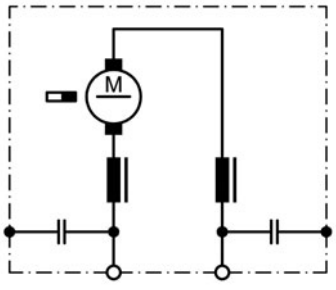


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

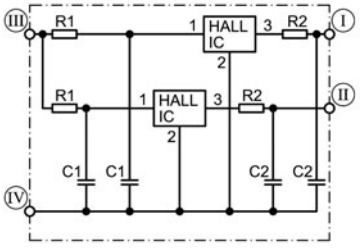
W 328



S 30



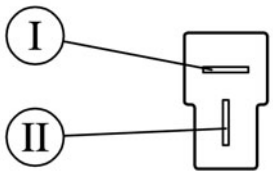
S 141



I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

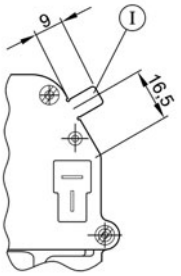
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320

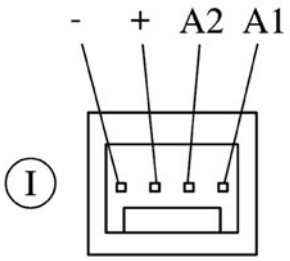


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 321



I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244



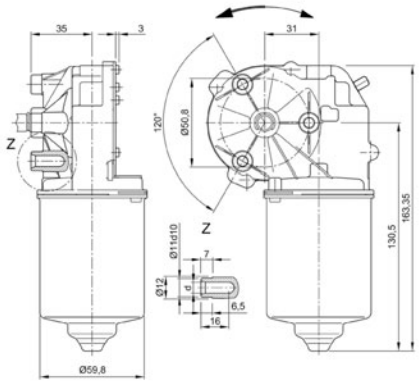
I Mating connector: Panduit CE100 F22-04

Notes

Series DCK31
Motor type 405 072

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	55.0
Nominal power [W]	P_N	21.5
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

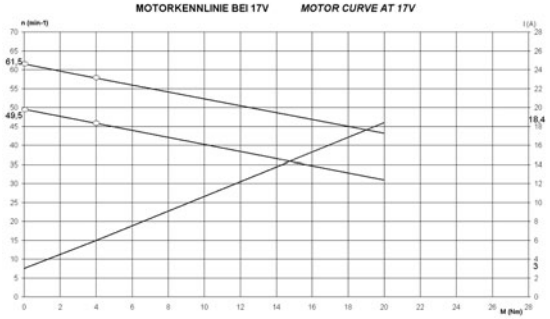
Sensor data	
Pulses	78
Output channels	1

Other data	
Gear ratio	78/1
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d= for thread forming screw M6 DIN ISO 965-2

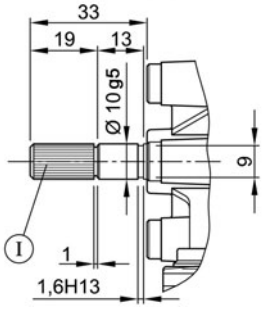
Motor picture

Characteristic curves

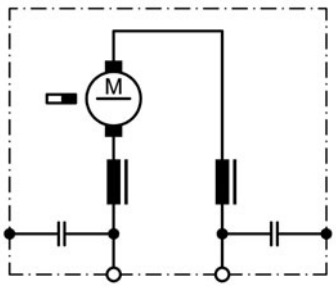


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

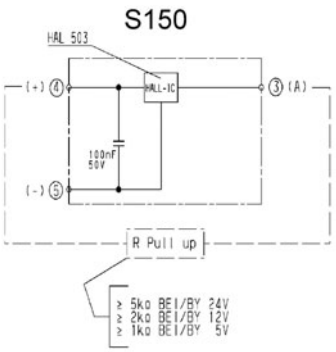
W 277



S 30



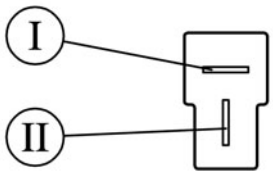
S150



I serration (rolled)
no of teeth 28, **pitch circle dia** 9 mm, **tip circle dia** 9,6 mm, **root circle dia** 8,26 mm **space width angle** 60°
goes with go/no go gauge Frenco 33906
www.frenco.de

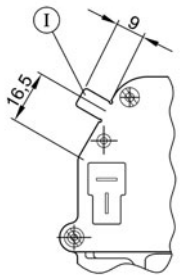
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

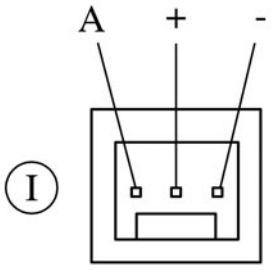
K 312



Ground connection 6.3 x 0.8 DIN 46 244,

d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5 www.stocko.de

K 325



MAS-CON Solder tail MLAS 100-3435 mating

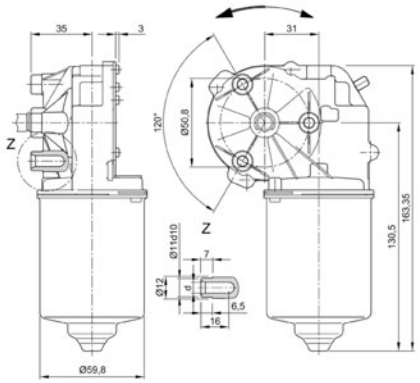
with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

Notes

Series DCK31
Motor type 405 197

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	90.0
Nominal power [W]	P_N	35.9
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

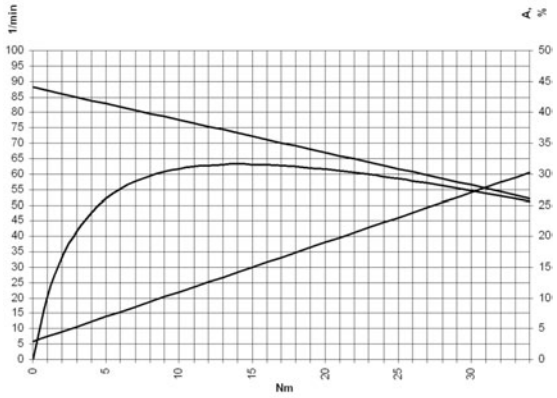
Sensor data	
Pulses	69
Output channels	1

Other data	
Gear ratio	69/1
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.210

Remarks: d=for thread forming screws M6 DIN-ISO 965-2

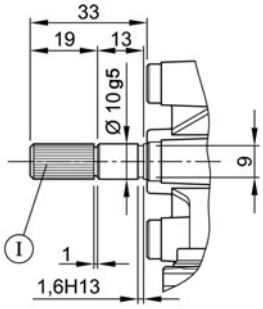
Motor picture

Characteristic curves

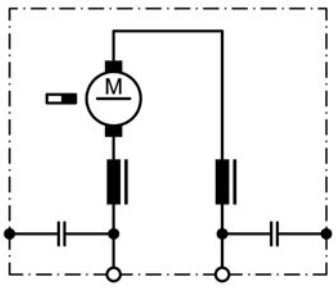


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

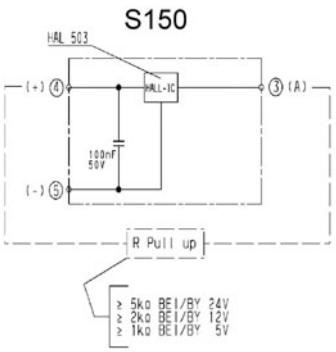
W 277



S 30



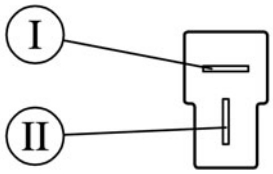
S150



I serration (rolled)
no of teeth 28, **pitch circle dia** 9 mm, **tip circle dia** 9,6 mm, **root circle dia** 8,26 mm **space width angle** 60°
goes with go/no go gauge Frenco 33906
www.frenco.de

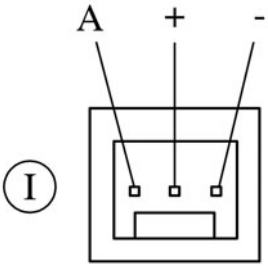
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

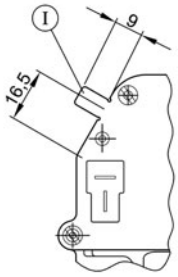
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



Ground connection 6.3 x 0.8 DIN 46 244,

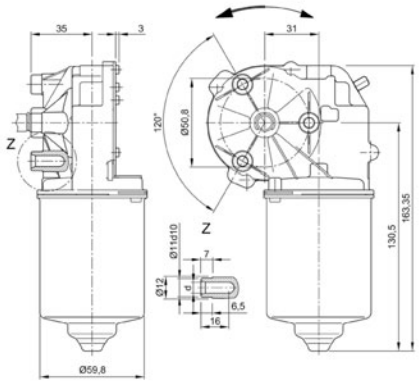
d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK31
Motor type 405 251

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0266 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	120.0
Nominal power [W]	P_N	22.0
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

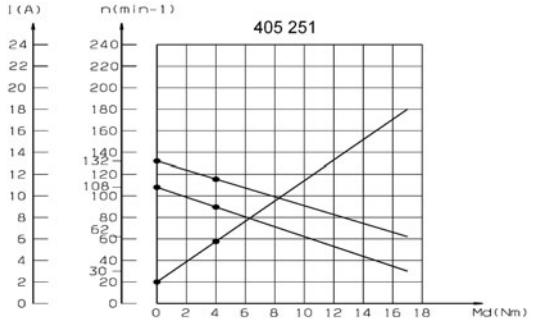
Sensor data	
Pulses	79.5
Output channels	1

Other data	
Gear ratio	53/2
Gear wheel material	Plastic
Suppression components	6.0µH, 1nF
Enclosure class	IP30
Weight [kg]	1.210

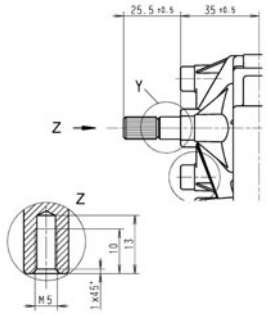
Remarks: d = for thread-forming screw M6 DIN ISO 965-2

Motor picture

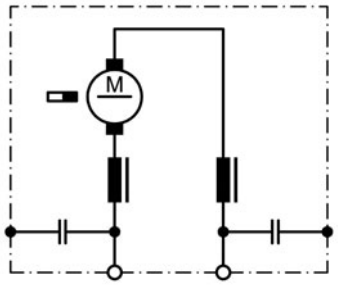
Characteristic curves



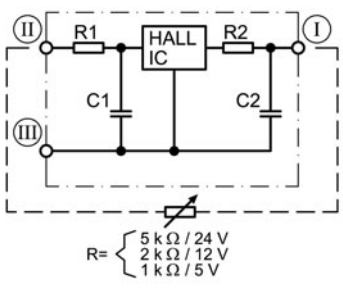
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 30



S 124

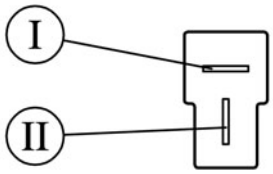


I serration (rolled): **No teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60° - go/no go gauge Frenco 33906 - www.frenco.de

I Terminal 3, A
II Terminal 4, +
III Terminal 5, -

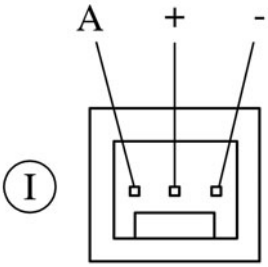
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

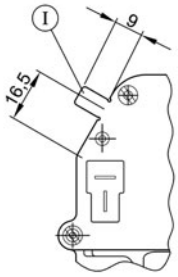
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



Ground connection 6.3 x 0.8 DIN 46 244,

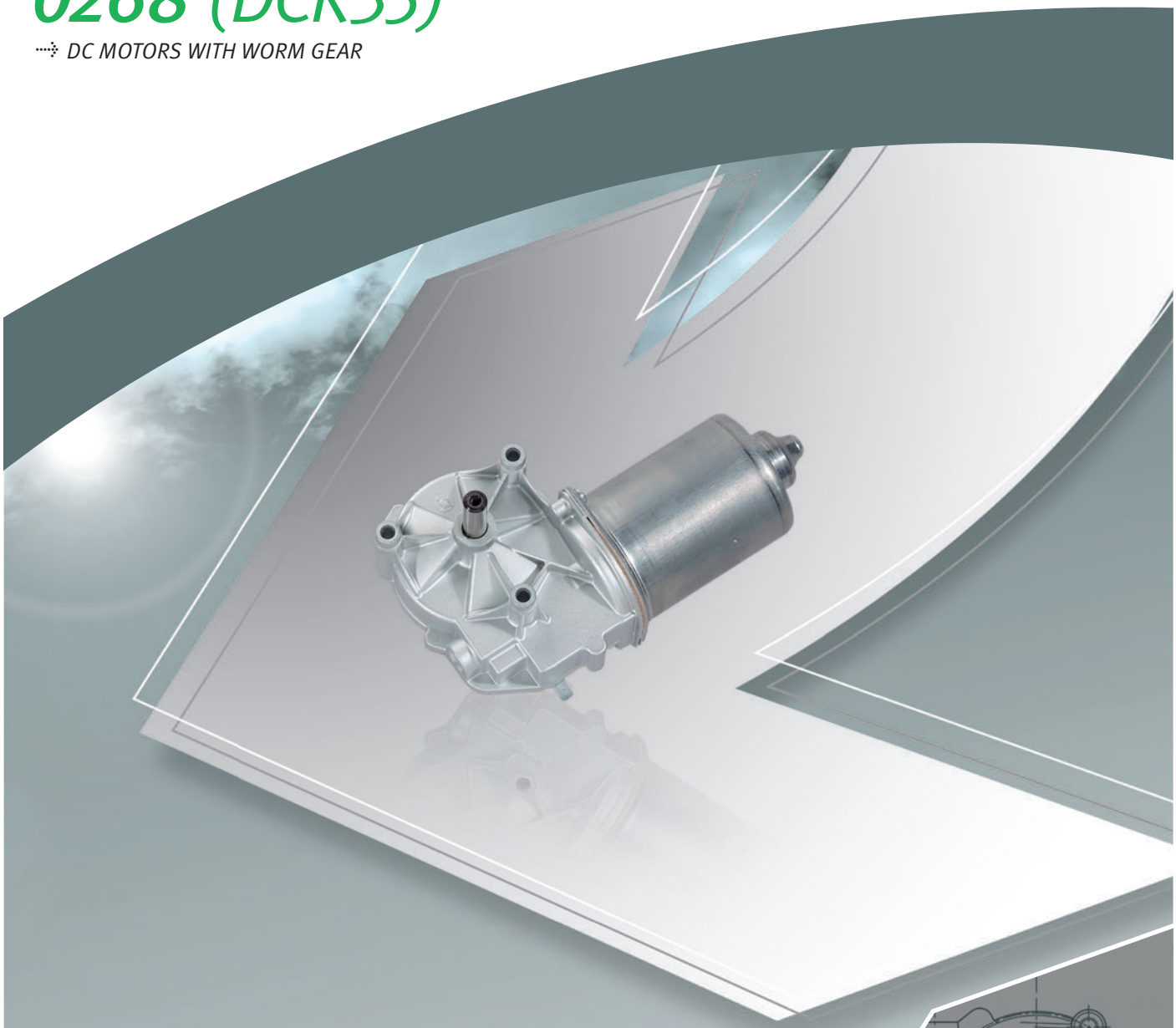
d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Notes

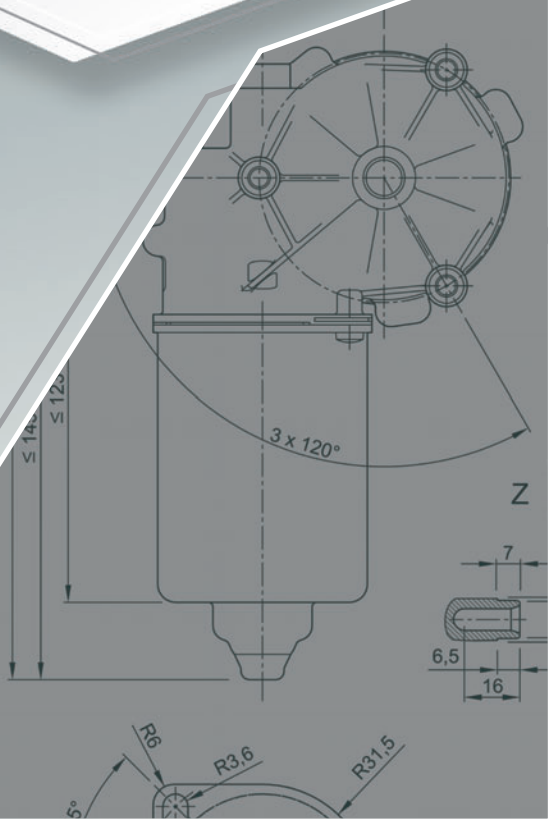
0268 (DCK35)

···› DC MOTORS WITH WORM GEAR



···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional



···› INDUSTRIAL APPLICATION

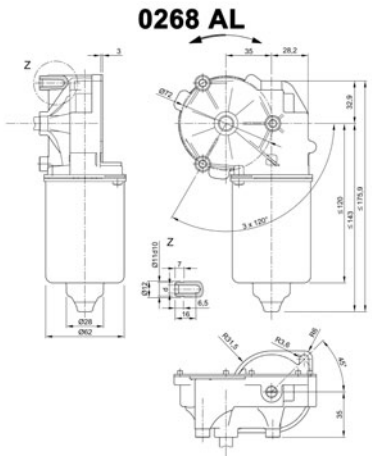
Home automation, machine construction

···› AUTOMOTIVE APPLICATION

Trunk & tailgate opening & closing

Series DCK35
Motor type 404 885

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	62.0
Nominal power [W]	P_N	29.8
Nominal current [A]	I_N	5.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

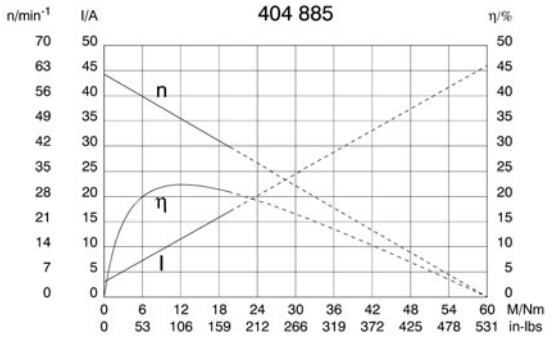
Sensor data	
Pulses	63
Output channels	2

Other data	
Gear ratio	63/1
Gear wheel material	plastic
Suppression components	3,5µH
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

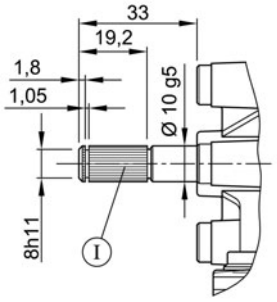
Motor picture

Characteristic curves



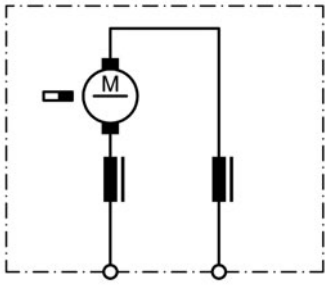
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 321

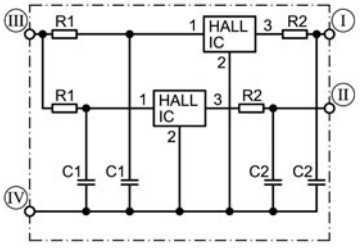


I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60°- go/no go gauge Frenco 33906 - www.frenco.de

S 27



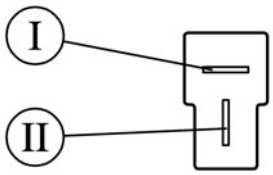
S 141



I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

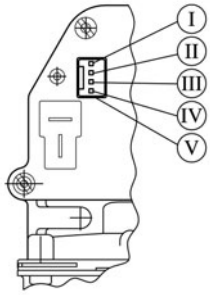
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



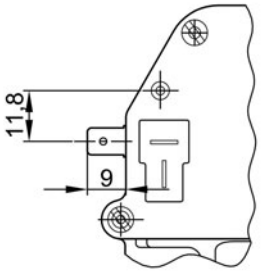
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 319



I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6
V Mating connector: Panduit CE100 F22 - 04

K 314

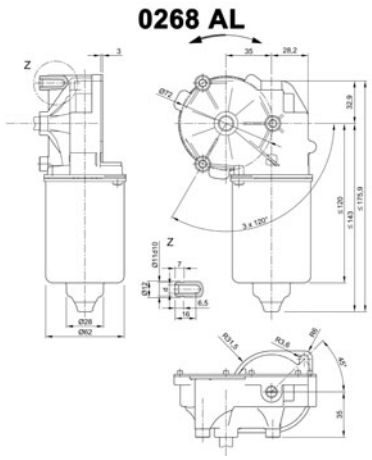


I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

Notes

Series DCK35
Motor type 404 938

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	28.7
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

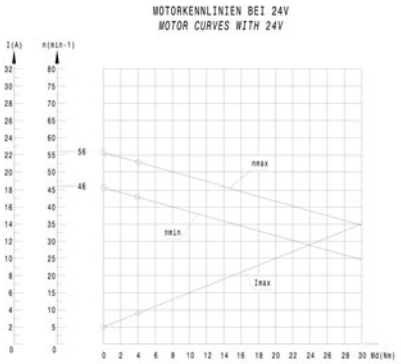
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	63/1
Gear wheel material	plastic
Suppression components	3,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d=for thread forming screws M6 DIN ISO 965-2

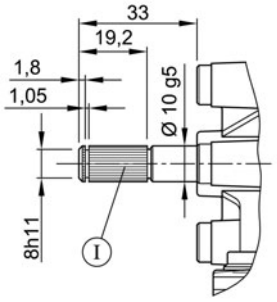
Motor picture

Characteristic curves



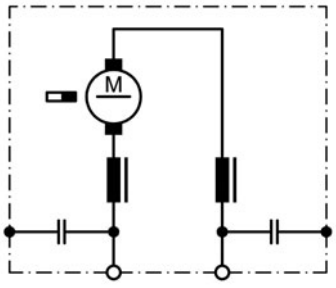
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 321

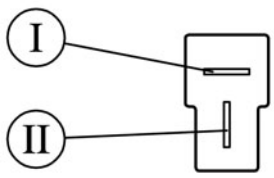


I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60°- go/no go gauge Frenco 33906 - www.frenco.de

S 30



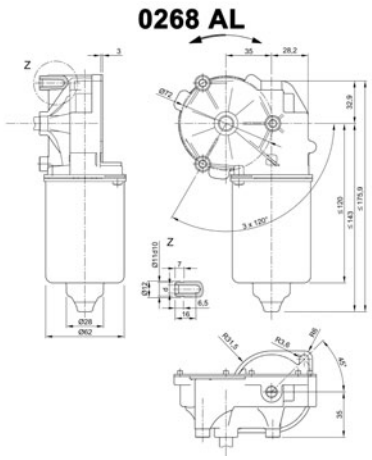
K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK35
Motor type 404 983

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	70.0
Nominal power [W]	P_N	33.5
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

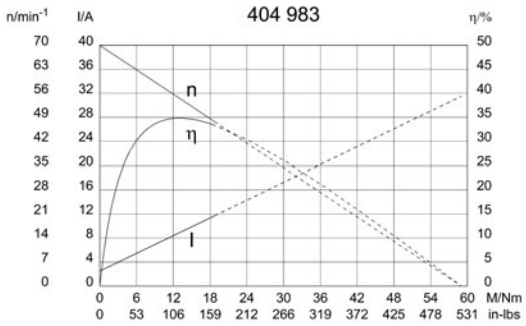
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	55/1
Gear wheel material	plastic
Suppression components	3,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.250

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

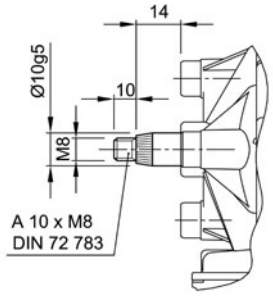
Motor picture

Characteristic curves

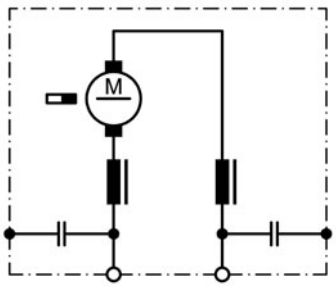


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

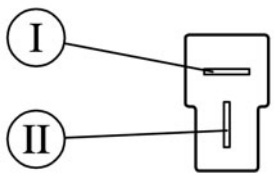
W 305



S 30



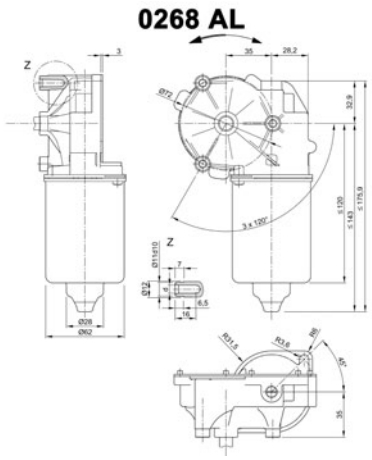
K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Series DCK35
Motor type 404 992

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	60.0
Nominal power [W]	P_N	29.3
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

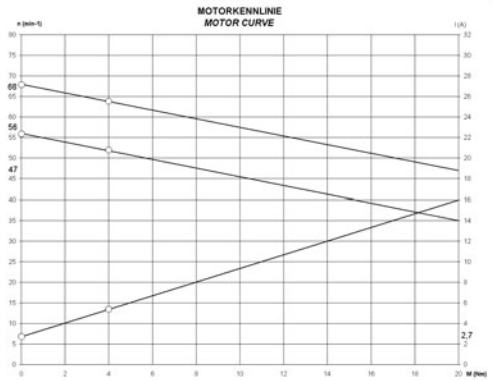
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	63/1
Gear wheel material	plastic
Suppression components	3,5µH
Enclosure class	IP 30
Weight [kg]	1.376

Remarks:

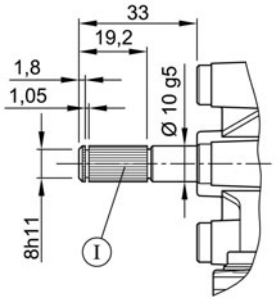
Motor picture

Characteristic curves



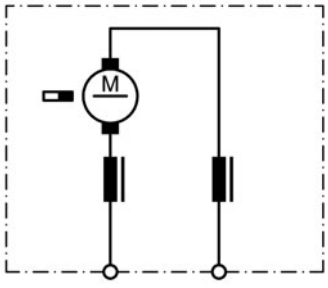
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 321

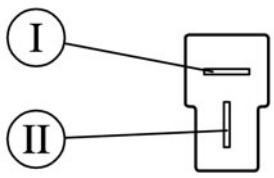


I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60°- go/no go gauge Frenco 33906 - www.frenco.de

S 27



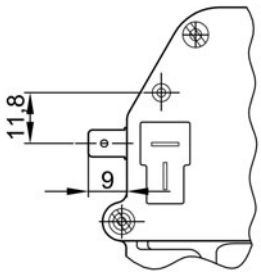
K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 314

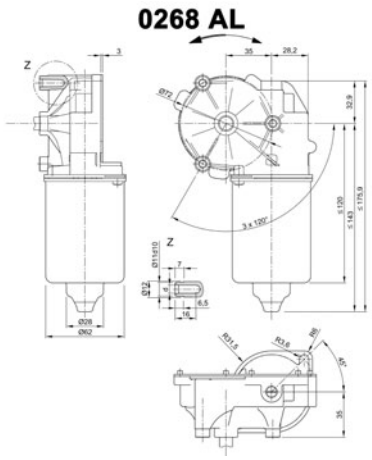


I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

Notes

Series DCK35
Motor type 405 032

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	75.0
Nominal power [W]	P_N	37.7
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

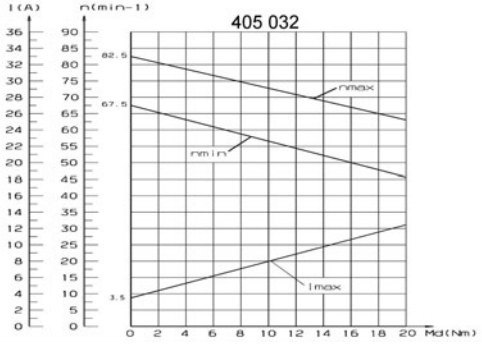
Sensor data	
Pulses	63
Output channels	1

Other data	
Gear ratio	63/1
Gear wheel material	Plastic
Suppression components	3.5µH
Enclosure class	IP30
Weight [kg]	1.250

Remarks: d = for thread-forming screw M6 DIN ISO 965-2

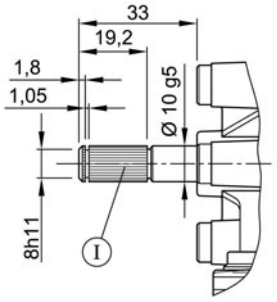
Motor picture

Characteristic curves

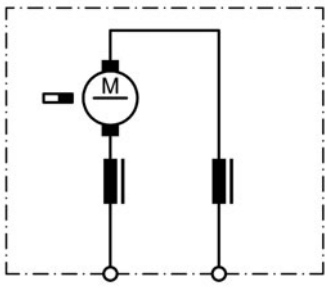


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

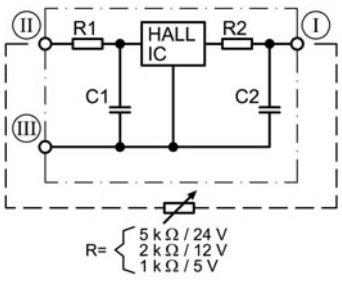
W 321



S 27



S 124

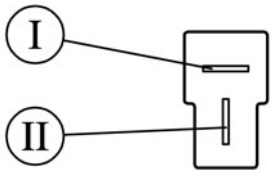


I serration (rolled): **no of teeth** 28, **pitch circle dia** 9 mm, **tip circle dia** 9.6 mm, **root circle dia** 8.26 mm **space width angle** 60°- go/no go gauge Frenco 33906 - www.frenco.de

I Terminal 3, A
II Terminal 4, +
III Terminal 5, -

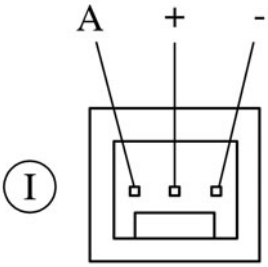
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

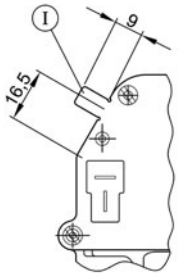
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



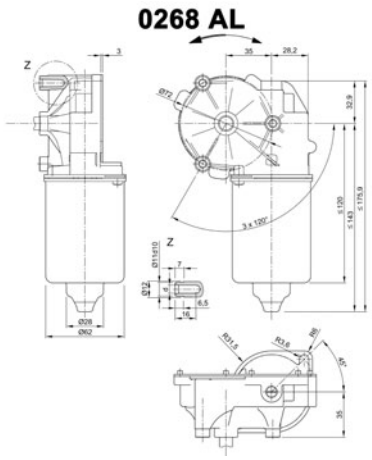
Ground connection 6.3 x 0.8 DIN 46 244,

d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK35
Motor type 405 033

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	53.0
Nominal power [W]	P_N	39.2
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

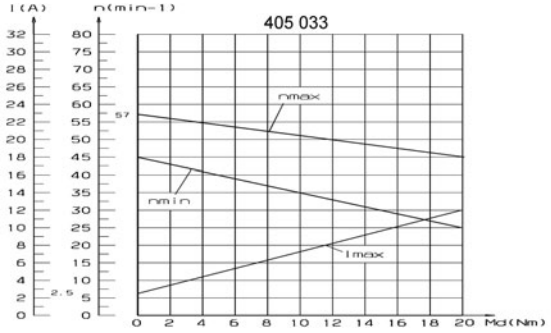
Sensor data	
Pulses	91
Output channels	1

Other data	
Gear ratio	91/1
Gear wheel material	plastic
Suppression components	3,5µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.250

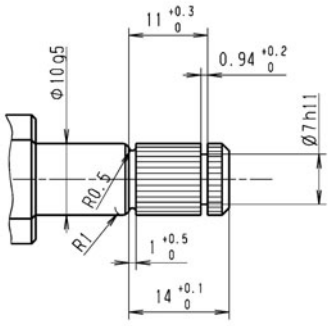
Remarks: d=for thread forming screws M6 DIN ISO 965-2

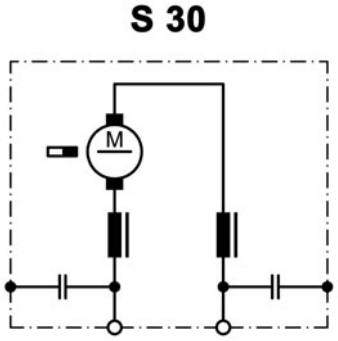
Motor picture

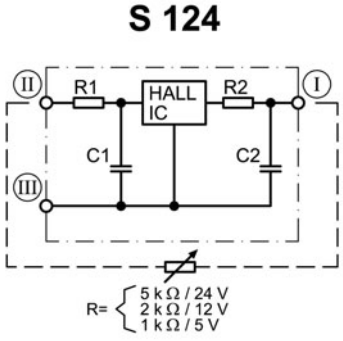
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





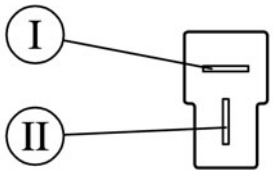


Splines: 8 x 10 (according to DIN 5481)
Output shaft length = 28mm

I Terminal 3, A
II Terminal 4, +
III Terminal 5, -

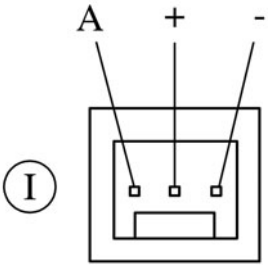
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320



Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

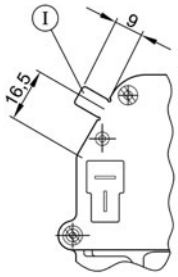
K 325



MAS-CON Solder tail MLAS 100-3435 mating

with end connector CE100F-22-xx-x-x or CEP100 F-22-xx-x-x
www.itwpancon.com

K 312



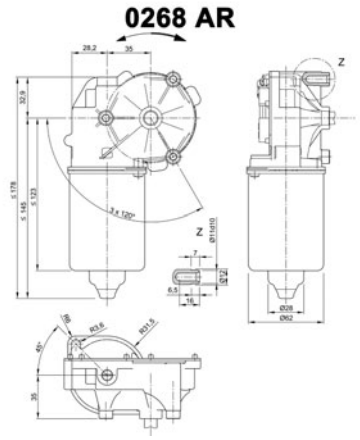
Ground connection 6.3 x 0.8 DIN 46 244,

d=0.9-0.1mm, mating with receptacle for tab, conductor cross section 0.5-1.5 sqmm/20-16 AWG, part# RSB8240.158 F 6.3-1.5
www.stocko.de

Notes

Series DCK35
Motor type 405 060

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	60.0
Nominal power [W]	P_N	35.0
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

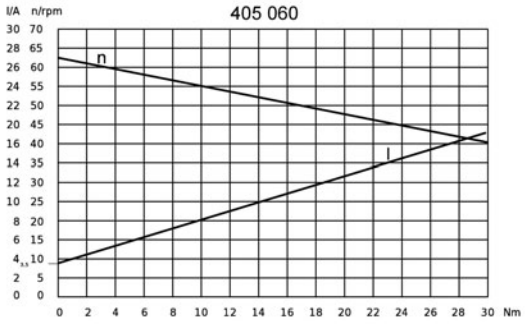
Sensor data	
Pulses	91
Output channels	1

Other data	
Gear ratio	91/1
Gear wheel material	plastic
Suppression components	3,5µ, 1nF
Enclosure class	IP 30
Weight [kg]	0.000

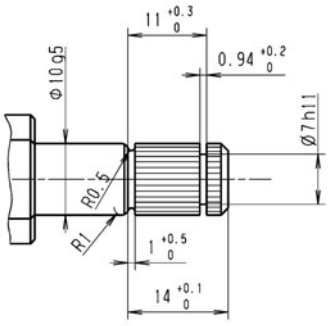
Remarks: d=for thread forming screw M6 DIN ISO 964-2

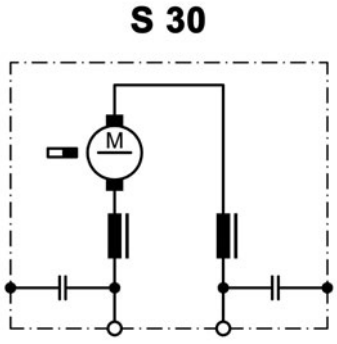
Motor picture

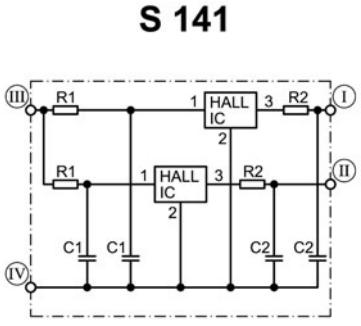
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





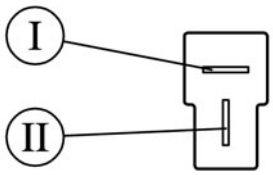


Splines: 8 x 10 (according to DIN 5481)
Output shaft length = 28mm

I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

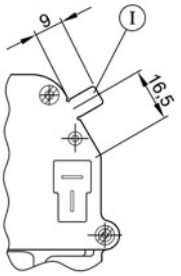
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320

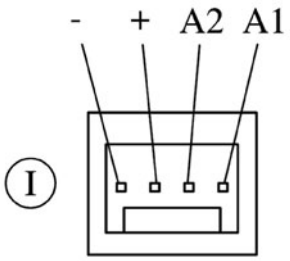


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 321



I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244

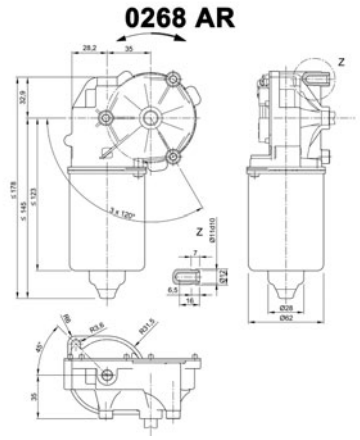


I Mating connector: Panduit CE100 F22-04

Notes

Series DCK35
Motor type 405 063

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	240.0
Nominal power [W]	P_N	65.6
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

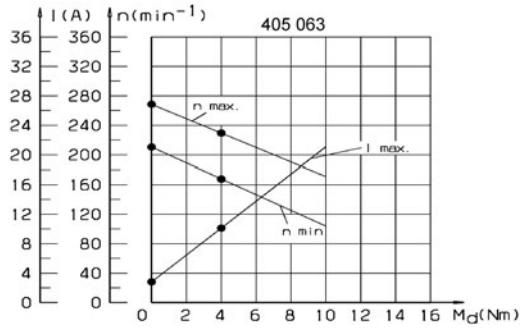
Sensor data	
Pulses	17.5
Output channels	2

Other data	
Gear ratio	70/4
Gear wheel material	plastic
Suppression components	6µH, 1nF
Enclosure class	IP 30
Weight [kg]	1.366

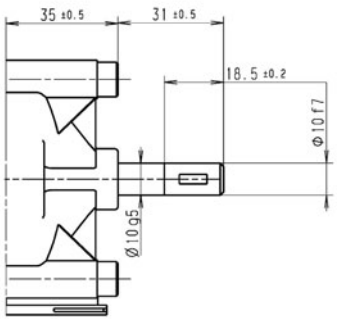
Remarks: d=for thread forming screw M6 DIN ISO 965-2

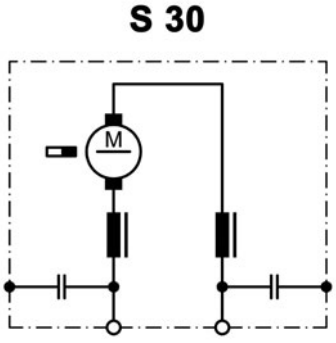
Motor picture

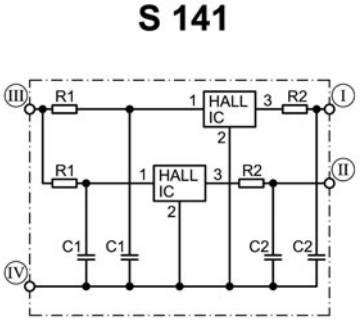
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



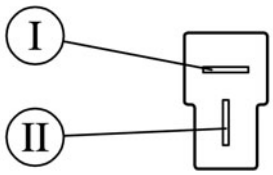




I Hall-IC A1, terminal 3
II Hall-IC A2, terminal 4
III Hall-IC +, terminal 5
IV Hall-IC -, terminal 6

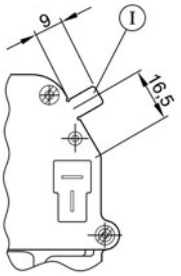
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 320

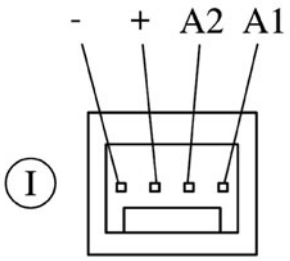


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 www.tycoelectronics.com

K 321



I Ground connection
Blade terminal 6.3 x 0.8 DIN 46 244



I Mating connector: Panduit CE100 F22-04

Notes

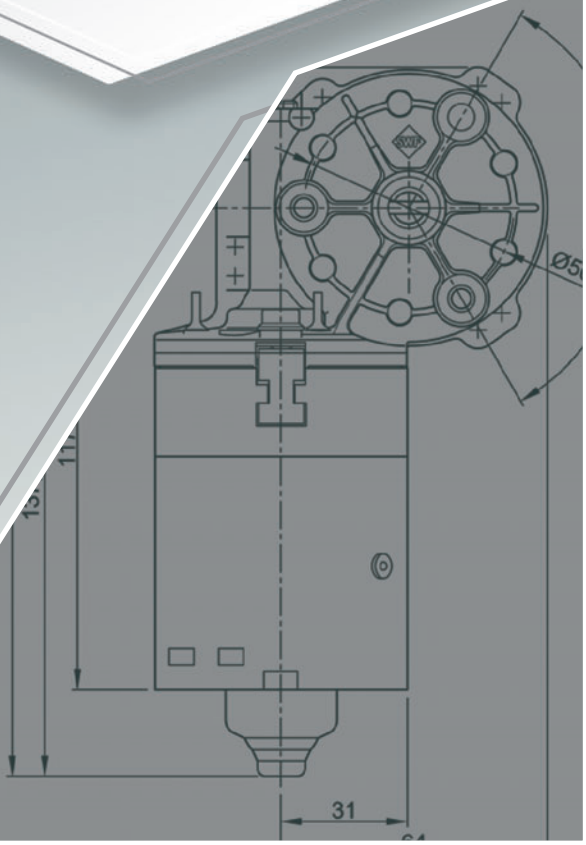
Notes

0270 (SWMK)

···› DC MOTORS WITH WORM GEAR

···› TECHNICAL DESCRIPTION

Motorhousing:	rolled, corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	aluminium die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector or tinned leads
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

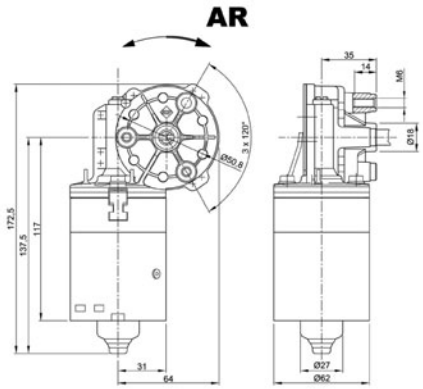


···› APPLICATION

Industry, Linear drives, General machinery, Vending machines, Agricultural technology, Office machines, Laboratory devices, Medical technology, Traffic & communications technology, Film/optics

Series SWMK
Motor type 402 600

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	17.7
Nominal current [A]	I_N	2.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

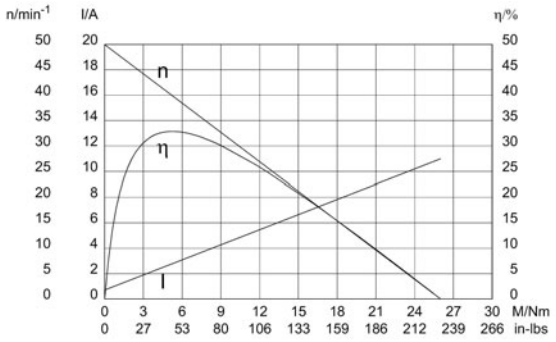
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	55/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	1.200

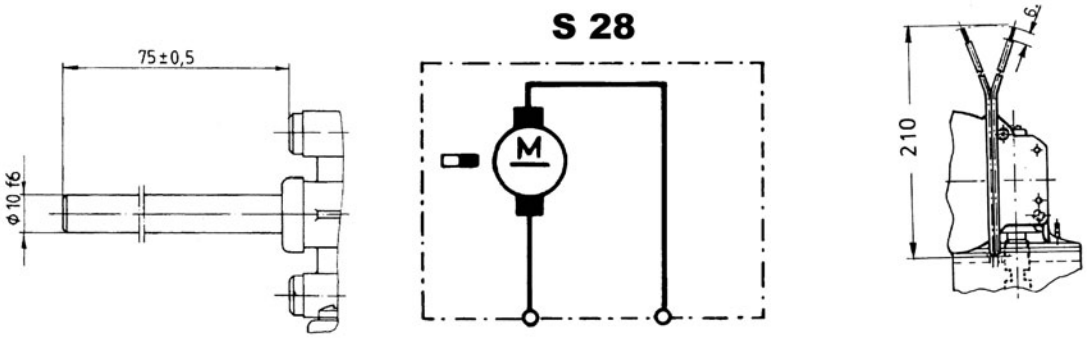
Remarks:

Motor picture

Characteristic curves

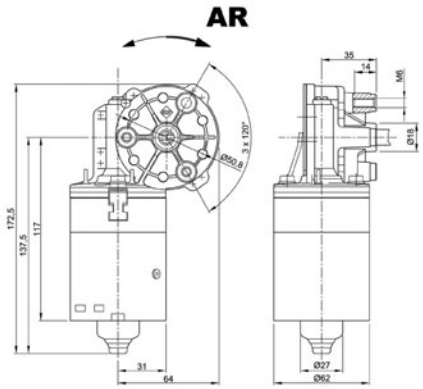


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



Series SWMK
Motor type 402 743

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	33.0
Nominal power [W]	P_N	11.7
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

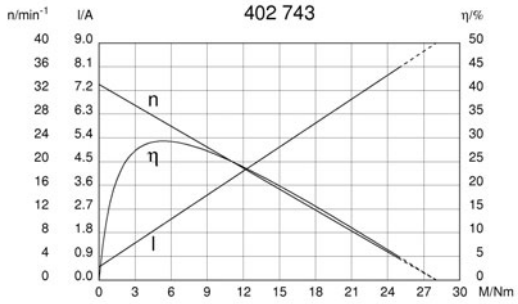
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	Plastic
Suppression components	4.7µH
Enclosure class	IP30
Weight [kg]	1.200

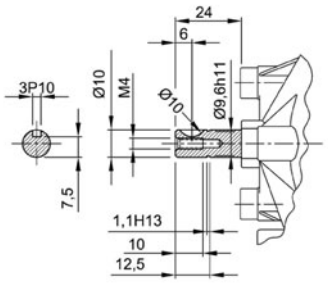
Remarks:

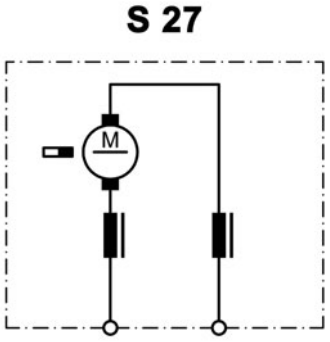
Motor picture

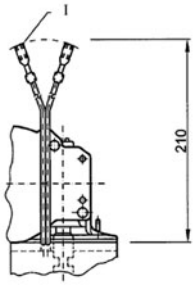
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



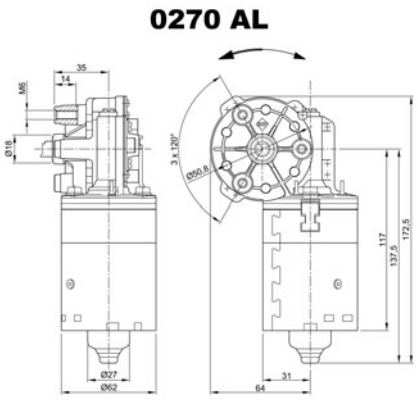




I: Spade connector 2.8 x 0.8 DIN 46 247

Series SWMK
Motor type 402 887

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	3.50
No-load speed [min^{-1}]	n_0	50.0
Nominal power [W]	P_N	15.9
Nominal current [A]	I_N	2.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

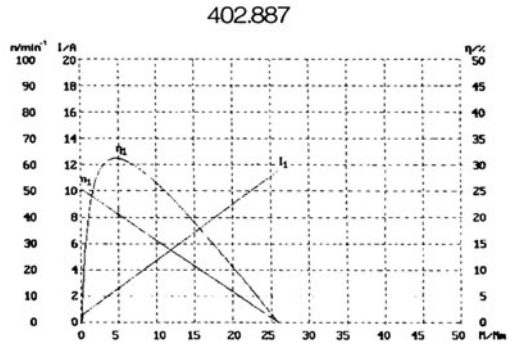
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	55/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP30
Weight [kg]	1.200

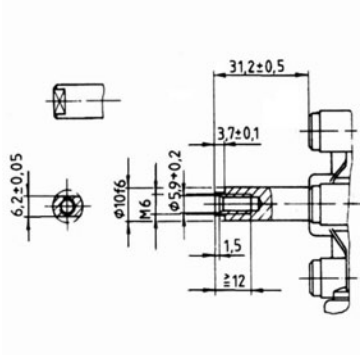
Remarks:

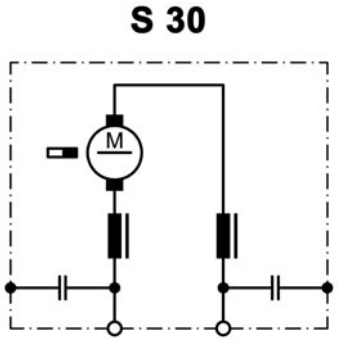
Motor picture

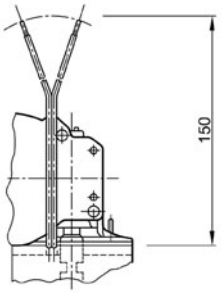
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

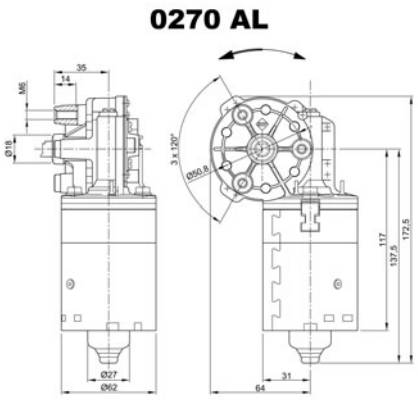






Series SWMK
Motor type 403 389

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	280.0
Nominal power [W]	P_N	24.9
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

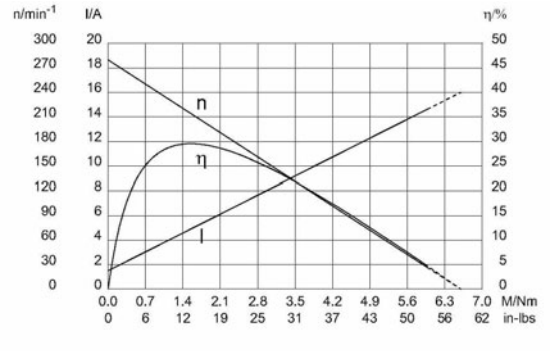
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	41/4
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	1.200

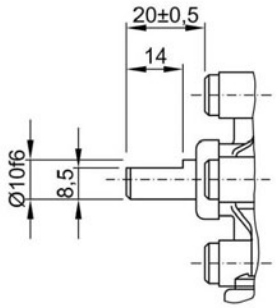
Remarks:

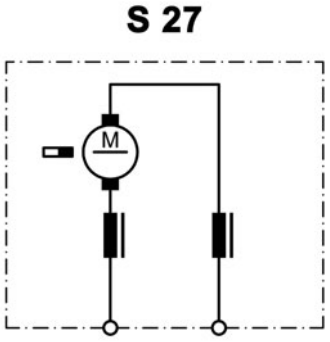
Motor picture

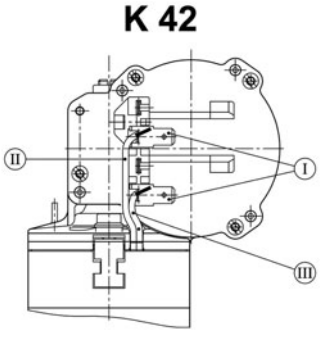
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



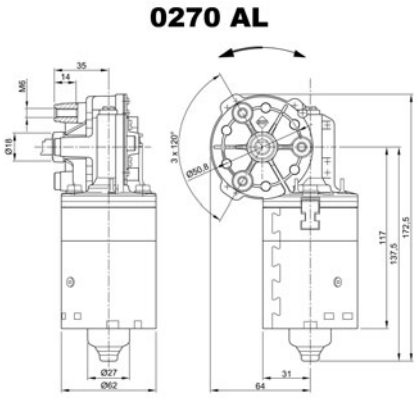




I Blade terminal ends 6,3 x 0,8 DIN 46 244
II green
III red

Series SWMK
Motor type 403 438

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve



Performance data		
Rated voltage [V]	U_N	36
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	100.0
Nominal power [W]	P_N	18.3
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

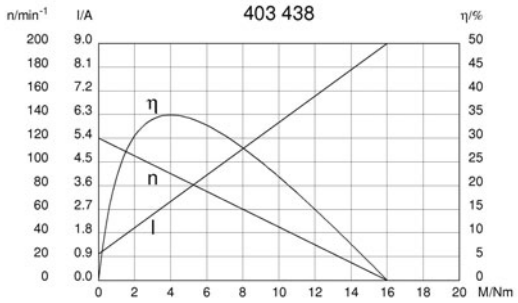
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	53/2
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP30
Weight [kg]	1.200

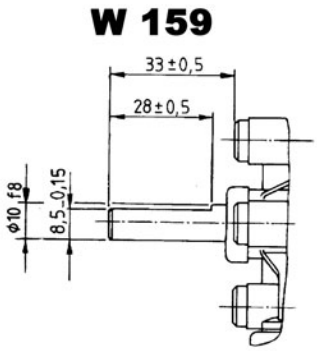
Remarks:

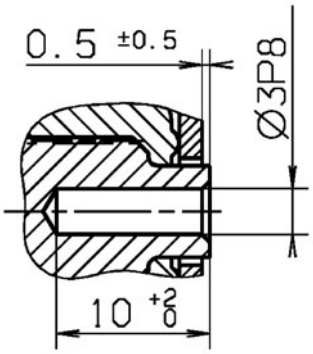
Motor picture

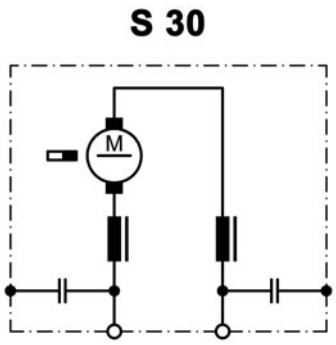
Characteristic curves



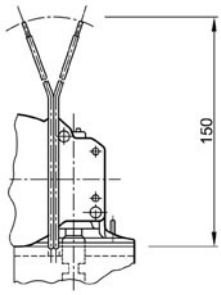
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







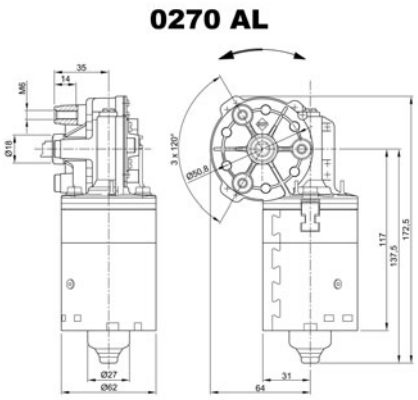
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



Notes

Series SWMK
Motor type 403 474

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	0.80
No-load speed [min^{-1}]	n_0	350.0
Nominal power [W]	P_N	27.0
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

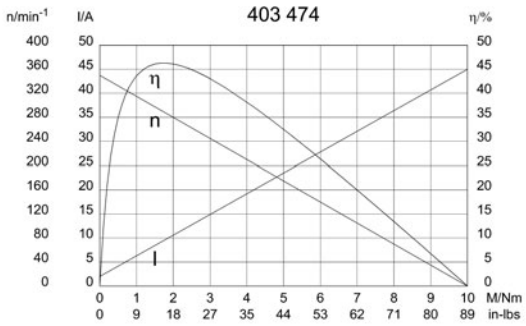
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	41/4
Gear wheel material	plastic
Suppression components	""
Enclosure class	IP 30
Weight [kg]	1.200

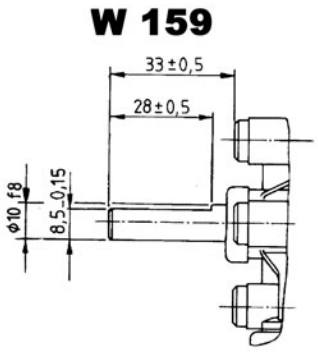
Remarks:

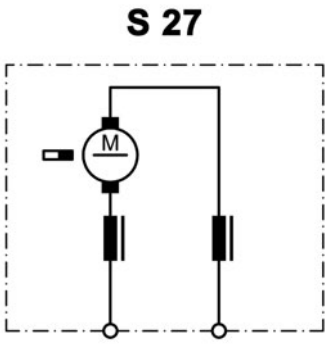
Motor picture

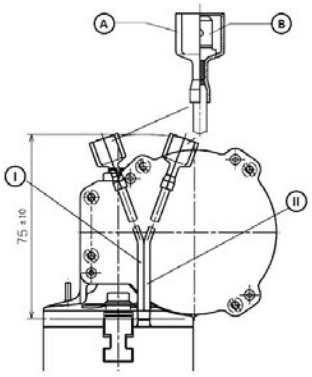
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





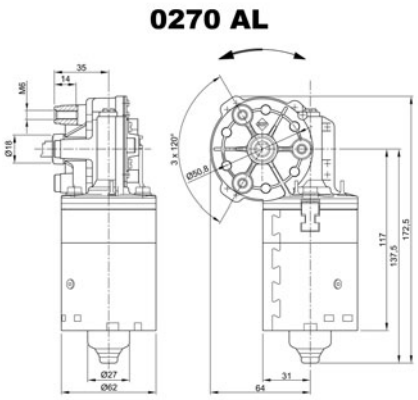


A: housing MST AMP No. 2-521055-2

B: spade terminals 6.3 x 0.8 DIN 46 244
I: red
II: green

Series SWMK
Motor type 403 475

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	0.80
No-load speed [min^{-1}]	n_0	350.0
Nominal power [W]	P_N	27.0
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

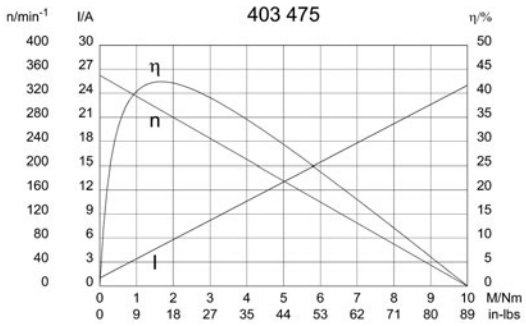
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	41/4
Gear wheel material	plastic
Suppression components	1nF
Enclosure class	IP 30
Weight [kg]	1.200

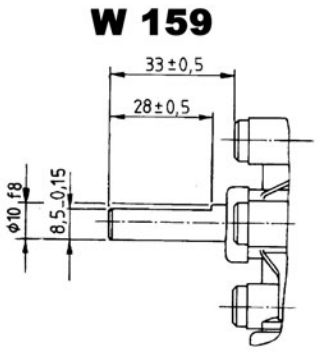
Remarks:

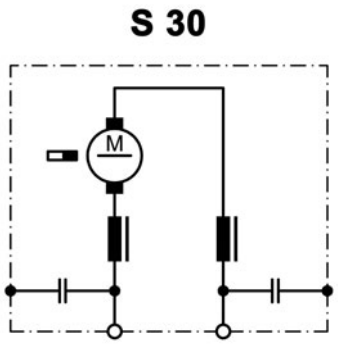
Motor picture

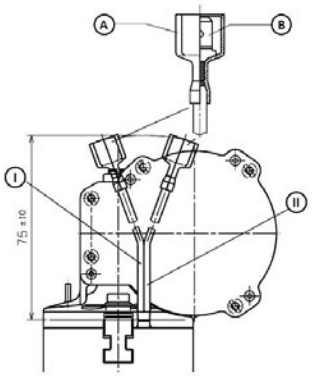
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





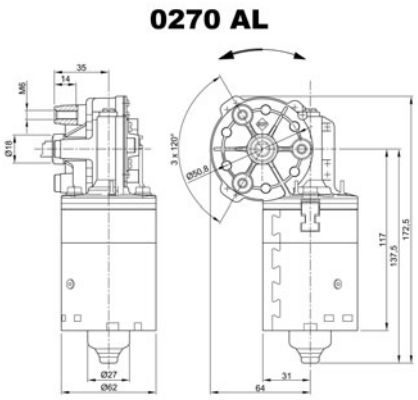


A: housing MST AMP No. 2-521055-2

B: spade terminals 6.3 x 0.8 DIN 46 244
I: red
II: green

Series SWMK
Motor type 403 559

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	110.0
Nominal power [W]	P_N	20.8
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

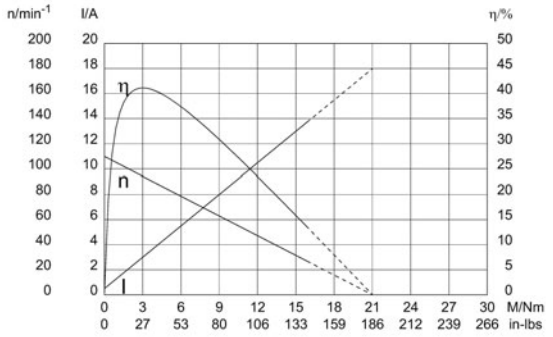
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	53/2
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP30
Weight [kg]	1.200

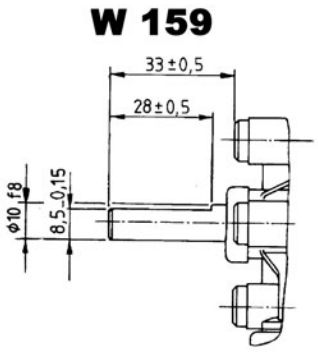
Remarks:

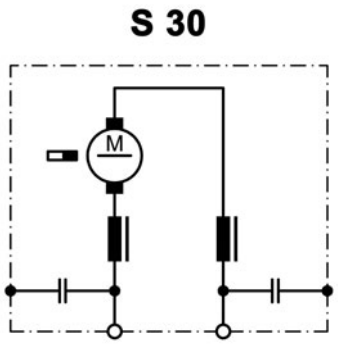
Motor picture

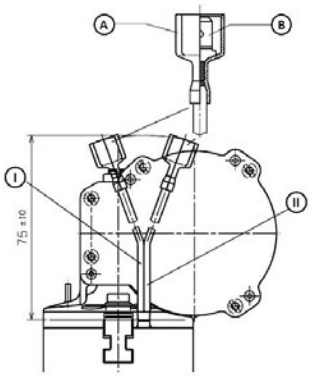
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





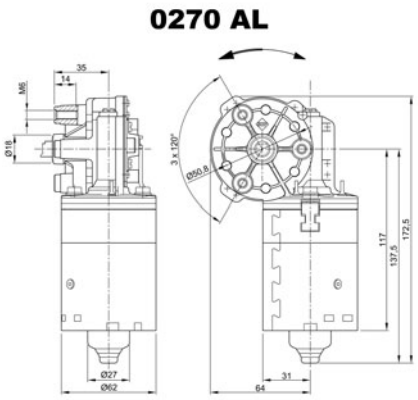


A: housing MST AMP No. 2-521055-2

B: spade terminals 6.3 x 0.8 DIN 46 244
I: red
II: green

Series SWMK
Motor type 403 567

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	260.0
Nominal power [W]	P_N	23.0
Nominal current [A]	I_N	10.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

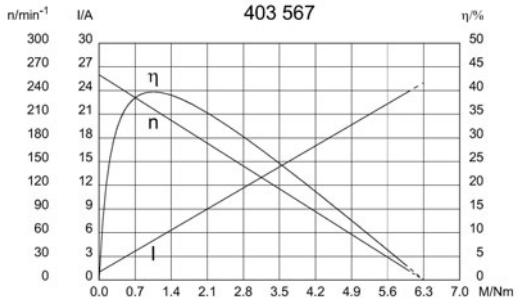
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	41/4
Gear wheel material	Plastic
Suppression components	
Enclosure class	
Weight [kg]	1.200

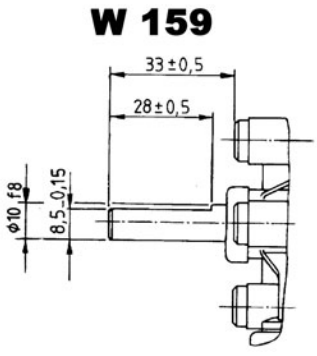
Remarks:

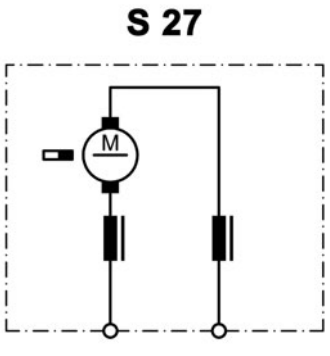
Motor picture

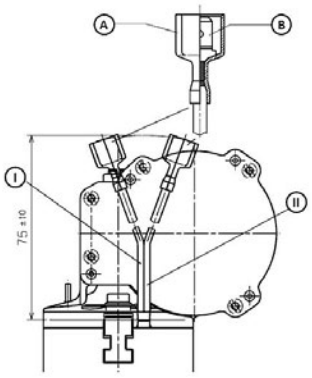
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





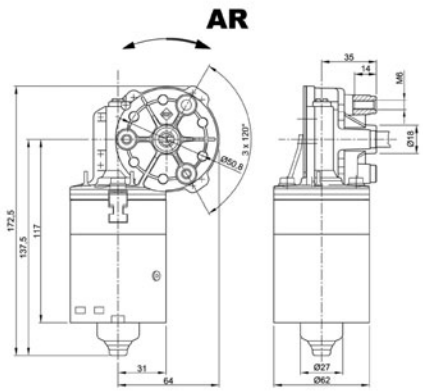


A: housing MST AMP No. 2-521055-2

B: spade terminals 6.3 x 0.8 DIN 46 244
I: red
II: green

Series SWMK
Motor type 403 790

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.50
No-load speed [min^{-1}]	n_0	21.0
Nominal power [W]	P_N	4.87
Nominal current [A]	I_N	1.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

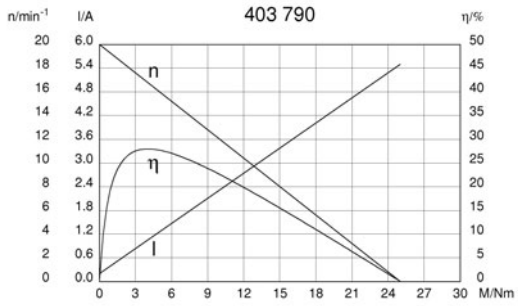
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	69/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1µF
Enclosure class	IP30
Weight [kg]	1.200

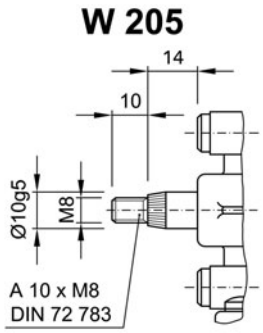
Remarks:

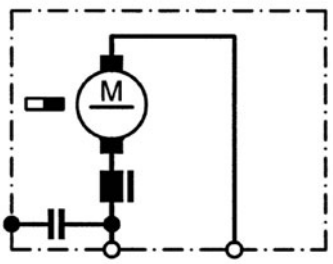
Motor picture

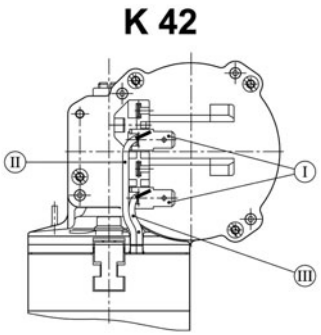
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



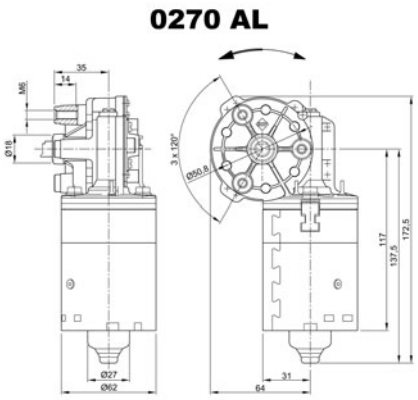




I Blade terminal ends 6,3 x 0,8 DIN 46 244
II green
III red

Series SWMK
Motor type 404 203

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	1.00
No-load speed [min^{-1}]	n_0	264.0
Nominal power [W]	P_N	23.2
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

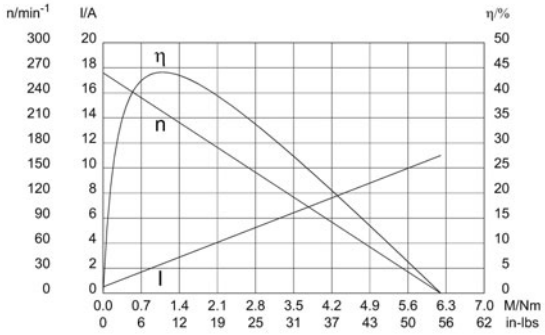
Sensor data	
Pulses	10.25
Output channels	1

Other data	
Gear ratio	41/4
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP30
Weight [kg]	1.200

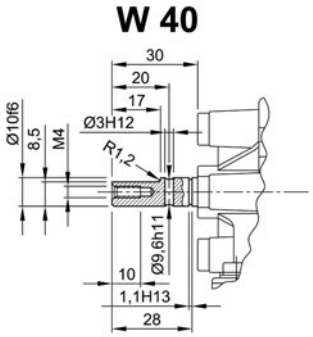
Remarks:

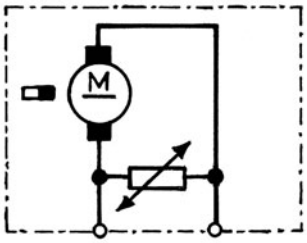
Motor picture

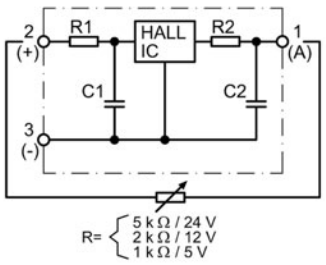
Characteristic curves



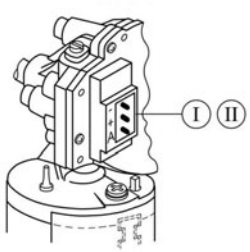
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





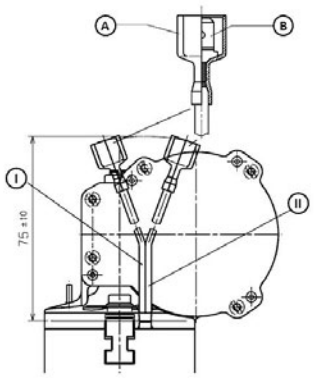


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



I Panduit MLSS 100-03

II Gegenstecker: Panduit CE 100 F22-03



A: housing MST AMP No. 2-521055-2

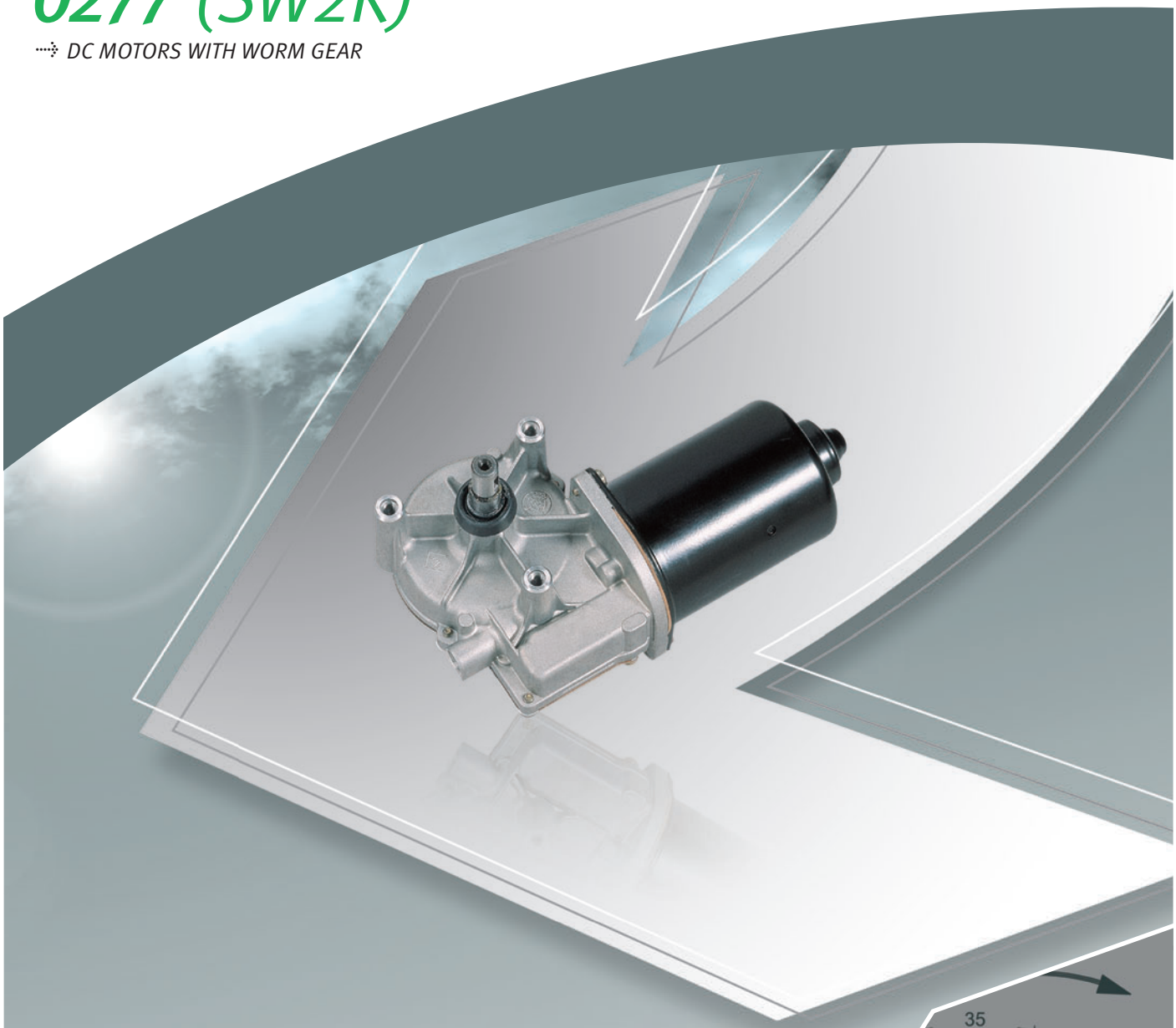
B: spade terminals 6.3 x 0.8 DIN 46 244
I: red
II: green

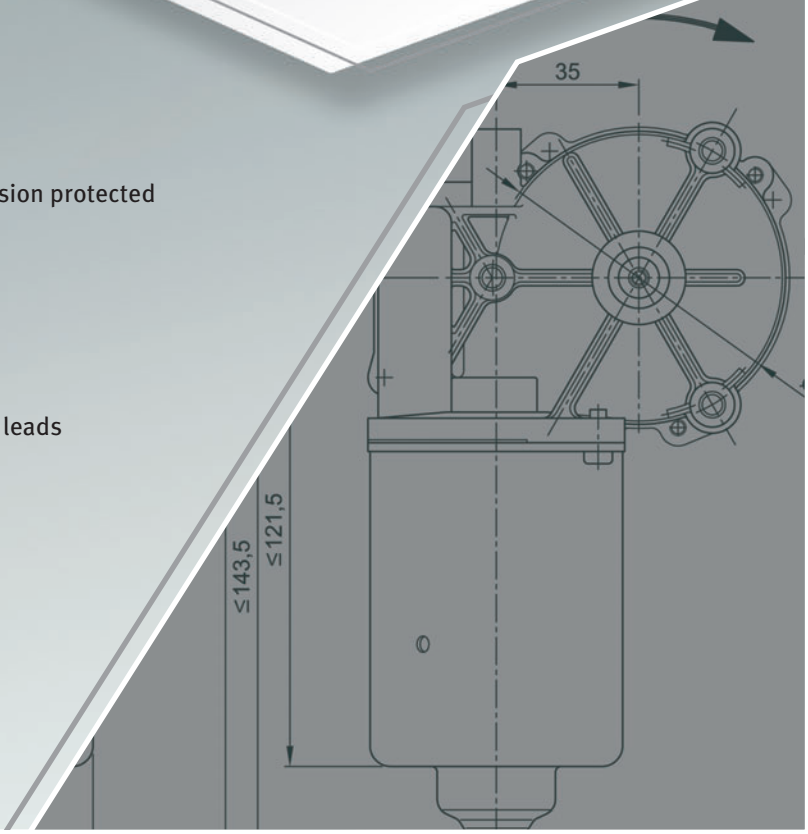
Notes

NIDEC MOTORS & ACTUATORS ···› MOTOR SERIES

0277 (SW2K)

···› DC MOTORS WITH WORM GEAR





···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	aluminium die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector or tinned leads
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

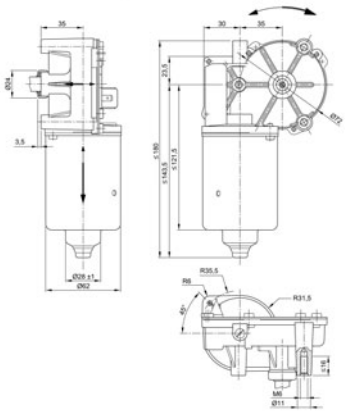
···› APPLICATION

Industry, Linear drives, General machinery, Vending machines, Agricultural technology, Office machines, Laboratory devices, Medical technology, Traffic & communications technology, Film/optics

Series SW2K
Motor type 403 854

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	40.0
Nominal power [W]	P_N	16.8
Nominal current [A]	I_N	3.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

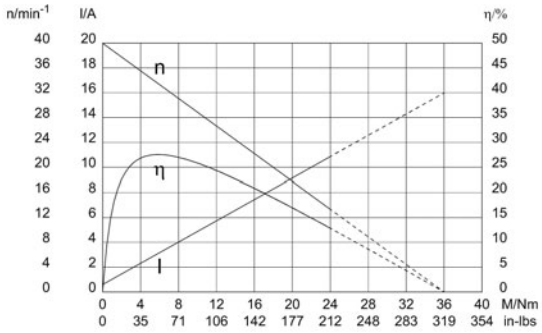
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	78/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP40
Weight [kg]	1.200

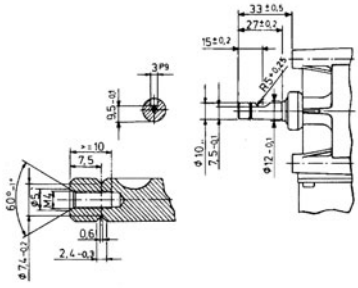
Remarks: Ball bearing

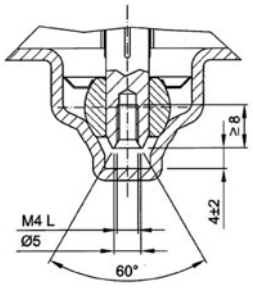
Motor picture

Characteristic curves

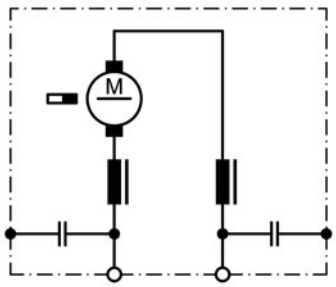


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)





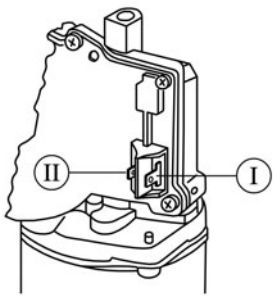
S 30



! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144



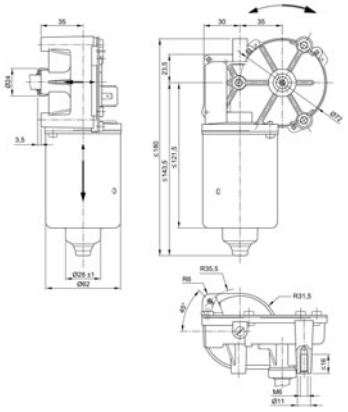
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 930

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	230.0
Nominal power [W]	P_N	44.2
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

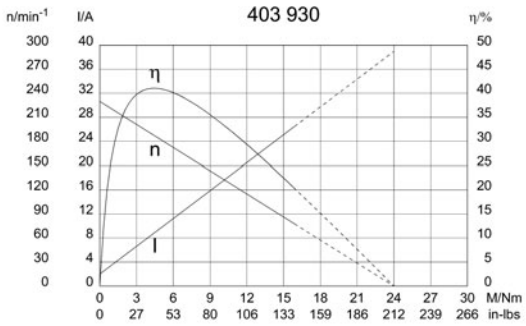
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	70/4
Gear wheel material	plastic
Suppression components	""
Enclosure class	IP 40
Weight [kg]	1.200

Remarks: Ball bearing

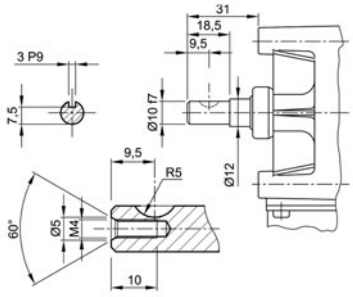
Motor picture

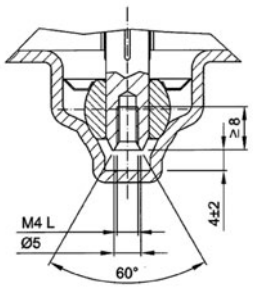
Characteristic curves



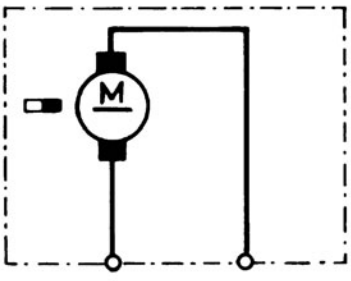
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 191





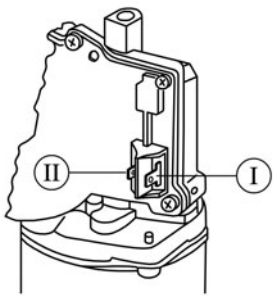
S 28



! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144

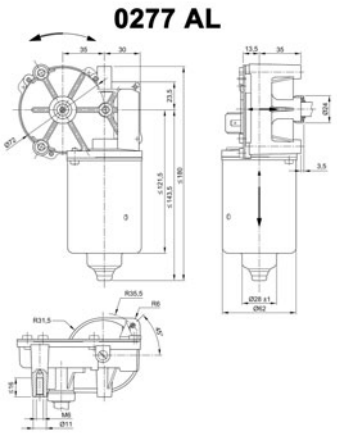


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 931

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	126.0
Nominal power [W]	P_N	23.0
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

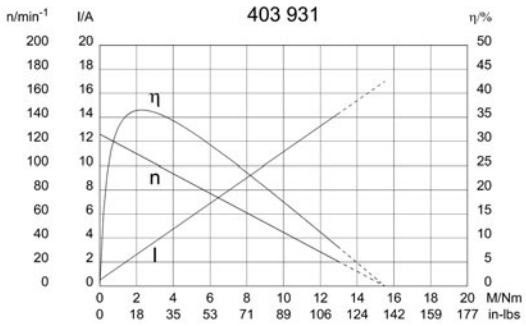
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	70/4
Gear wheel material	plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP 40
Weight [kg]	1.200

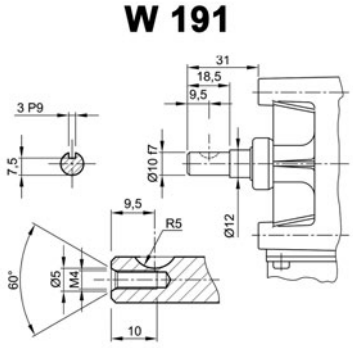
Remarks: Ball bearing

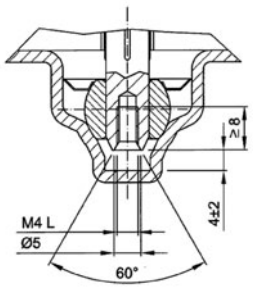
Motor picture

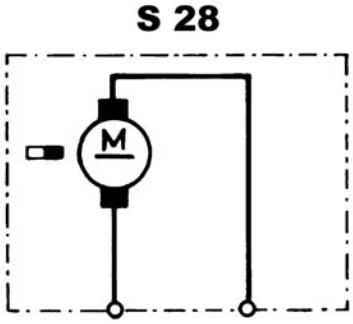
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



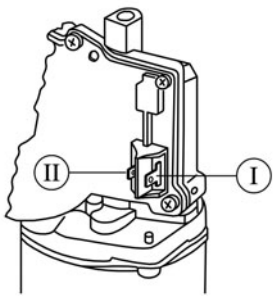




! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144



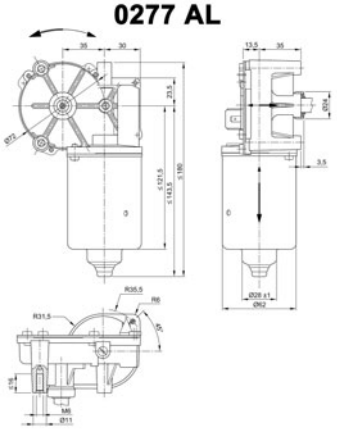
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 933

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	2.00
No-load speed [min^{-1}]	n_0	230.0
Nominal power [W]	P_N	44.2
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

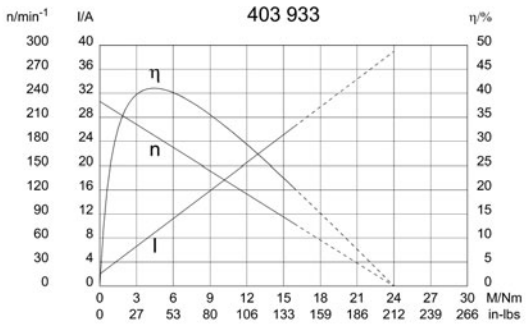
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	70/4
Gear wheel material	plastic
Suppression components	""
Enclosure class	IP 40
Weight [kg]	1.200

Remarks: Ball bearing

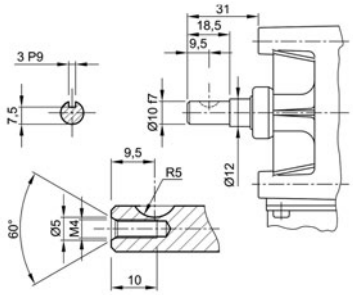
Motor picture

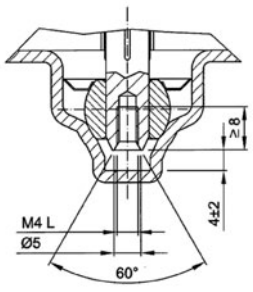
Characteristic curves



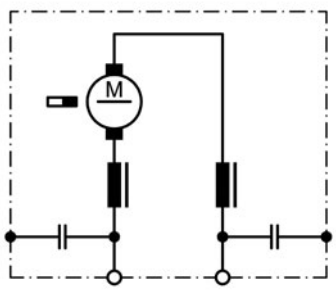
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 191





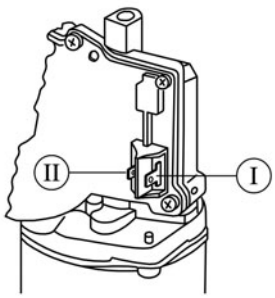
S 30



! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144



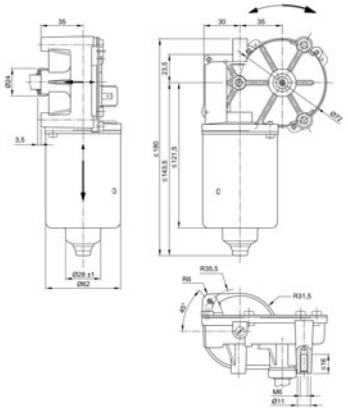
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 936

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 AR



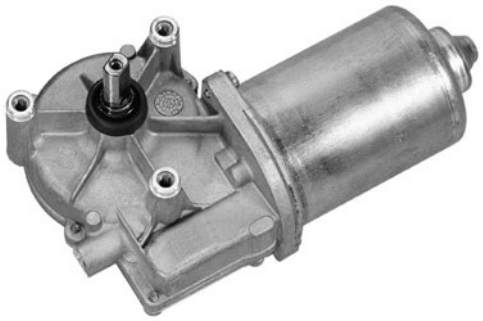
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	54.0
Nominal power [W]	P_N	26.3
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

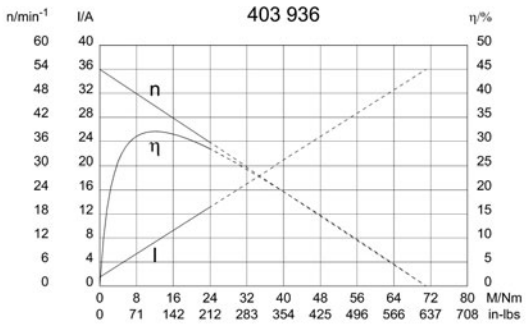
Other data	
Gear ratio	78/1
Gear wheel material	plastic
Suppression components	5µH, 1nF
Enclosure class	IP 40
Weight [kg]	1.200

Remarks:

Motor picture

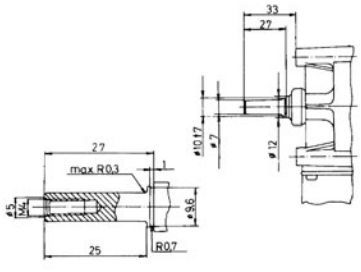


Characteristic curves

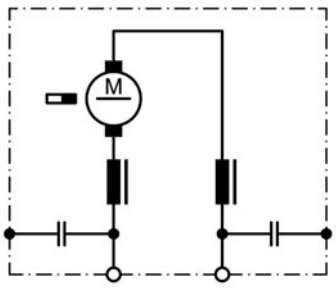


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

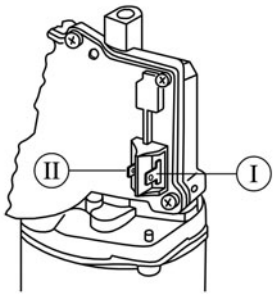
W 194



S 30



K 144

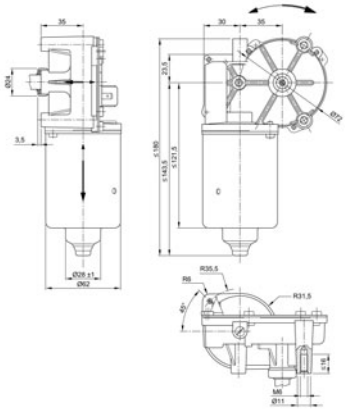


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Series SW2K
Motor type 403 939

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0277 AR



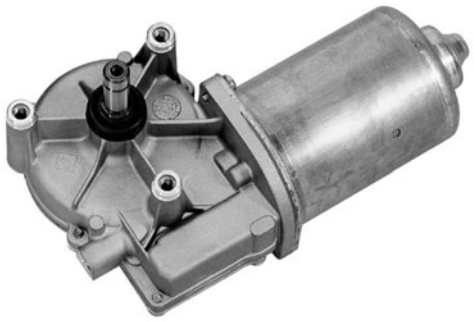
Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	40.0
Nominal power [W]	P_N	16.8
Nominal current [A]	I_N	3.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

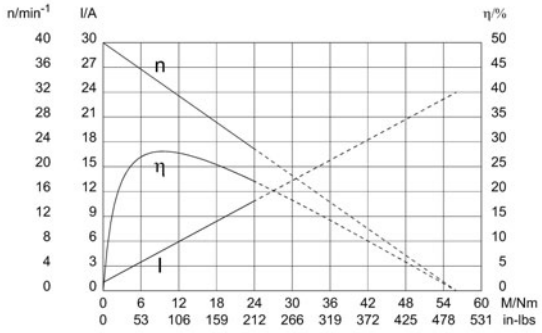
Other data	
Gear ratio	78/1
Gear wheel material	Plastic
Suppression components	
Enclosure class	IP40
Weight [kg]	1.200

Remarks:

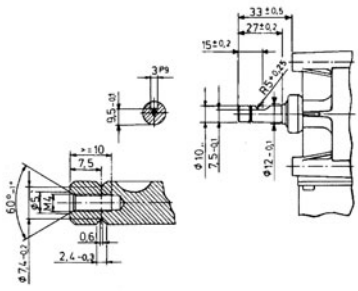
Motor picture

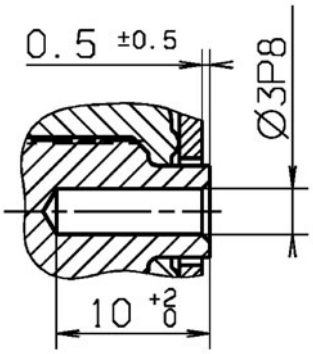


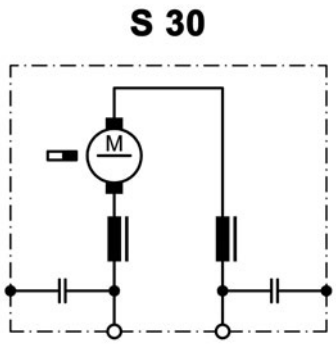
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

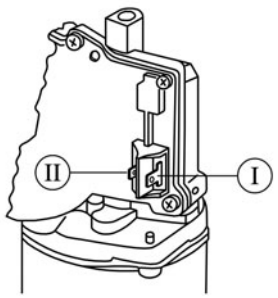






Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144

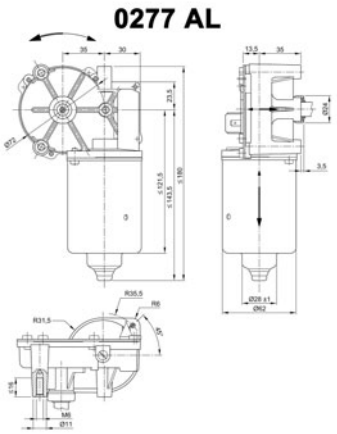


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 957

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	65.0
Nominal power [W]	P_N	27.2
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

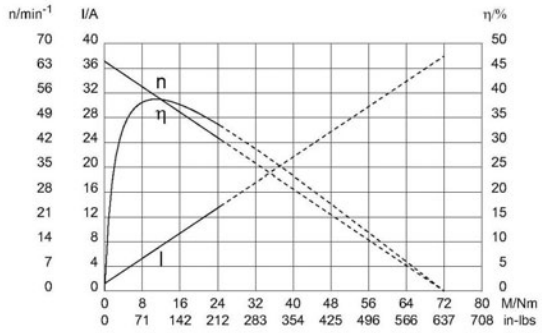
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	63/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP40
Weight [kg]	1.200

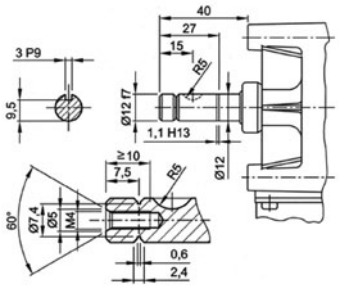
Remarks: Ball bearing

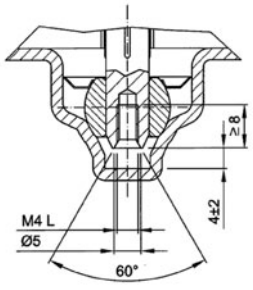
Motor picture

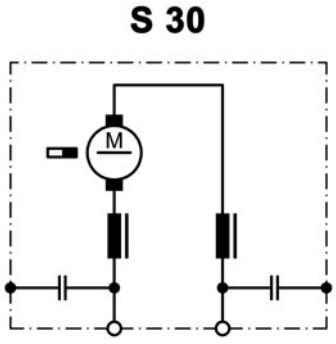
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



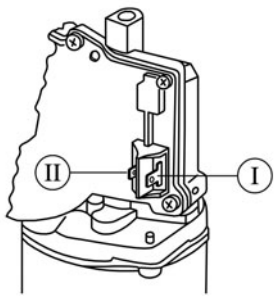




! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144



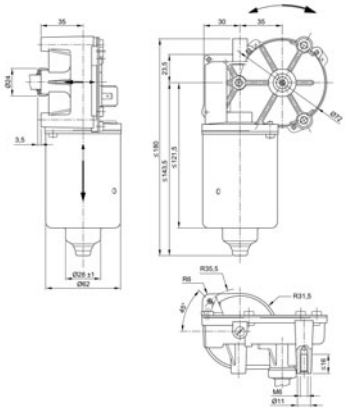
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 403 958

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	65.0
Nominal power [W]	P_N	27.2
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

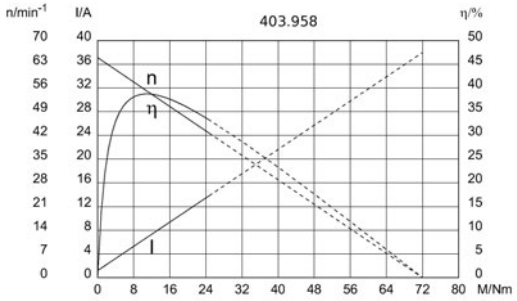
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	63/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1nF
Enclosure class	IP40
Weight [kg]	1.200

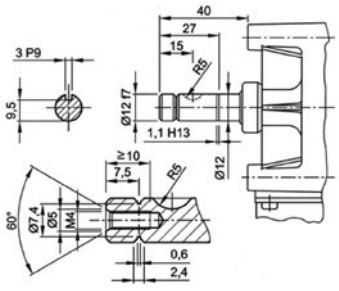
Remarks: Ball bearing

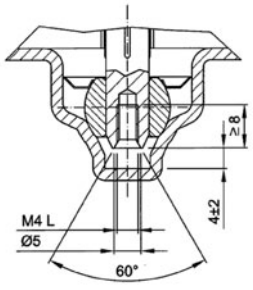
Motor picture

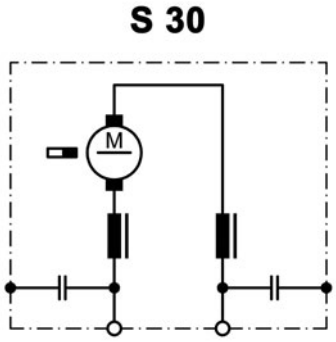
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



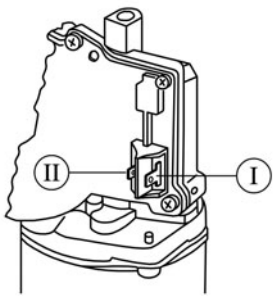




! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

K 144



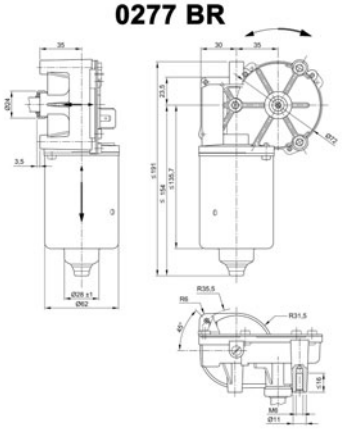
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2K
Motor type 404 925

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	

0277 BR



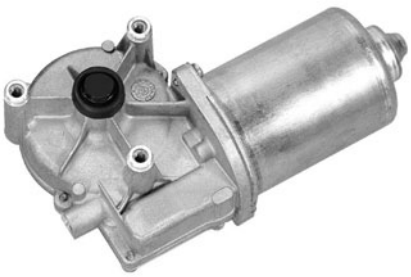
Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	270.0
Nominal power [W]	P_N	68.9
Nominal current [A]	I_N	15.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

Sensor data	
Pulses	0
Output channels	0

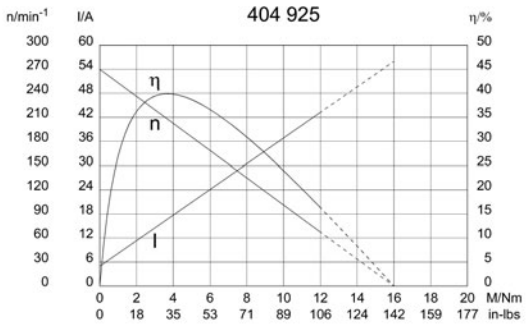
Other data	
Gear ratio	70/4
Gear wheel material	plastic
Suppression components	1.9µH, 1µF
Enclosure class	IP 40
Weight [kg]	1.200

Remarks: Ball bearing

Motor picture

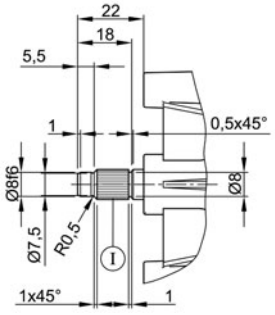


Characteristic curves

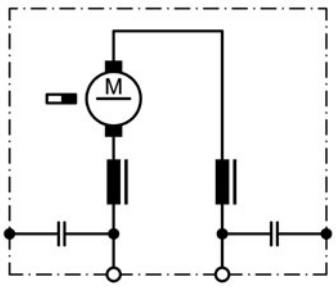


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

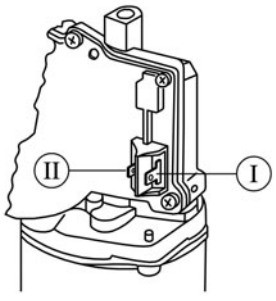
W 317



S 30



K 144



I Tapered splines 8 x 10 f (similar DIN 5481)

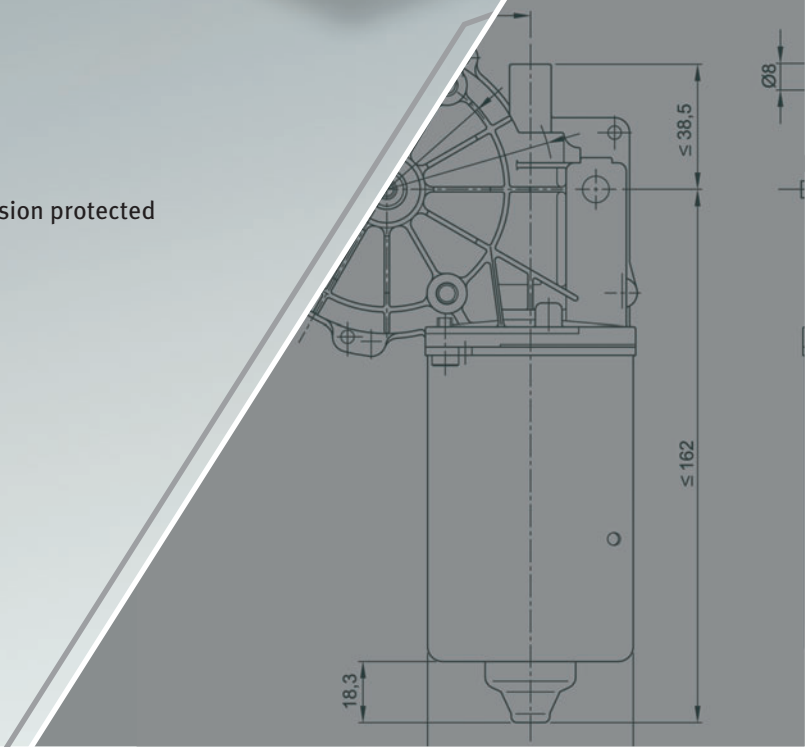
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

NIDEC MOTORS & ACTUATORS ···› MOTOR SERIES

0278 (SW2L)

···› DC MOTORS WITH WORM GEAR



···› TECHNICAL DESCRIPTION

Motorhousing:	deep drawn & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	aluminium die cast
Gear wheel material:	plastic
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

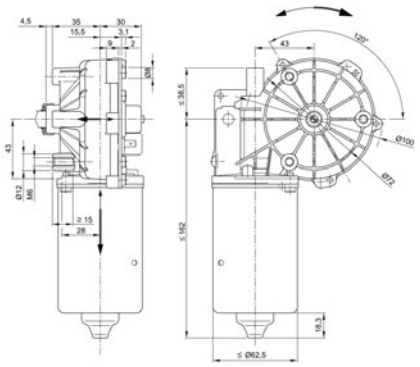
···› INDUSTRIAL APPLICATION

Gate Opener, Patient Hoist,
Machine construction

Series SW2L
Motor type 404 148

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0278 AR



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	48.0
Nominal power [W]	P_N	27.9
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

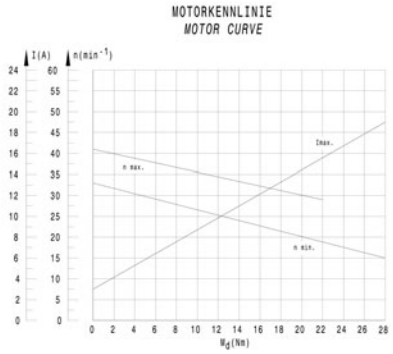
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	74/1
Gear wheel material	plastic
Suppression components	4,7µH, 1µF
Enclosure class	IP40
Weight [kg]	1.716

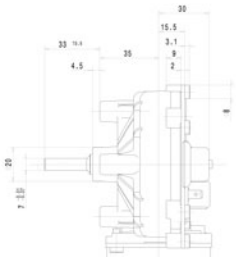
Remarks:

Motor picture

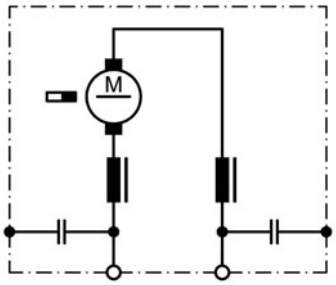
Characteristic curves



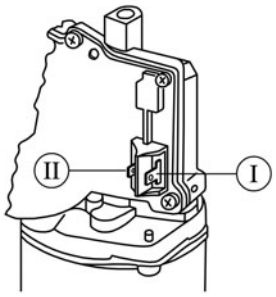
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 30



K 144

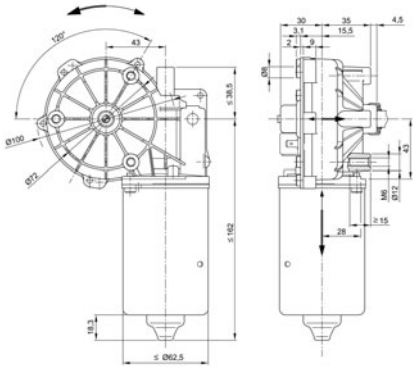


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Series SW2L
Motor type 404 360

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0278 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	48.0
Nominal power [W]	P_N	36.3
Nominal current [A]	I_N	5.5
Nominal force [kN]	F_N	0.00
Duty cycle		s1

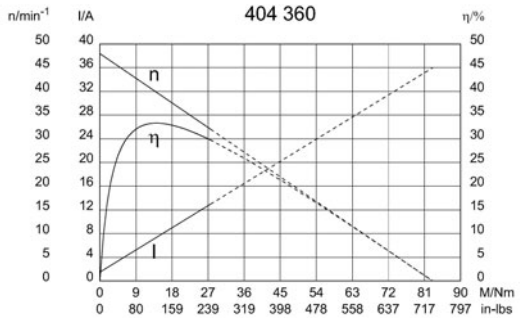
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	74/1
Gear wheel material	Plastic
Suppression components	4.7µH, 1µF
Enclosure class	IP40
Weight [kg]	1.700

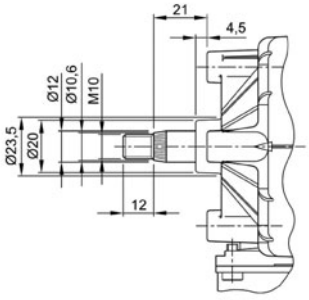
Remarks:

Motor picture

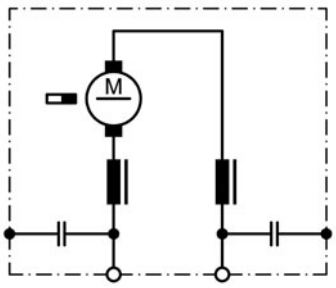
Characteristic curves



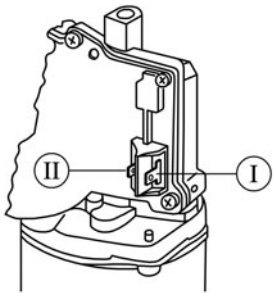
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 30



K 144

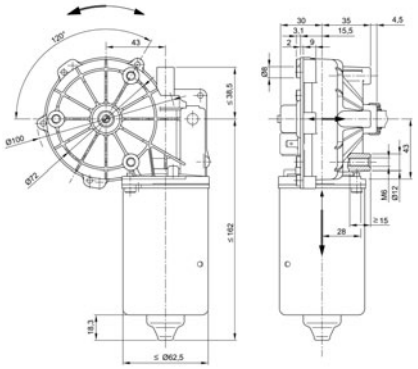


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Series SW2L
Motor type 404 385

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0278 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	190.0
Nominal power [W]	P_N	73.1
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

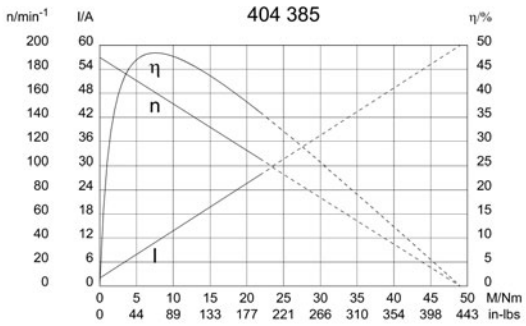
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	103/4
Gear wheel material	plastic
Suppression components	4,7µH, 1nF
Enclosure class	IP 40
Weight [kg]	1.700

Remarks:

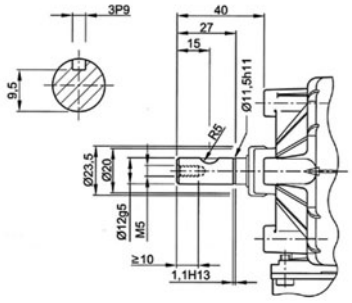
Motor picture

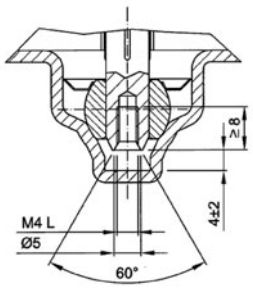
Characteristic curves



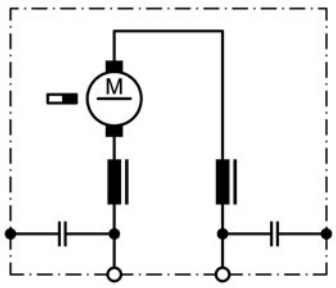
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

W 231



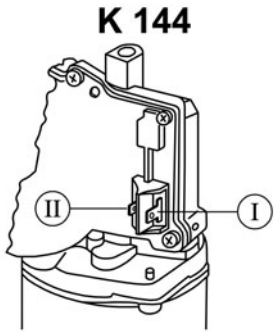


S 30



! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

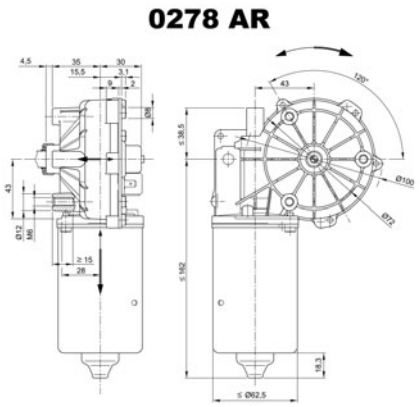


I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2L
Motor type 404 386

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	4.00
No-load speed [min^{-1}]	n_0	190.0
Nominal power [W]	P_N	73.1
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

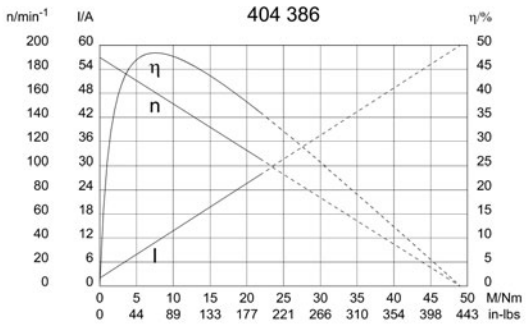
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	103/4
Gear wheel material	plastic
Suppression components	4,7µH, 1nF
Enclosure class	IP 40
Weight [kg]	1.700

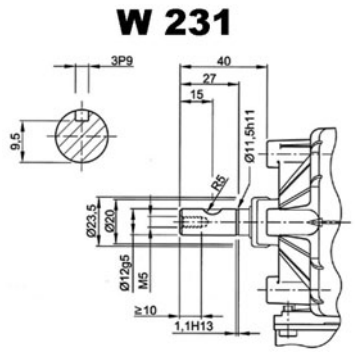
Remarks:

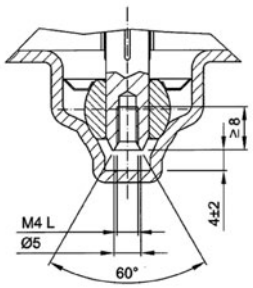
Motor picture

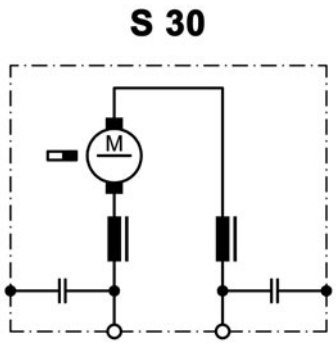
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

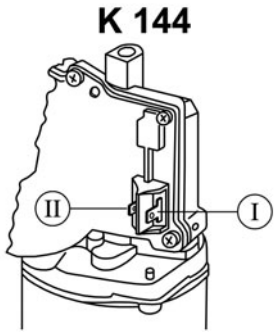






! Lefthand thread

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



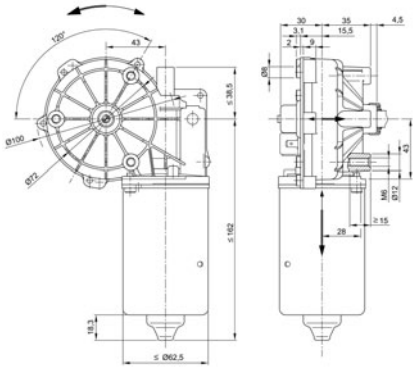
I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

Notes

Series SW2L
Motor type 404 642

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0278 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	48.0
Nominal power [W]	P_N	21.9
Nominal current [A]	I_N	4.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

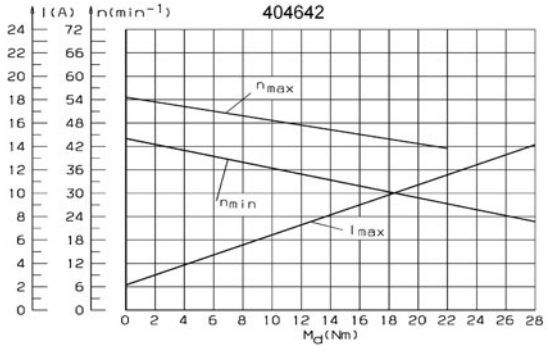
Sensor data	
Pulses	74
Output channels	1

Other data	
Gear ratio	74/1
Gear wheel material	plastic
Suppression components	4,7µH, 1nF
Enclosure class	IP40
Weight [kg]	1.730

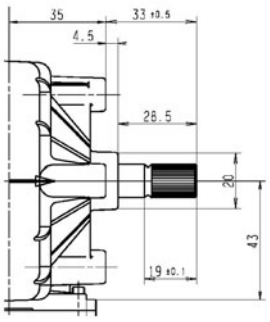
Remarks:

Motor picture

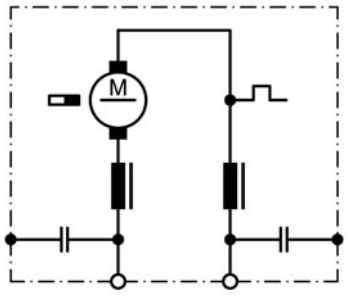
Characteristic curves



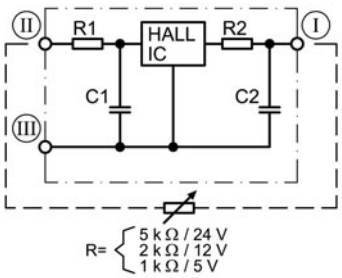
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



S 74



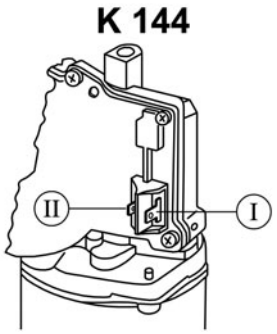
S 124



Splines: 10 x 12f (according to DIN 5481)

I Terminal 3, A
II Terminal 4, +
III Terminal 5, -

Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



I Blade terminal ends 6,3 x 0,8 DIN 46 244
II Blade terminal ends 4,8 x 0,8 DIN 46 244

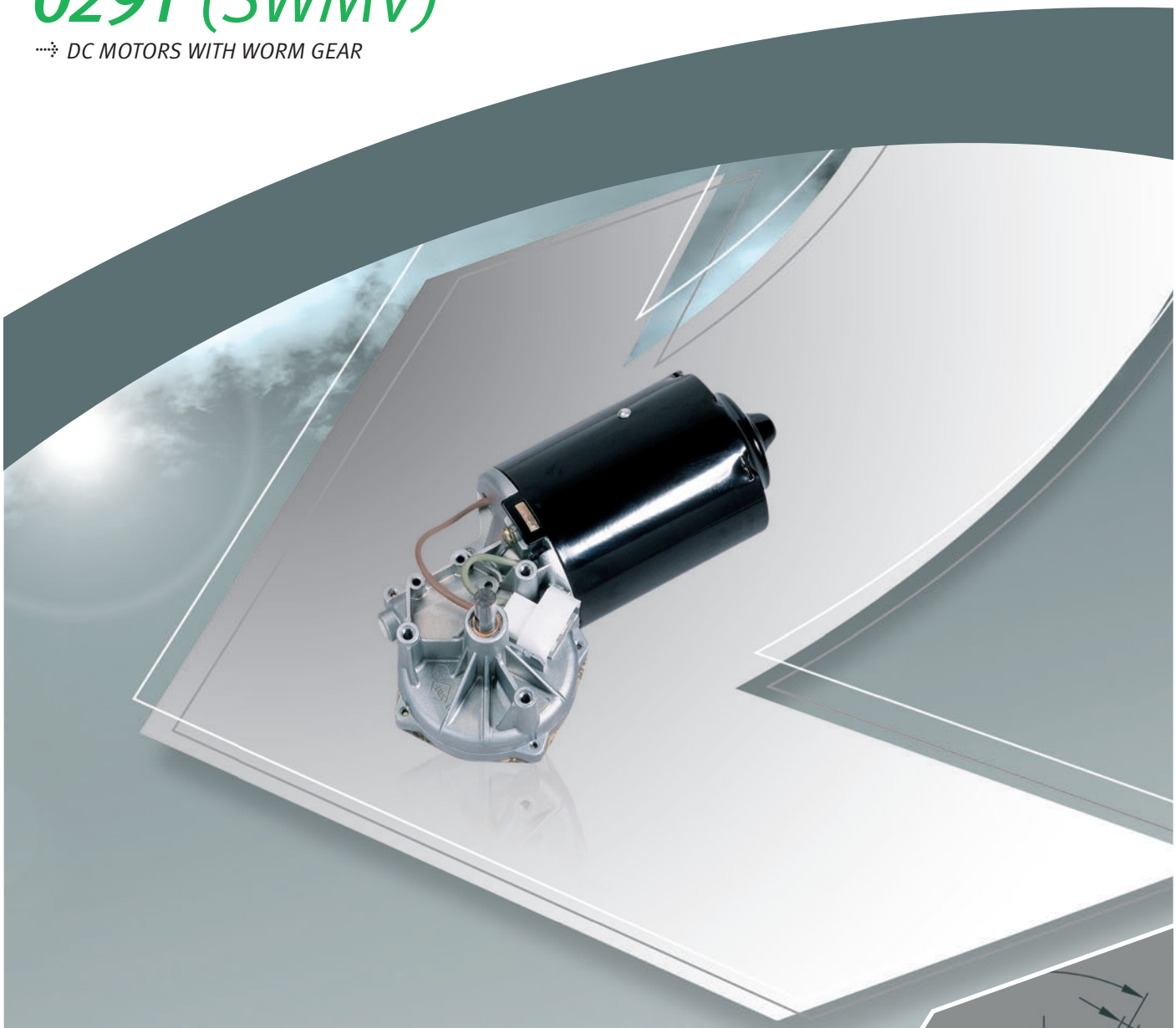
Notes

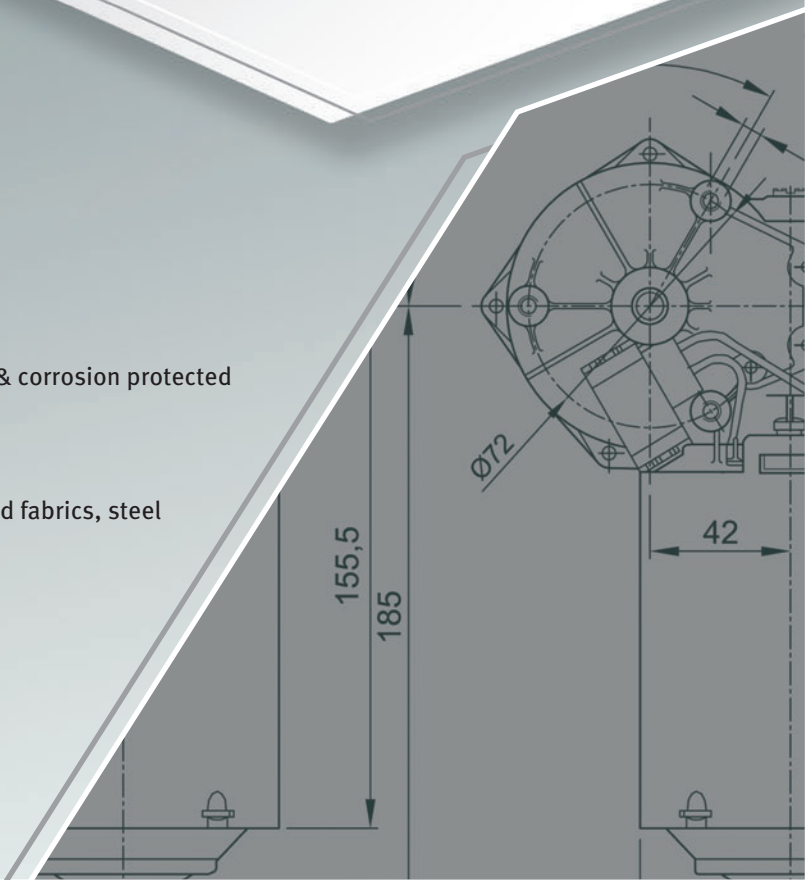
Notes

NIDEC MOTORS & ACTUATORS ···› MOTOR SERIES

0291 (SWMV)

···› DC MOTORS WITH WORM GEAR





···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic, resin bonded fabrics, steel
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	connector or leads
Sensor:	–
Thermal protection:	–
EMC suppression:	optional

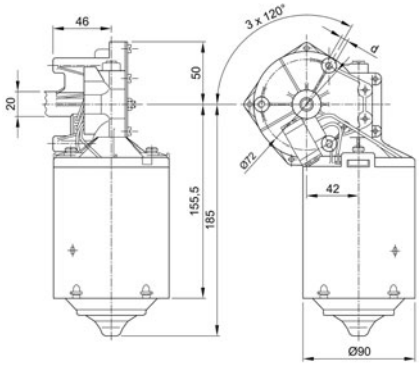
···› INDUSTRIAL APPLICATION

Machine construction

Series SWMV
Motor type 402 523

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	67.0
Nominal power [W]	P_N	38.5
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

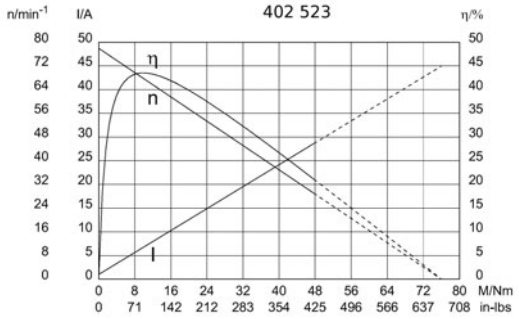
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	46/1
Gear wheel material	Bronze
Suppression components	
Enclosure class	IP20
Weight [kg]	2.900

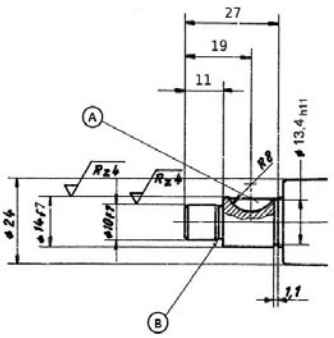
Remarks:

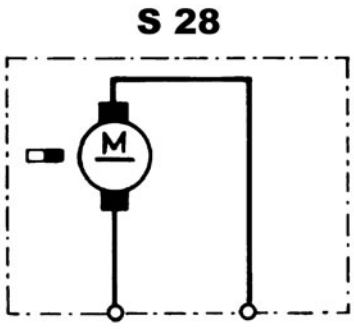
Motor picture

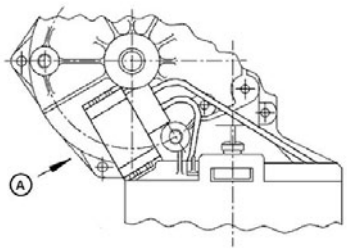
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







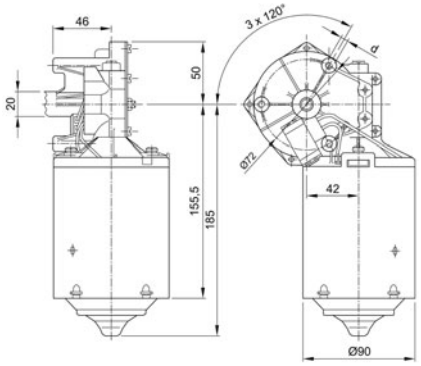
A: keyway 5 - P9 width tolerance
B: undercut E 0.6 x 0.2 to DIN 509

A: spade ends 6.3 x 0.8 (according to DIN 46 244)

Series SWMV
Motor type 402 525

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	78.0
Nominal power [W]	P_N	58.5
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

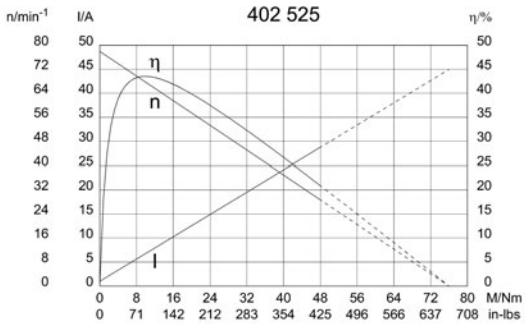
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	46/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	IP 20
Weight [kg]	2.900

Remarks: d = M6x16mm

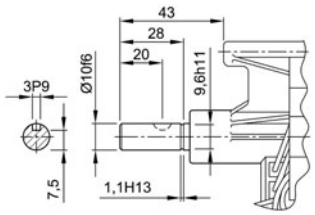
Motor picture

Characteristic curves

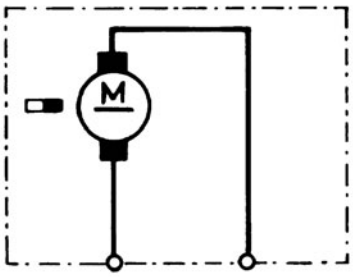


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

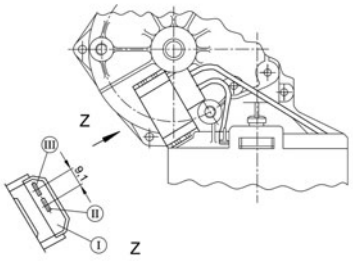
W 278



S 28



K 243

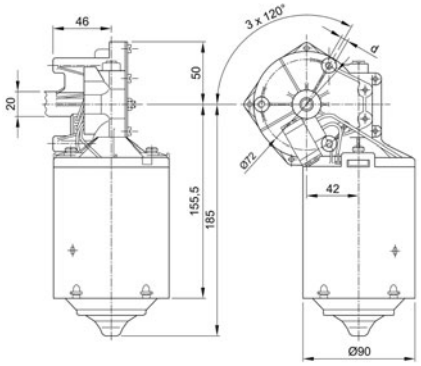


Flat plug 6,8x0,8 DIN 46244 mating with receptacle for tabs and connector housing 163 006-1, drwg C163006, www.tycoelctronics.com

Series SWMV
Motor type 402 826

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	12
Nominal torque [Nm]	M_N	6.00
No-load speed [min^{-1}]	n_0	52.0
Nominal power [W]	P_N	29.7
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

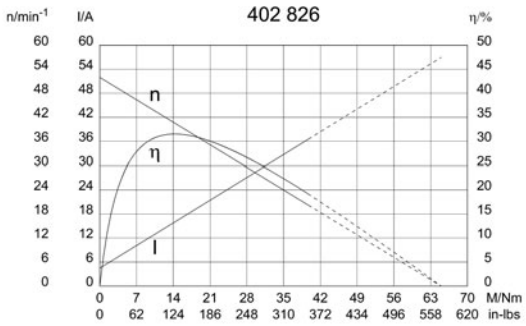
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	59/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	IP 20
Weight [kg]	2.900

Remarks: d = M6x16mm

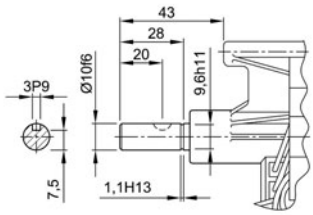
Motor picture

Characteristic curves

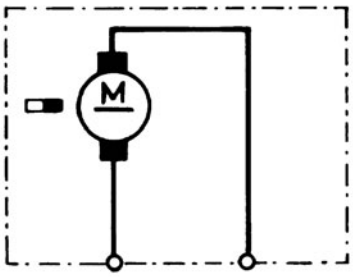


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

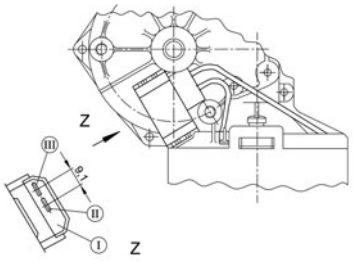
W 278



S 28



K 243

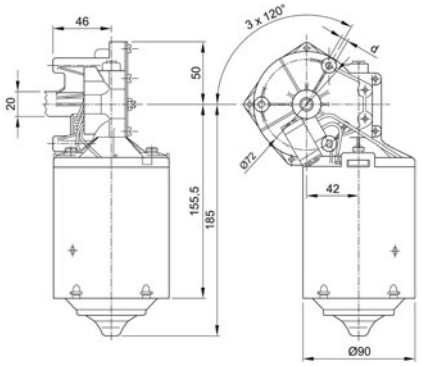


Flat plug 6,8x0,8 DIN 46244 mating with receptacle for tabs and connector housing 163 006-1, drwg C163006, www.tycoelctronics.com

Series SWMV
Motor type 403 179

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A: Ball - B: Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	47.0
Nominal power [W]	P_N	34.9
Nominal current [A]	I_N	11.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

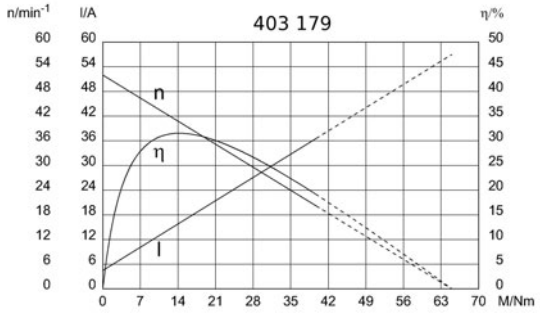
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	59/1
Gear wheel material	Bronze
Suppression components	5.0µH
Enclosure class	IP20
Weight [kg]	2.900

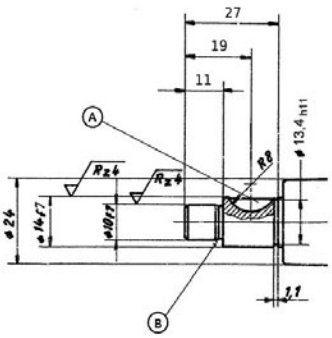
Remarks:

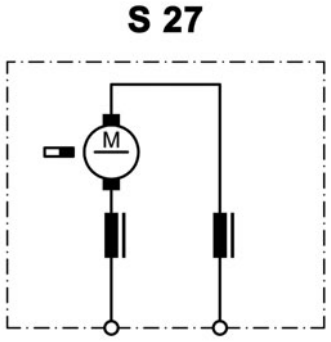
Motor picture

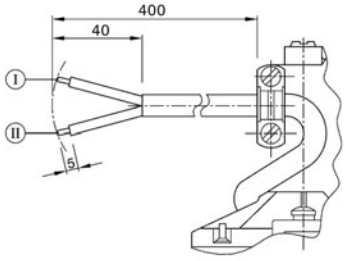
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)







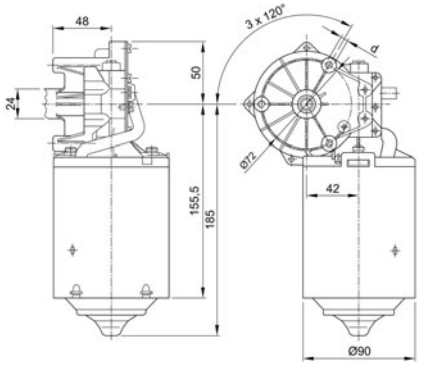
A: keyway 5 - P9 width tolerance
B: undercut E 0.6 x 0.2 to DIN 509

I: red
II: green

Series SWMV
Motor type 403 334

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0291 BL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	3.00
No-load speed [min^{-1}]	n_0	220.0
Nominal power [W]	P_N	65.7
Nominal current [A]	I_N	8.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

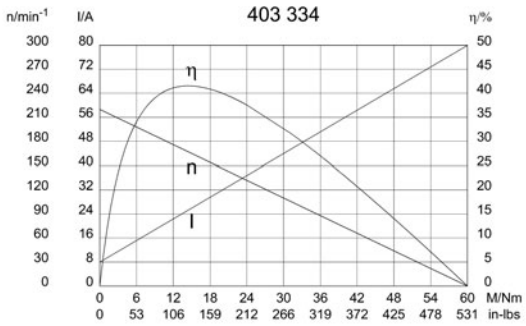
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	44/2
Gear wheel material	plastic
Suppression components	6,5µH, 1nF
Enclosure class	IP 20
Weight [kg]	2.900

Remarks: d = M8 x 16 mm

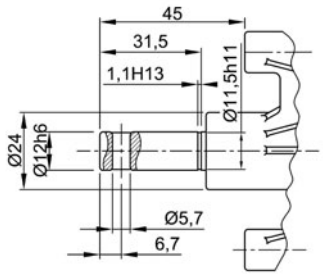
Motor picture

Characteristic curves

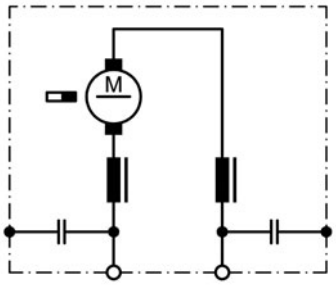


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

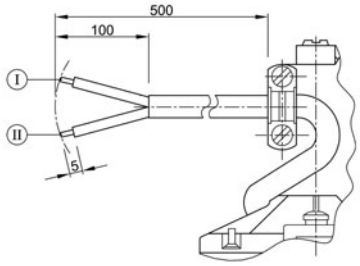
W 070



S 30



K 274

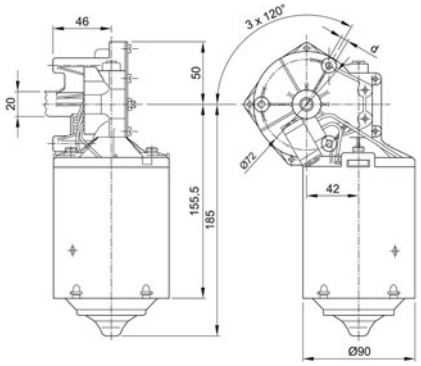


I red
II green

Series SWMV
Motor type 403 362

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	5.00
No-load speed [min^{-1}]	n_0	52.0
Nominal power [W]	P_N	25.7
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

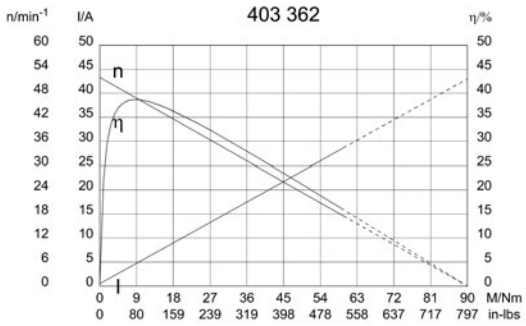
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	59/1
Gear wheel material	Resinbonded fabric
Suppression components	
Enclosure class	IP 20
Weight [kg]	2.900

Remarks: d = M8 x 23mm

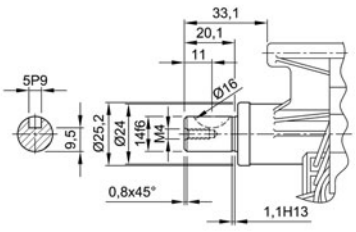
Motor picture

Characteristic curves

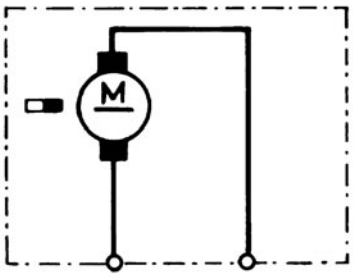


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

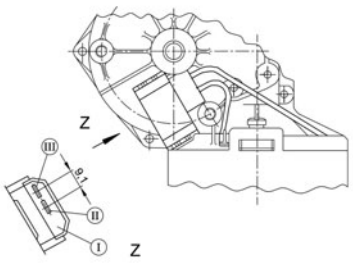
W 126



S 28



K 243

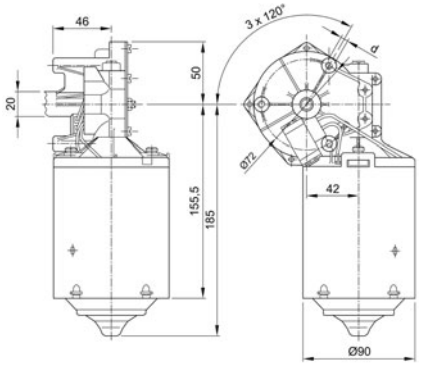


Flat plug 6,8x0,8 DIN 46244 mating with receptacle for tabs and connector housing 163 006-1, drwg C163006, www.tycoelctronics.com

Series SWMV
Motor type 403 383

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0291 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	8.00
No-load speed [min^{-1}]	n_0	48.0
Nominal power [W]	P_N	36.0
Nominal current [A]	I_N	7.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

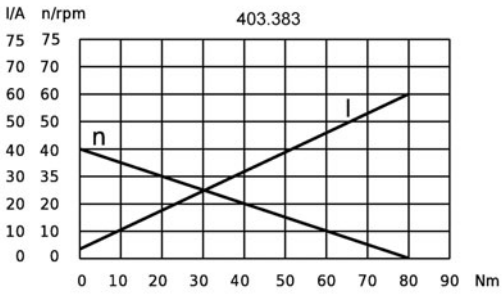
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	46/1
Gear wheel material	bronze
Suppression components	
Enclosure class	IP20
Weight [kg]	2.900

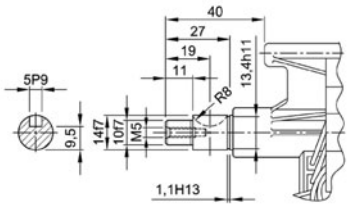
Remarks: d=M8x23

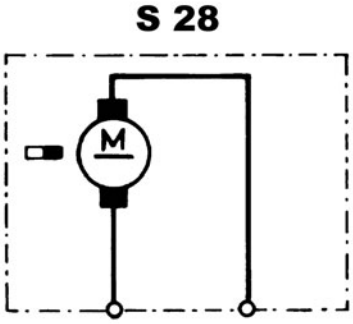
Motor picture

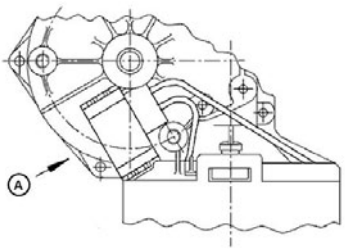
Characteristic curves



Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)



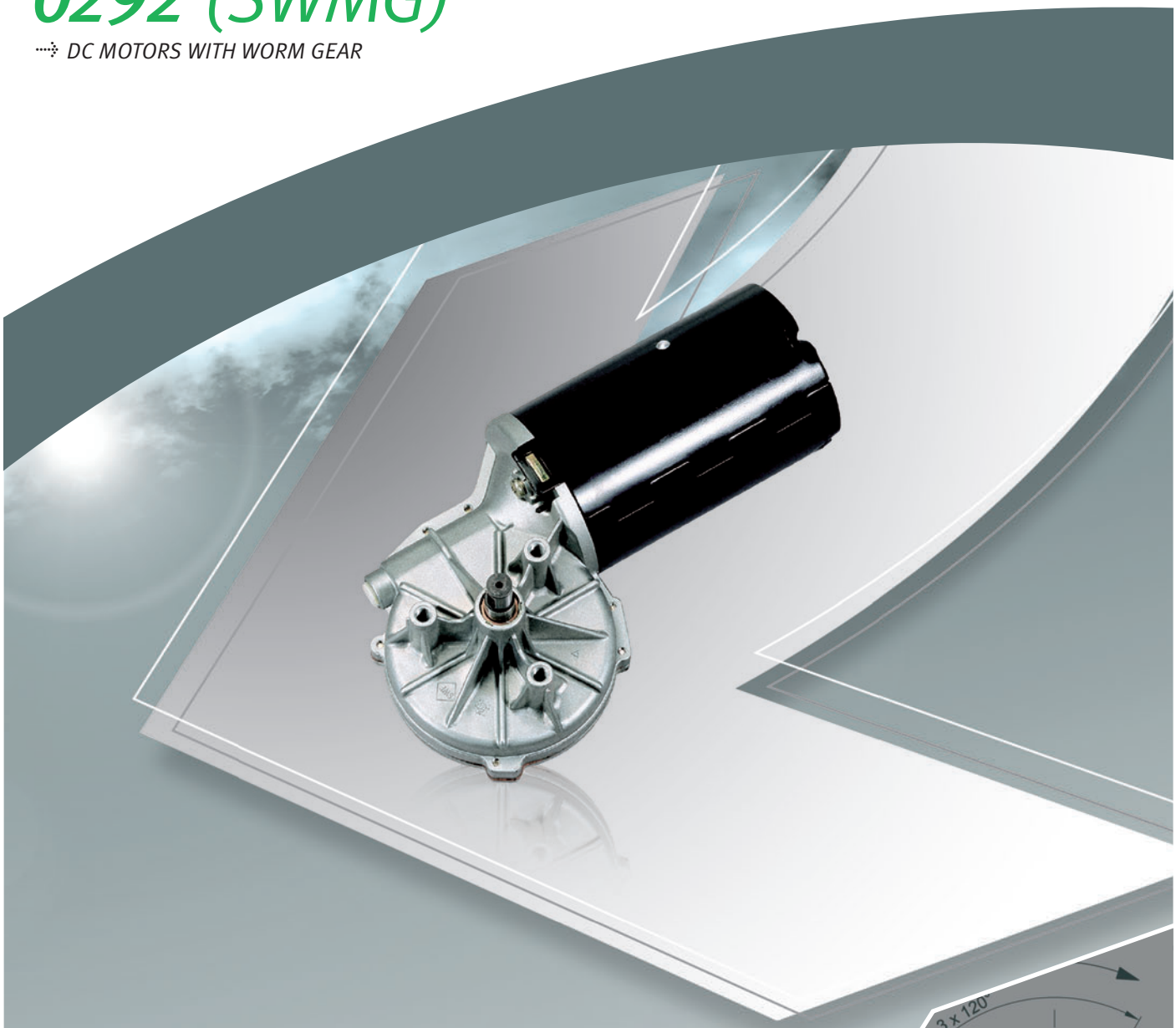




A: spade ends 6.3 x 0.8 (according to DIN 46 244)

0292 (SWMG)

···› DC MOTORS WITH WORM GEAR



···› TECHNICAL DESCRIPTION

Motorhousing:	sheet metal, rolled & corrosion protected
Excitation field:	permanent magnet
Type of gear mesh:	worm gear
Gear housing:	zinc die cast
Gear wheel material:	plastic, resin bonded fabrics, steel
Lubrication:	grease
Mechanical interface:	steel shaft
Electric interface:	leads with connector
Sensor:	optional
Thermal protection:	optional
EMC suppression:	optional

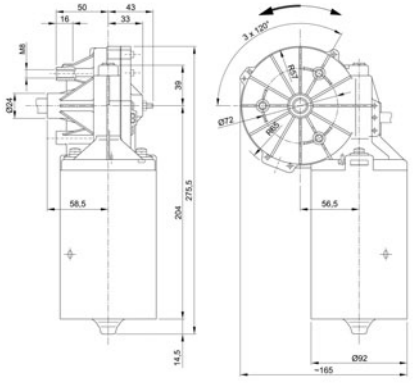
···› INDUSTRIAL APPLICATION

Machine construction

Series SWMG
Motor type 402 853

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Ball

0292 AL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	20.0
No-load speed [min^{-1}]	n_0	27.0
Nominal power [W]	P_N	44.0
Nominal current [A]	I_N	6.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

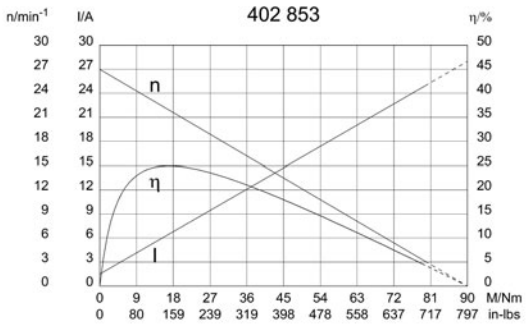
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	50/1
Gear wheel material	plastic
Suppression components	
Enclosure class	IP 20
Weight [kg]	4.200

Remarks:

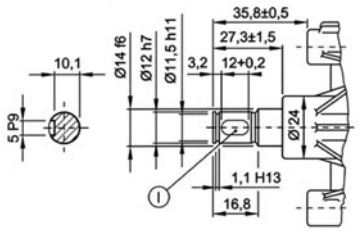
Motor picture

Characteristic curves

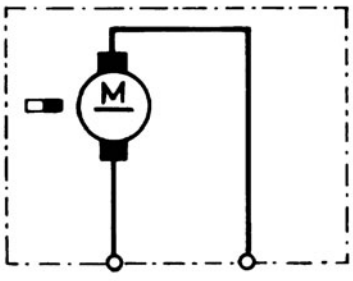


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

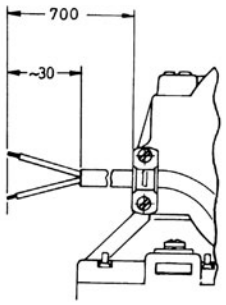
W 110



S 28



K 86

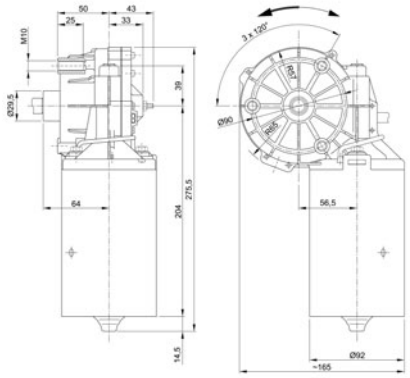


I Groove for feather key A 5x3x12 DIN 6885

Series SWMG
Motor type 403 460

Design Data	
Commutation	Brushed
Direction of rotation	Bi-directional
Bearing type	A:Ball - B:Sleeve

0292 BL



Performance data		
Rated voltage [V]	U_N	24
Nominal torque [Nm]	M_N	10.0
No-load speed [min^{-1}]	n_0	165.0
Nominal power [W]	P_N	156
Nominal current [A]	I_N	5.0
Nominal force [kN]	F_N	0.00
Duty cycle		s1

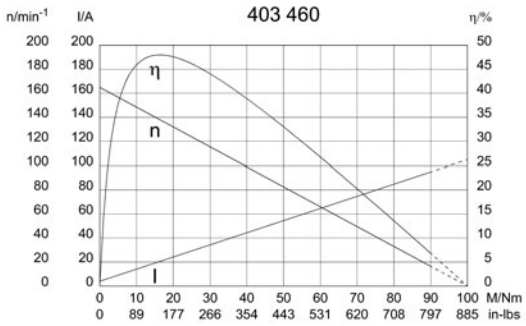
Sensor data	
Pulses	0
Output channels	0

Other data	
Gear ratio	43/3
Gear wheel material	plastic
Suppression components	
Enclosure class	IP 20
Weight [kg]	4.200

Remarks:

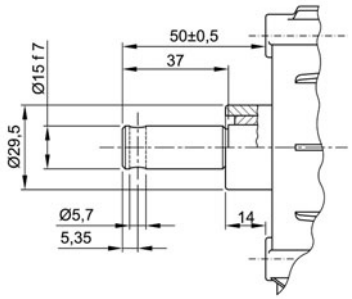
Motor picture

Characteristic curves

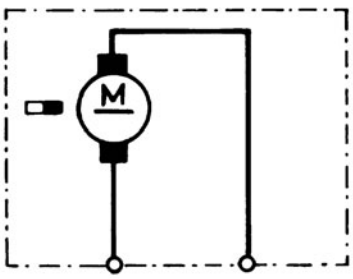


Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

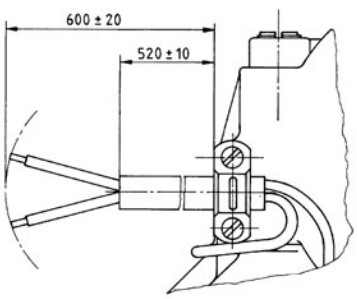
W 167



S 28



K 123



Notes

Notes

Notes

NIDEC MOTORS & ACTUATORS WORLDWIDE DISTRIBUTORS

Innovatech Solutions Pty Ltd.
19 Northwind Avenue
2250 Point Clare, NSW
Australia

Tel. +61 2 43 22 39 62
Fax +61 2 43 22 39 62
rkmutter@innovatechsolutions.com.au
www.innovatechsolutions.com.au

Eisses Import B.V.
Admiraal Trompstraat 11
3115 HK Schiedam
Holland

Tel. +31 1 02 46 00 18
Fax +31 1 02 46 00 19
info@eissesbv.nl
www.eissesbv.nl

Opis Engineering k.s.
Selská 64
61400 Brno-Malomerice
Czech Republic

Tel. +42 05 43 33 00 55
Fax +42 05 43 24 26 53
cada@opis.cz
www.opis.cz

Oy Movetec AB
Hannuksentie 1
02270 Espoo
Finland

Tel. +35 89 52 59 23 0
Fax +35 89 52 59 23 33
pasi.nyberg@movetec.fi
www.movetec.fi

101 automation GmbH
Schallbruch 19-21
42781 Haan
Germany

Tel. +49 21 29 37 63 50
Fax +49 21 29 37 63 59
info@101automation.de
www.101automation.de

Ott GmbH & Co. KG
Baarstrasse 3
78652 Deisslingen
Germany

Tel. +49 74 20 93 99 0
Fax +49 74 20 93 99 25
info@ott-antriebe.de
www.ott-antriebe.de

Electro Mechanical Systems Ltd
Eros House, Calleva Park, Aldermaston
Reading RG7 8LN
Great Britain

Tel. +44 11 89 81 73 91
Fax +44 11 89 81 76 13
pboughey@ems-ltd.com
www.ems-limited.co.uk

Strategi Automation Solutions Pvt Ltd Plot 25/B, Dodannakundi Indl Estate,
560048 Bangalore
India

Tel. +91 80 41 16 31 36/7
Fax +91 80 41 16 30 47
arun@strategiautomation.com
www.strategiautomation.com

Motech s.r.l.
Via delle Nazioni, 87
41100 Modena
Italy

Tel. +39 59 45 42 96
Fax +39 59 45 16 93
m.coda@motech-italia.com
www.motech-italia.com

Eisses Import B.V.
Admiraal Trompstraat 11
3115 HK Schiedam
Holland

Tel. +31 1 02 46 00 18
Fax +31 1 02 46 00 19
info@eissesbv.nl
www.eissesbv.nl

Opis Engineering, s.r.o
Lucna 476
03202 Zavazna Poruba
Slovakia

Tel. +42 14 45 54 72 34
Fax +42 14 45 54 72 34
opis@opis.sk
www.opis.sk

KG Knutsson AB
Hammarbacken 8
19181 Sollentuna
Sweden

Tel. +46 8 92 30 20
Fax +46 8 92 33 66
dan.kimblad@kgk.se
www.kgk.se

S-MİKRON LTD. ŞTİ.
Nilüfer Ticaret Merkezi 66. Sokak No:8
16110 Nilüfer-BURSA
Turkey

Tel. +90 22 44 43 52 33 (Pbx)
Fax +90 22 44 43 52 42
info@s-mikron.com.tr
www.s-mikron.com.tr

Power Electric
15300 25th Ave North, Suite 400
Plymouth MN 55447
USA

Tel. +1 76 35 53 10 90
Fax +1 76 35 53 12 42
nbohn@powerelectric.com
www.powerelectric.com

Kwapil Co. GmbH
Kammelweg 9
1210 Wien
Austria

Tel. +43 12 78 85 85
Fax +43 12 78 85 86
verkauf@kwapil.com
www.kwapil.com

Drive Systems Group
7150 Torbram Road. No 1 & 2
L4T 3Z8 Mississauga, ON
Canada

Tel. +1 90 54 05 03 10
Fax +1 90 54 05 03 13
georger@drivesystemsgroup.com
www.drivesystemsgroup.com

Bondy - LMT A&S
Grundtvigsalle 168
6400 Sonderborg
Denmark

Tel. +45 74 43 18 80
Fax +45 74 43 18 81
ej@lmttransmission.dk
www.lmttransmission.dk

Comotech Industries
6 rue des Blonnières
BP 82441 Haute Goulaine
44124 - VERTOU, France

Tel. +33 2 40 05 05 05
Fax +33 2 40 05 05 03
thierry.berthou@comotech.fr
www.comotech.fr

JBW GmbH
Bodenseestrasse 228
81243 München
Germany

Tel. +49 89 89 70 10 33
Fax +49 89 89 70 10 00
info@elektromotore.eu
www.elektromotore.eu

Wald Antriebe GmbH
Hanns-Hoerbiger-Strasse 1
29664 Walsrode
Germany

Tel. +49 51 61 60 37 07
Fax +49 51 61 60 37 08
info@waldantriebe.de
www.waldantriebe.de

Eisses Import B.V.
Admiraal Trompstraat 11
3115 HK Schiedam
Holland

Tel. +31 1 02 46 00 18
Fax +31 1 02 46 00 19
info@eissesbv.nl
www.eissesbv.nl

Mechatronics Ltd.
P.O. Box 3818
49130 Petach-Tikva
Israel

Tel. +97 2 39 28 88 88
Fax +97 2 39 28 88 80
office@mechatronics.co.il
www.mechatronics.co.il

Nidec-Shimpo Corp
1 Terada Kohtari, Nagaokakyo City
617-0833 Kyoto
Japan

Tel. +81 7 59 58 38 86
Fax +81 7 59 58 36 48
shinichi.takahashi@nidec-shimpo.co.jp
www.nidec-shimpo.co.jp

Aratron AS
Bjornerudveien 17
1266 Oslo
Norway

Tel. +47 23 19 16 60
Fax +47 23 19 16 61
christer@aratron.no
www.aratron.no

Motech Iberica
Avda. de Las Cortes Valencianas, 41, 1°G
46015 Valencia
Spain

Tel. +34 9 63 45 54 05
Fax +34 9 63 46 59 31
jnavarro@motech.es
www.motech.es

Antrimon AG
Luzernerstrasse 91
5630 Muri (AG)
Switzerland

Tel. +41 5 66 75 40 30
Fax +41 5 66 75 40 31
info@antrimon.ch
www.antrimon.ch

Burns Controls Comp.
13735 Beta Road
Dallas TX 75244
USA

Tel. +1 97 22 33 67 12
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sales@nidec-ma.com

www.nidec-ma.com