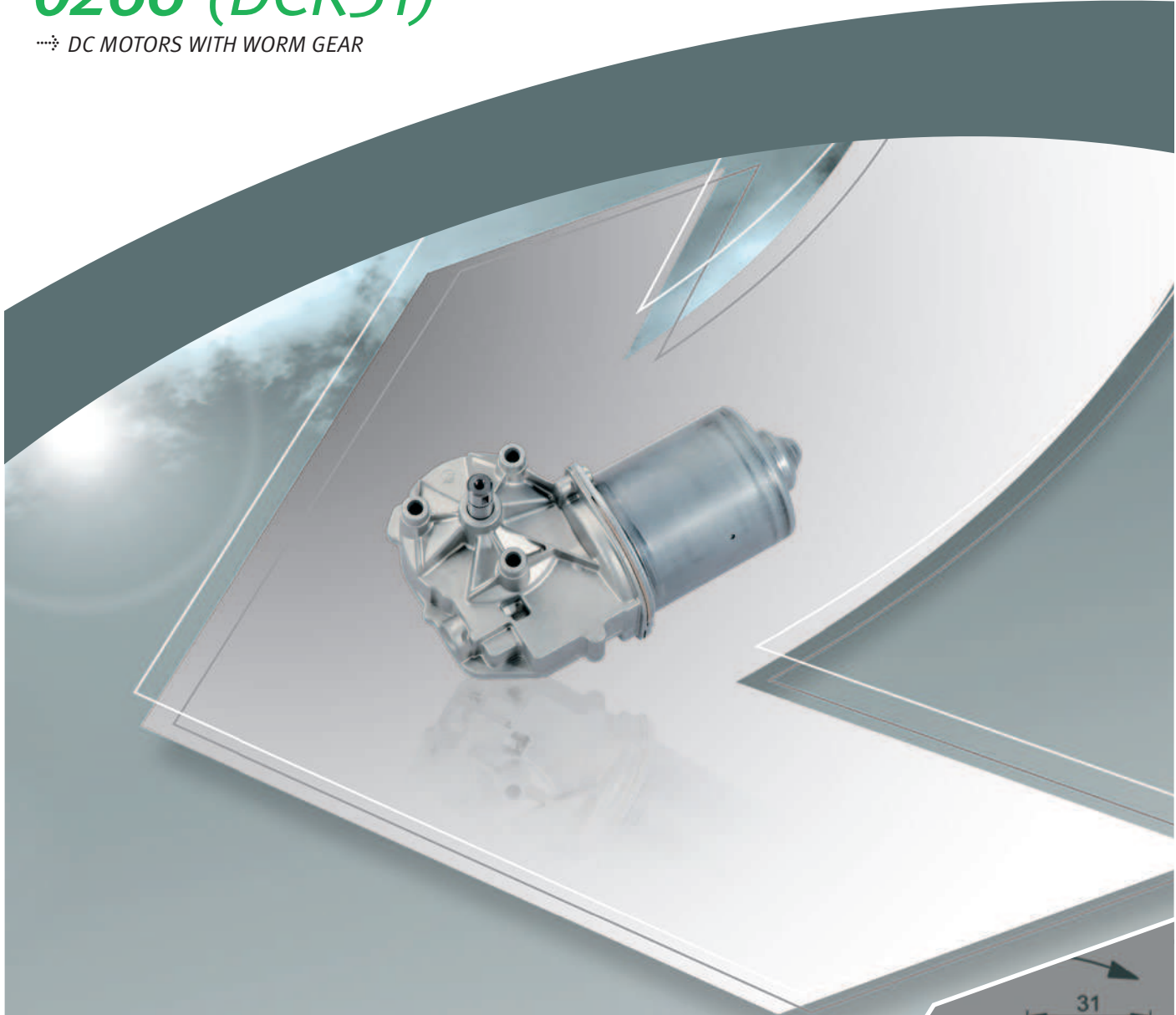




# 0266 (DCK31)

❖❖❖ DC MOTORS WITH WORM GEAR



## ❖❖❖ TECHNICAL DESCRIPTION

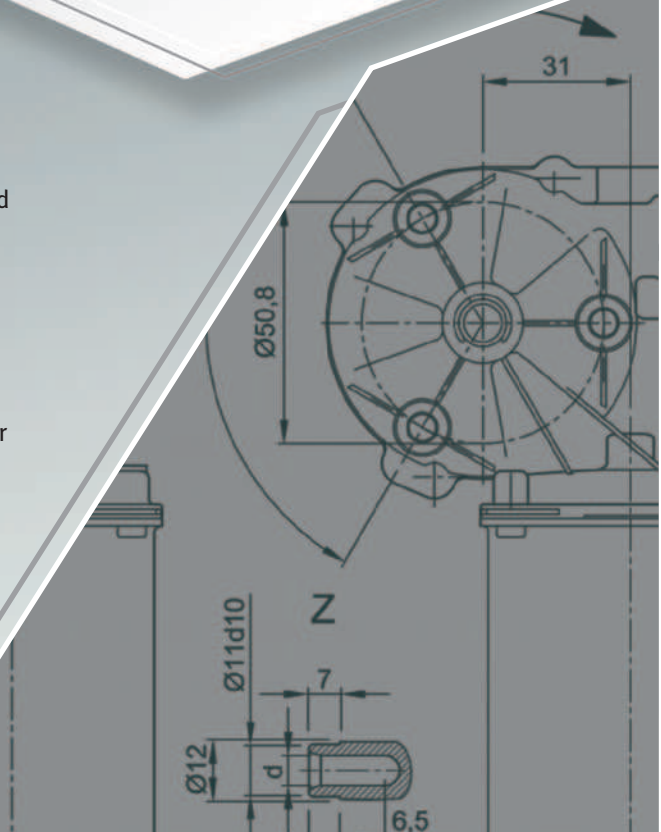
|                       |                                   |
|-----------------------|-----------------------------------|
| Motorhousing:         | deep drawn & corrosion protected  |
| Excitation field:     | permanent magnet                  |
| Type of gear mesh:    | worm gear                         |
| 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



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

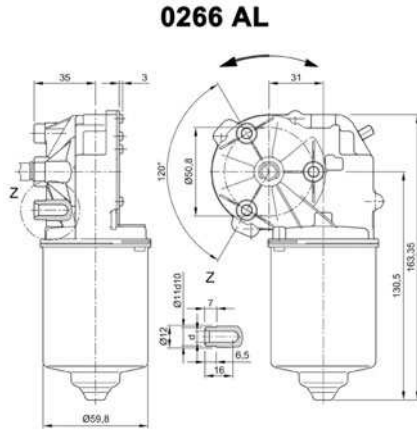
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 65.0 |
| Nominal power [W]                   | $P_N$ | 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  |

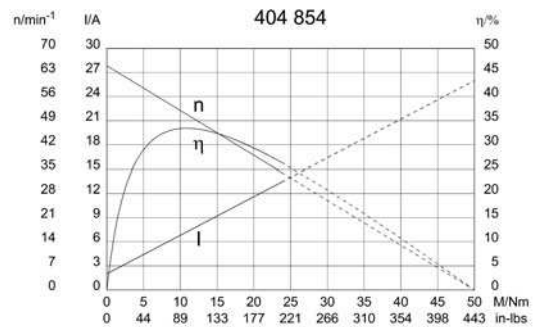
| Other data             |                 |
|------------------------|-----------------|
| Gear ratio             | 69/1            |
| Gear wheel material    | plastic         |
| Suppression components | 6 $\mu\text{H}$ |
| Enclosure class        | IP 30           |
| Weight [kg]            | 1.250           |

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

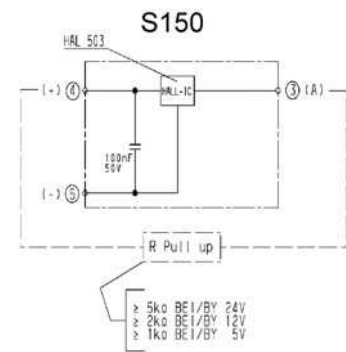
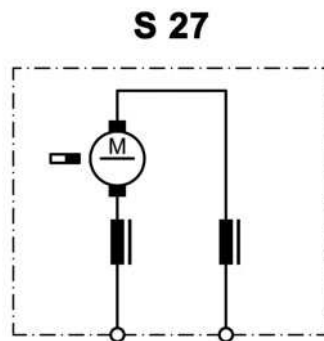
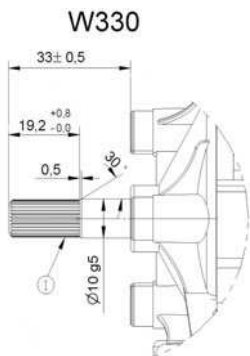
**Characteristic curves**



**Motor picture**



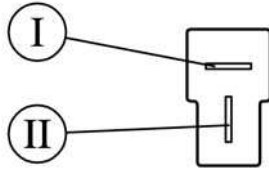
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



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

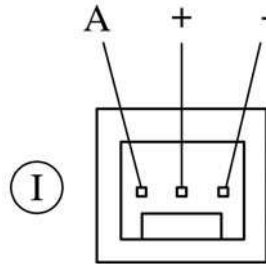
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

**K 320**



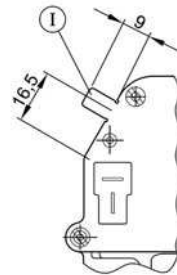
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907 & Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**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](http://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](http://www.stocko.de)

**Notes**

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

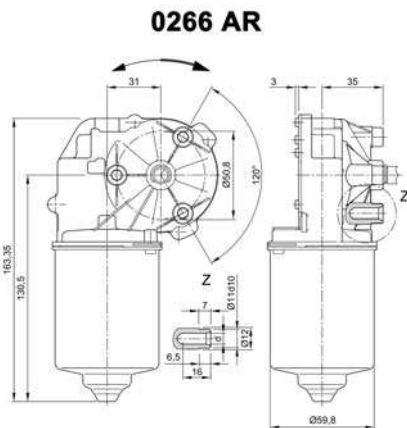
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 66.0 |
| Nominal power [W]                   | $P_N$ | 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 |

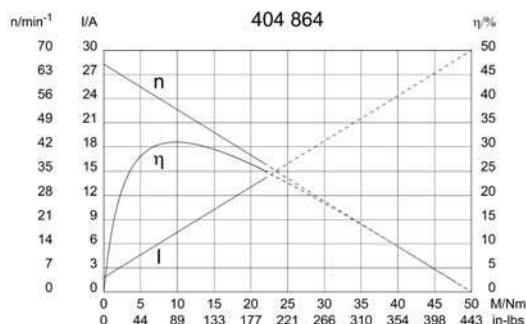
| Other data             |                        |
|------------------------|------------------------|
| Gear ratio             | 69/1                   |
| Gear wheel material    | plastic                |
| Suppression components | 3,5 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP 30                  |
| Weight [kg]            | 1.210                  |

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

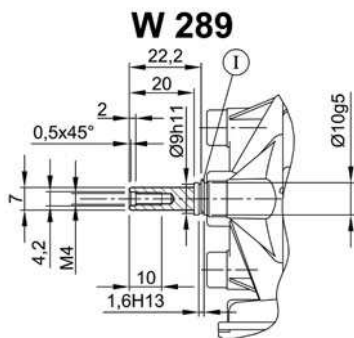
**Characteristic curves**



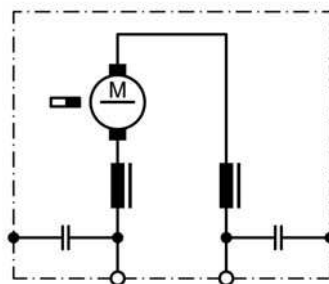
**Motor picture**



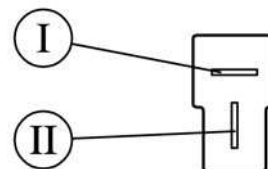
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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](http://www.tycoelectronics.com)

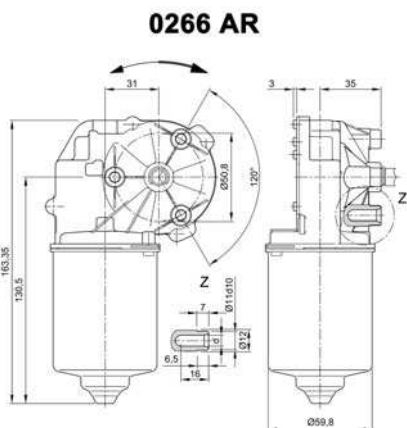
| Design Data           |                     |
|-----------------------|---------------------|
| Commutation           | Brushed             |
| Direction of rotation | Bi-directional      |
| Bearing type          | A: Ball - B: Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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    |      |

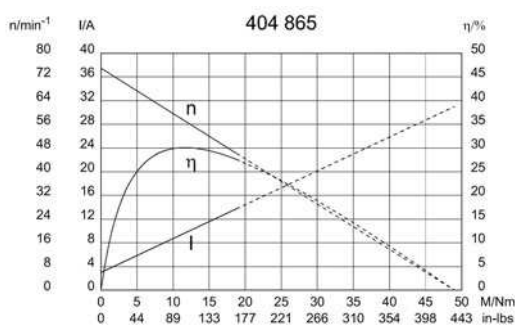
| Sensor data     |    |
|-----------------|----|
| Pulses          | 69 |
| Output channels | 2  |

| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 69/1             |
| Gear wheel material    | Plastic          |
| Suppression components | 6.0 $\mu$ H, 1nF |
| Enclosure class        | IP30             |
| Weight [kg]            | 1.210            |

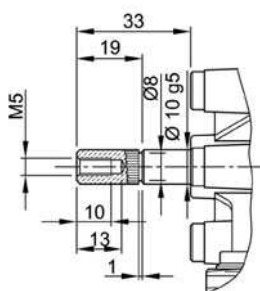
Remarks: d = for thread-forming screw M6 DIN ISO 965-2



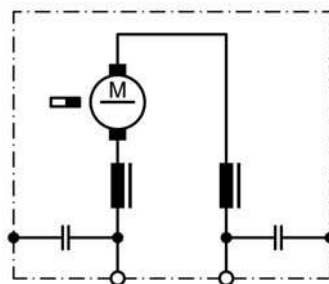
**Motor picture**



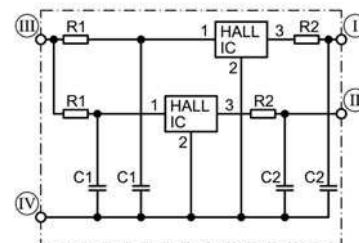
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**S 30**



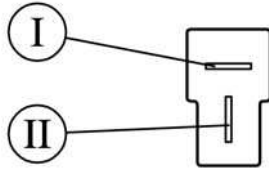
**S 141**



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

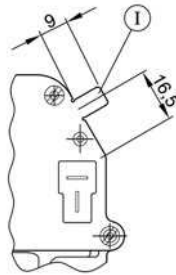
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

**K 320**

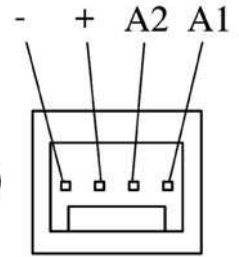


Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**K 321**



I Ground connection  
 Blade terminal 6.3 x 0.8 DIN 46 244



I Mating connector: Panduit CE100 F22-04

**Notes**

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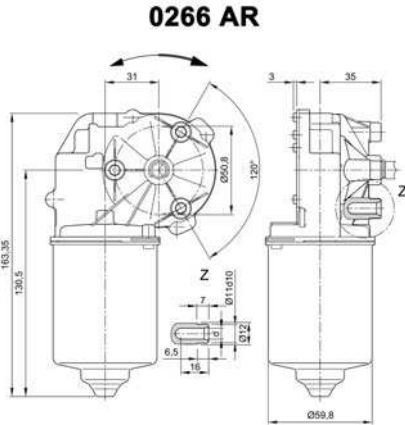
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:ball - B:sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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    |      |

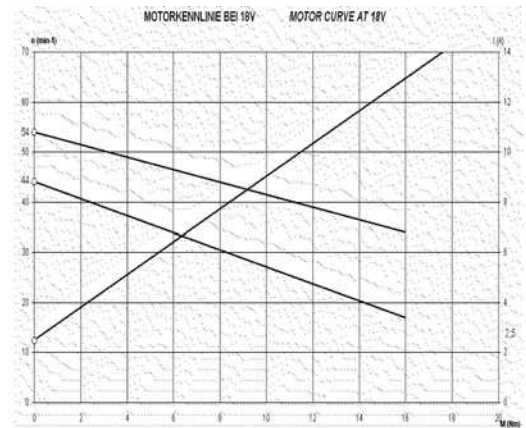
| Sensor data     |   |
|-----------------|---|
| Pulses          | 0 |
| Output channels | 0 |

| Other data             |                               |
|------------------------|-------------------------------|
| Gear ratio             | 69/1                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.216                         |

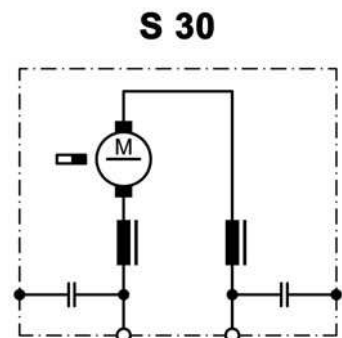
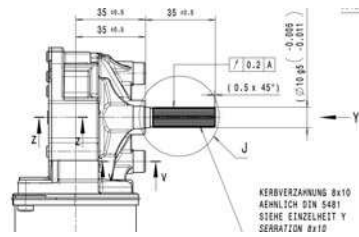
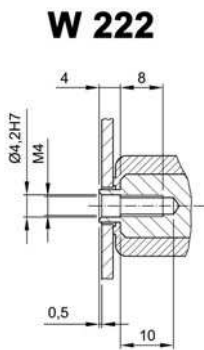
Remarks: d = for thread-forming screw M6 DIN ISO 965-2



**Motor picture**



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



! Only for connection of encoder





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

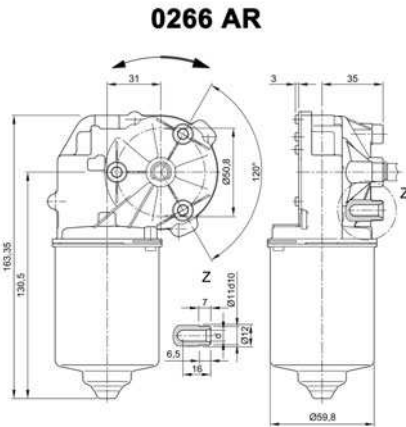
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 35.0 |
| Nominal power [W]                   | $P_N$ | 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 |

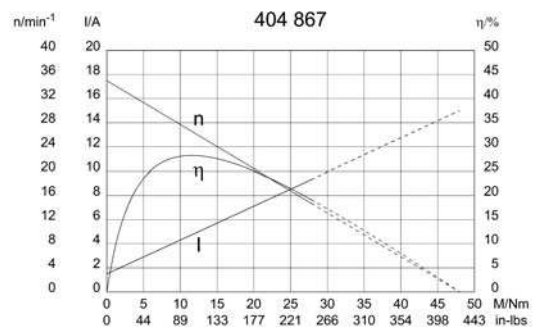
| Other data             |                               |
|------------------------|-------------------------------|
| Gear ratio             | 69/1                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.210                         |

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

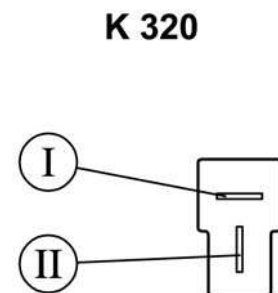
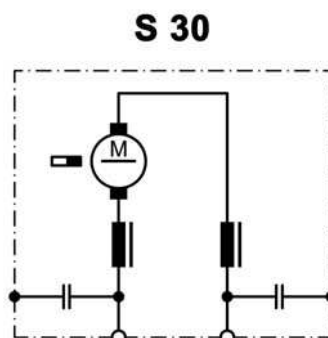
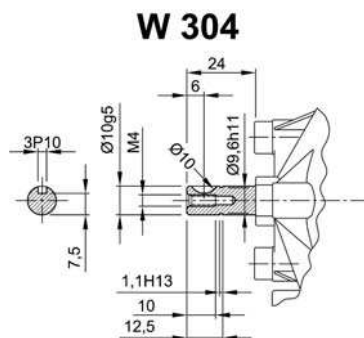
**Characteristic curves**



**Motor picture**



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



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](http://www.tycoelectronics.com)

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

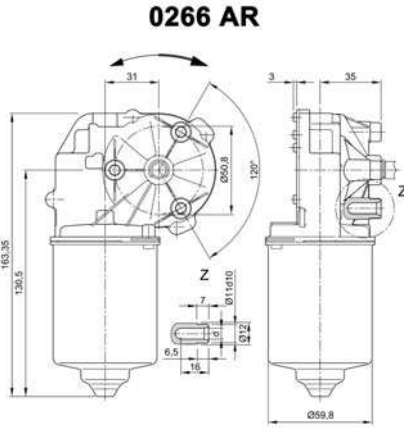
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 21.0 |
| Nominal power [W]                   | $P_N$ | 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 |

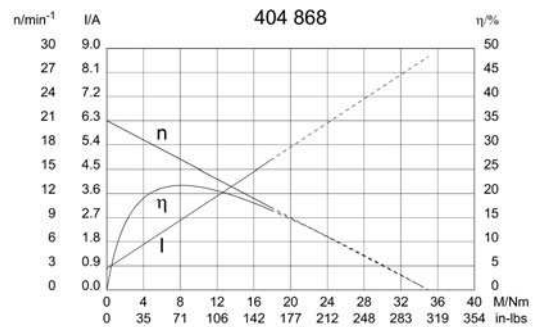
| Other data             |                        |
|------------------------|------------------------|
| Gear ratio             | 69/1                   |
| Gear wheel material    | plastic                |
| Suppression components | 3,5 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP 30                  |
| Weight [kg]            | 1.210                  |

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

**Characteristic curves**

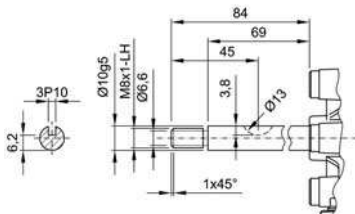


**Motor picture**

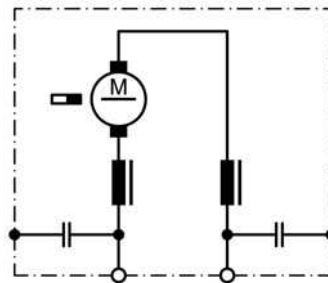


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

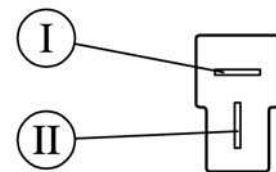
**W 120**



**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](http://www.tycoelectronics.com)

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

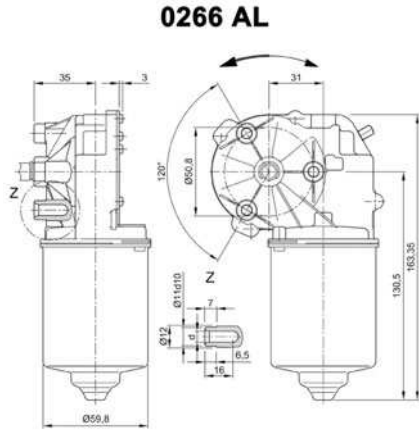
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 12   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 30.0 |
| Nominal power [W]                   | $P_N$ | 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 |

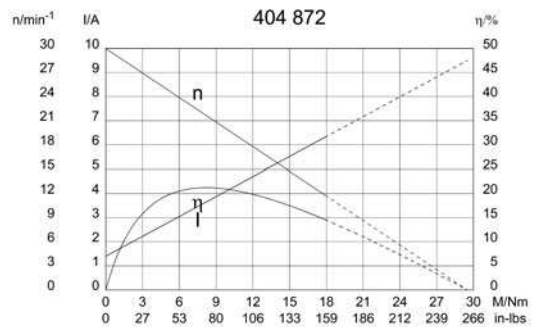
| Other data             |           |
|------------------------|-----------|
| Gear ratio             | 69/1      |
| Gear wheel material    | plastic   |
| Suppression components | 6 $\mu$ H |
| Enclosure class        | IP 30     |
| Weight [kg]            | 1.210     |

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

**Characteristic curves**

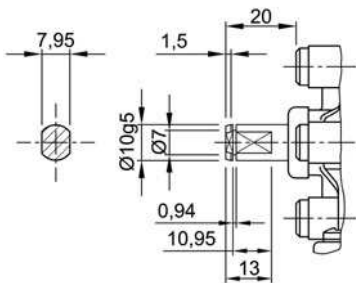


**Motor picture**

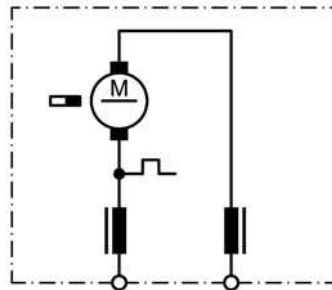


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

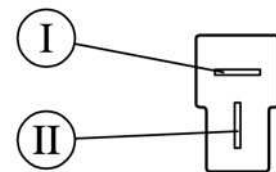
**W 252**



**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](http://www.tycoelectronics.com)

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

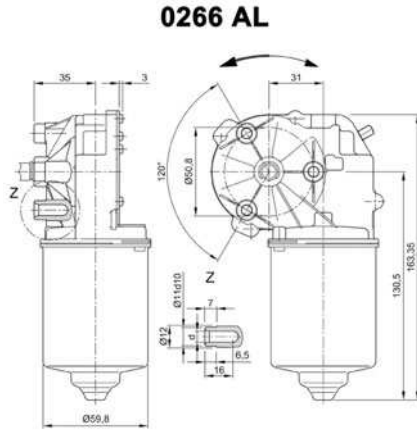
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 160.0 |
| Nominal power [W]                   | $P_N$ | 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 |

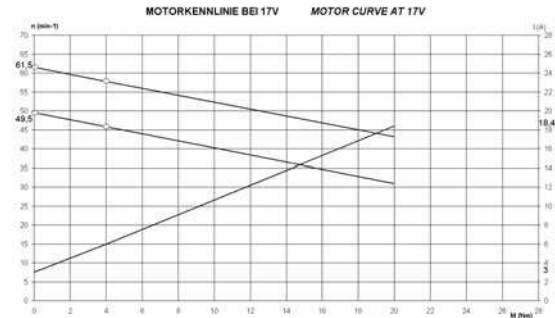
| Other data             |                |
|------------------------|----------------|
| Gear ratio             | 53/2           |
| Gear wheel material    | plastic        |
| Suppression components | 6 $\mu$ H, 1nF |
| Enclosure class        | IP 30          |
| Weight [kg]            | 1.210          |

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

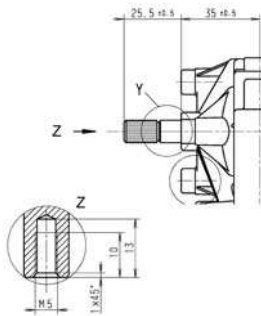
**Characteristic curves**



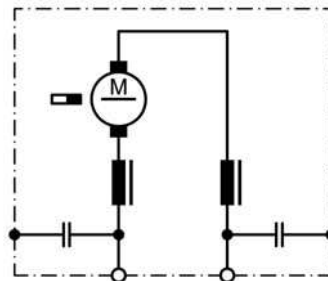
**Motor picture**



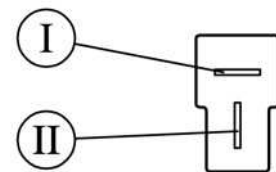
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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](http://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](http://www.tycoelectronics.com)

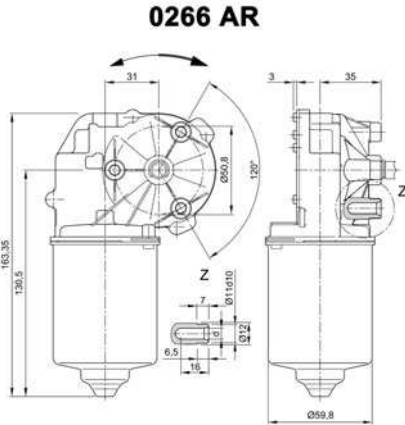
| Design Data           |                    |
|-----------------------|--------------------|
| Commutation           | Brushed            |
| Direction of rotation | Bi-directional     |
| Bearing type          | A: Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 3.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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    |      |

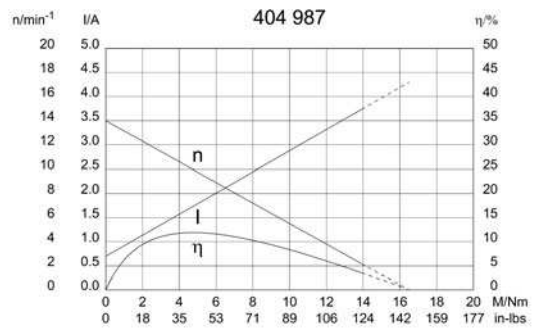
| Sensor data     |     |
|-----------------|-----|
| Pulses          | 234 |
| Output channels | 1   |

| Other data             |                            |
|------------------------|----------------------------|
| Gear ratio             | 78/1                       |
| Gear wheel material    | bronze                     |
| Suppression components | $6\mu\text{H}, 1\text{nF}$ |
| Enclosure class        | IP 30                      |
| Weight [kg]            | 1.210                      |

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

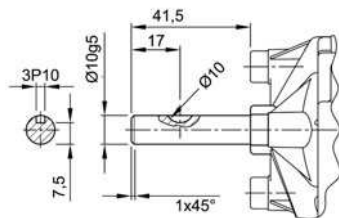


**Motor picture**

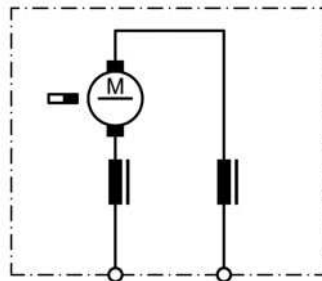


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

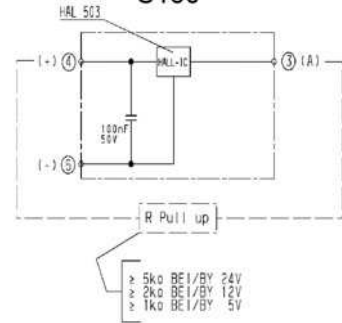
**W 327**



**S 27**

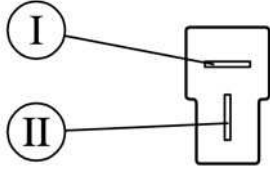


**S150**



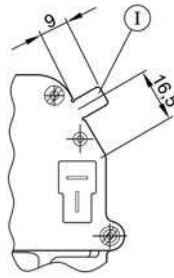
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

**K 320**



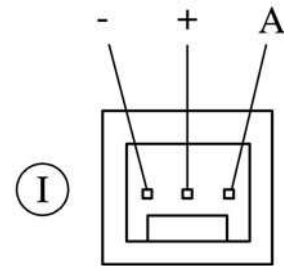
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907 & Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**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**

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### 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 [ $\text{min}^{-1}$ ] | $n_0$ | 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

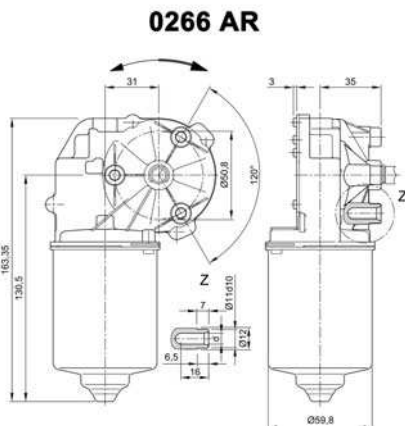
|                 |     |
|-----------------|-----|
| Pulses          | 207 |
| Output channels | 1   |

### Other data

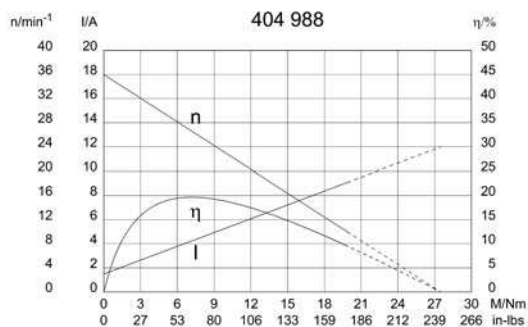
|                        |                               |
|------------------------|-------------------------------|
| Gear ratio             | 69/1                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.210                         |

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

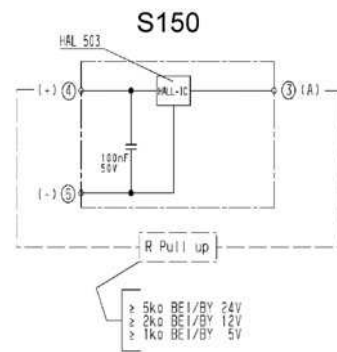
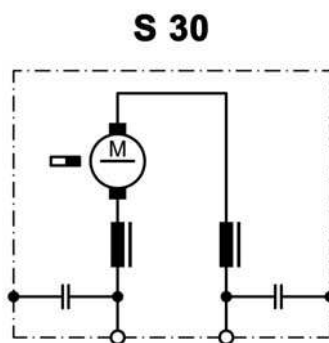
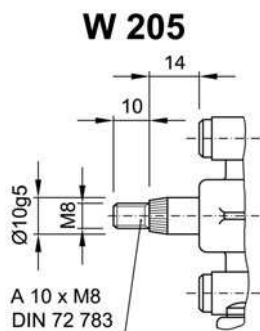
### Characteristic curves



### Motor picture



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











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

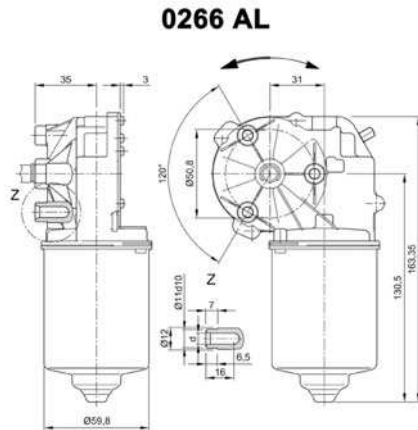
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 1.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 270.0 |
| Nominal power [W]                   | $P_N$ | 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     |

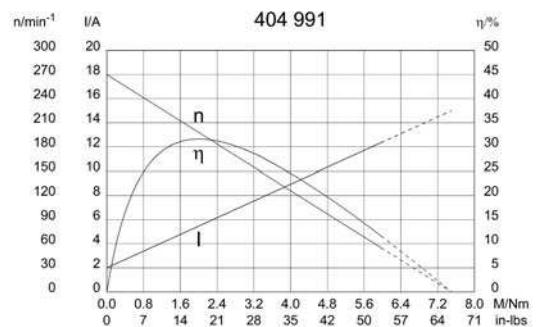
| Other data             |                               |
|------------------------|-------------------------------|
| Gear ratio             | 41/4                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.250                         |

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

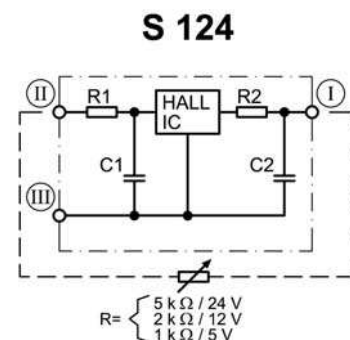
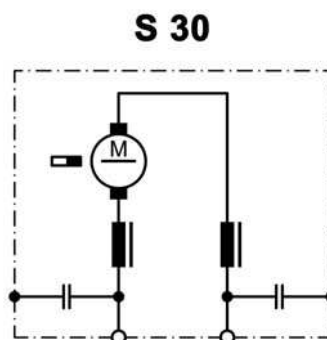
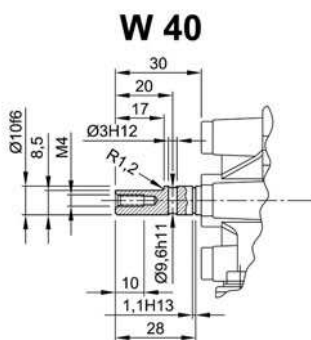
**Characteristic curves**



**Motor picture**



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



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



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

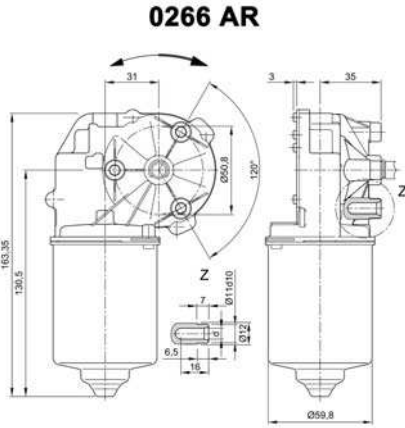
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 12   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 21.0 |
| Nominal power [W]                   | $P_N$ | 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 |

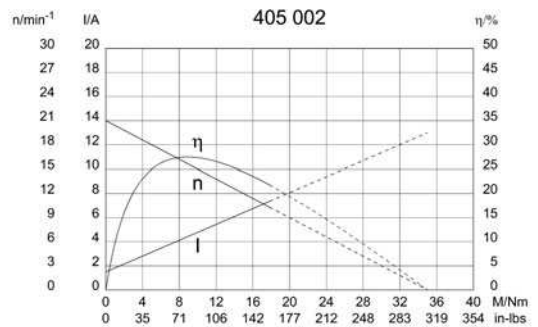
| Other data             |                        |
|------------------------|------------------------|
| Gear ratio             | 69/1                   |
| Gear wheel material    | plastic                |
| Suppression components | 3,5 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP 30                  |
| Weight [kg]            | 1.210                  |

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

**Characteristic curves**

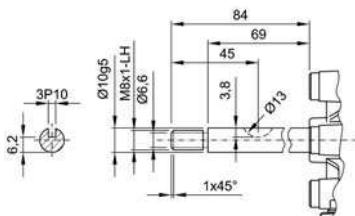


**Motor picture**

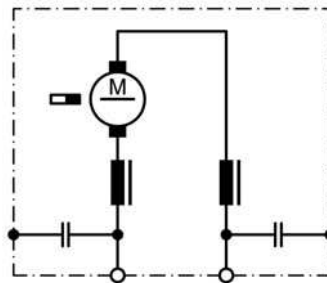


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

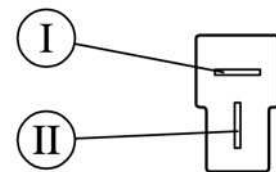
**W 120**



**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](http://www.tycoelectronics.com)

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

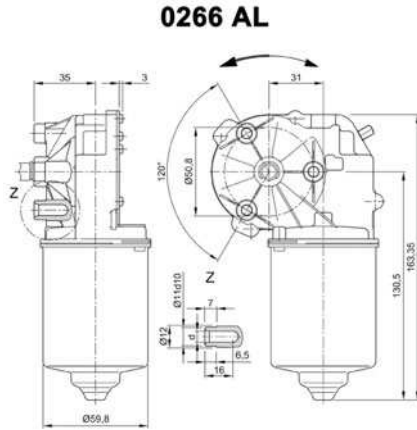
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 65.0 |
| Nominal power [W]                   | $P_N$ | 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  |

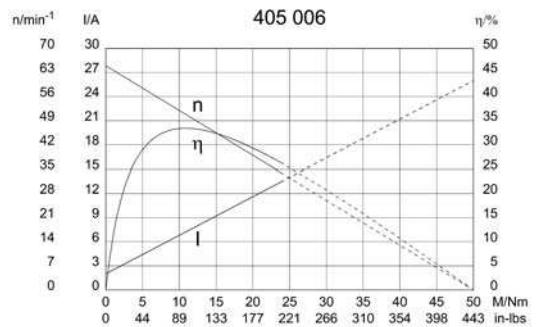
| Other data             |           |
|------------------------|-----------|
| Gear ratio             | 69/1      |
| Gear wheel material    | plastic   |
| Suppression components | 6 $\mu$ H |
| Enclosure class        | IP 30     |
| Weight [kg]            | 1.250     |

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

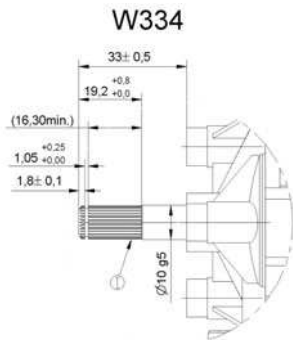
**Characteristic curves**



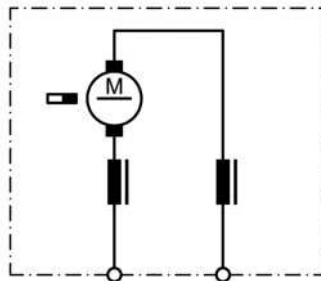
**Motor picture**



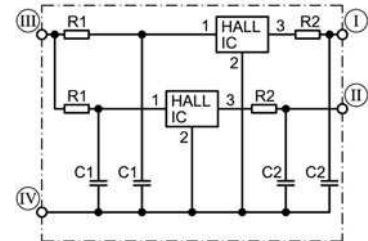
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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](http://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



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

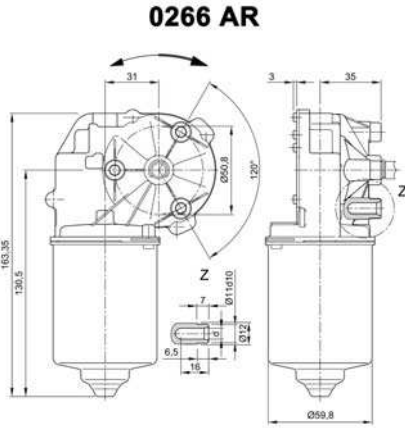
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 4.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 195.0 |
| Nominal power [W]                   | $P_N$ | 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    |

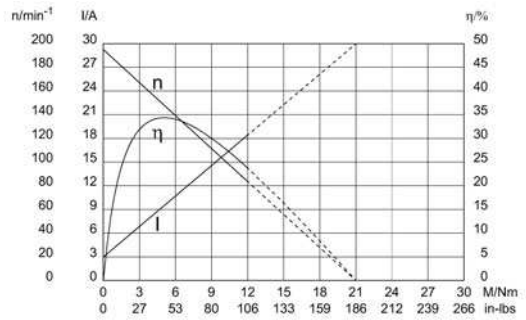
| Other data             |                         |
|------------------------|-------------------------|
| Gear ratio             | 53/2                    |
| Gear wheel material    | Plastic                 |
| Suppression components | 6.0 $\mu\text{H}$ , 1nF |
| Enclosure class        | IP30                    |
| Weight [kg]            | 1.210                   |

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

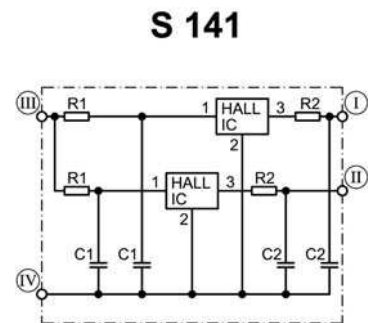
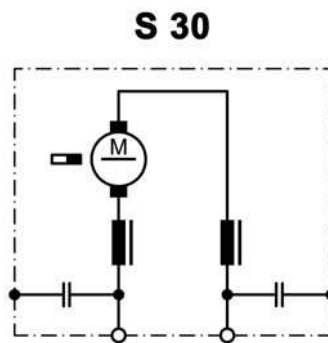
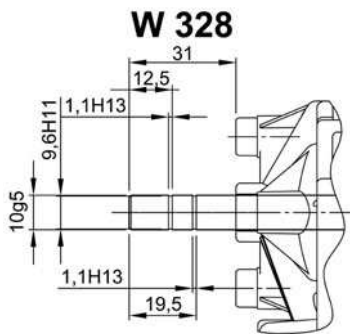
**Characteristic curves**



**Motor picture**



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

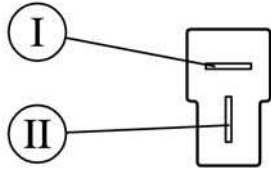


- I Hall-IC A1, terminal 3
- II Hall-IC A2, terminal 4
- III Hall-IC +, terminal 5
- IV Hall-IC -, terminal 6



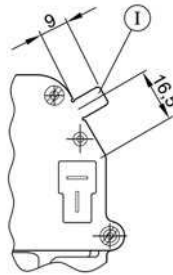
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

**K 320**



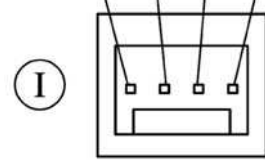
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907 & Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**K 321**



I Ground connection  
 Blade terminal 6.3 x 0.8 DIN 46 244

- + A2 A1



I Mating connector: Panduit CE100 F22-04

**Notes**

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

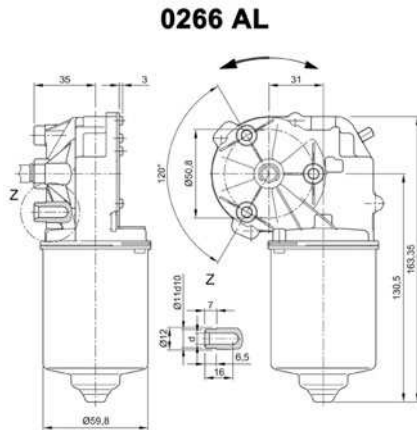
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 55.0 |
| Nominal power [W]                   | $P_N$ | 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  |

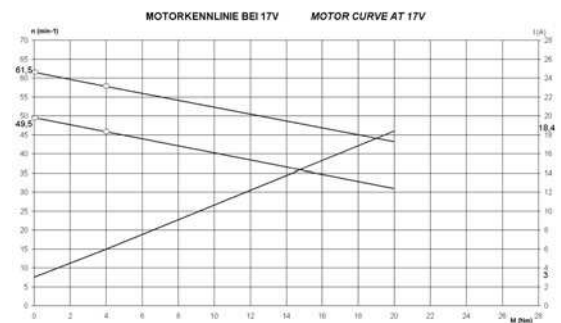
| Other data             |                |
|------------------------|----------------|
| Gear ratio             | 78/1           |
| Gear wheel material    | plastic        |
| Suppression components | 6 $\mu$ H, 1nF |
| Enclosure class        | IP 30          |
| Weight [kg]            | 1.210          |

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

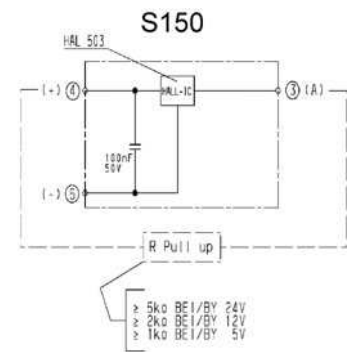
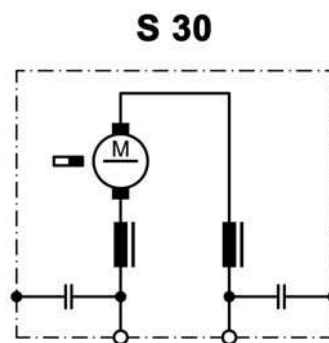
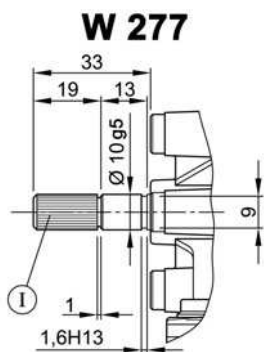
**Characteristic curves**



**Motor picture**



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



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



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

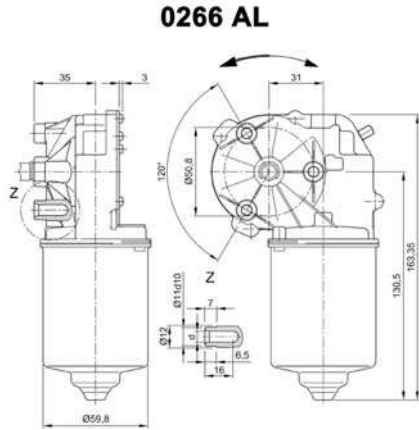
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 90.0 |
| Nominal power [W]                   | $P_N$ | 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  |

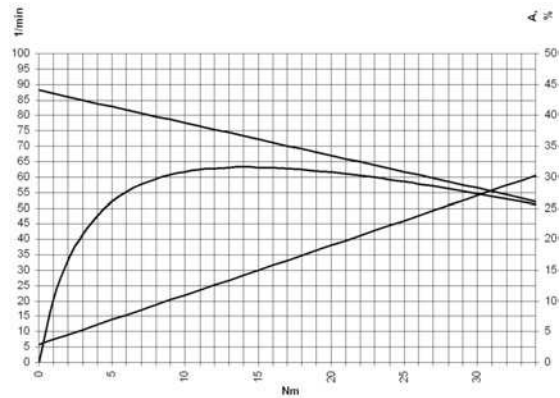
| Other data             |                               |
|------------------------|-------------------------------|
| Gear ratio             | 69/1                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.210                         |

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

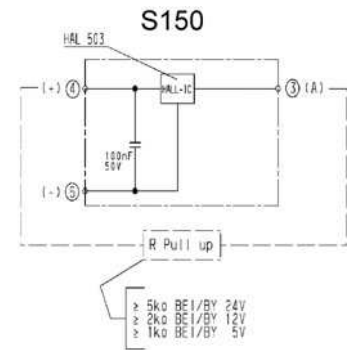
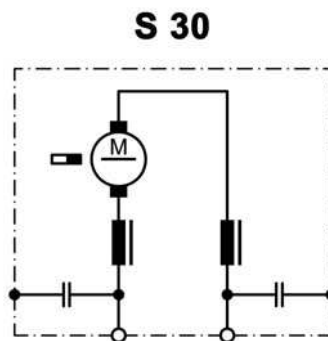
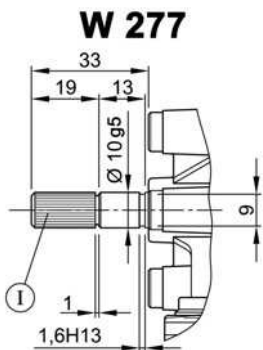
**Characteristic curves**



**Motor picture**



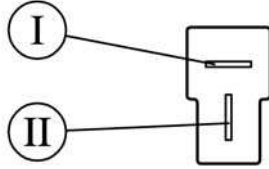
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



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

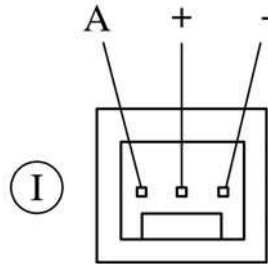
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

**K 320**



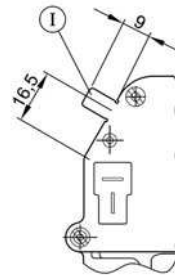
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907& Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**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](http://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](http://www.stocko.de)

**Notes**

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

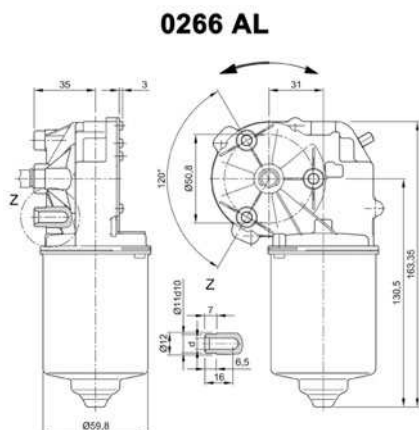
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 120.0 |
| Nominal power [W]                   | $P_N$ | 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    |

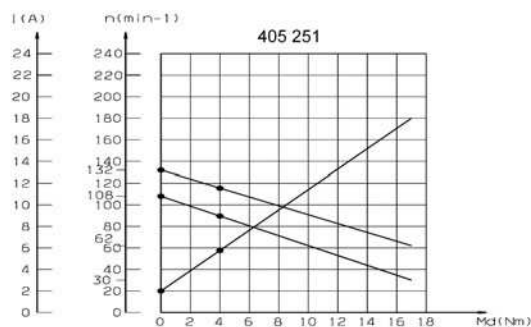
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 53/2             |
| Gear wheel material    | Plastic          |
| Suppression components | 6.0 $\mu$ H, 1nF |
| Enclosure class        | IP30             |
| Weight [kg]            | 1.210            |

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

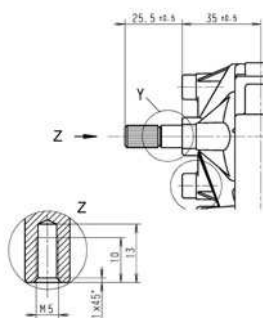
**Characteristic curves**



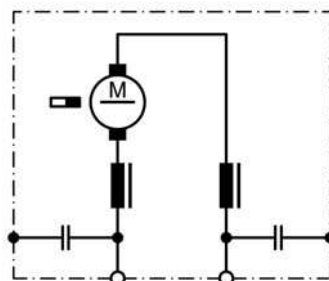
**Motor picture**



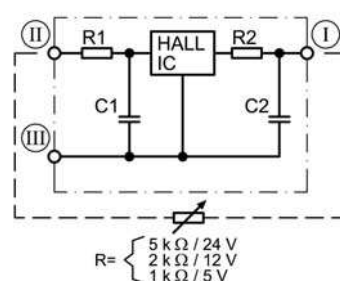
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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.frengo.de](http://www.frengo.de)

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

$R = \begin{cases} 5 \text{ k}\Omega / 24 \text{ V} \\ 2 \text{ k}\Omega / 12 \text{ V} \\ 1 \text{ k}\Omega / 5 \text{ V} \end{cases}$



**Notes**

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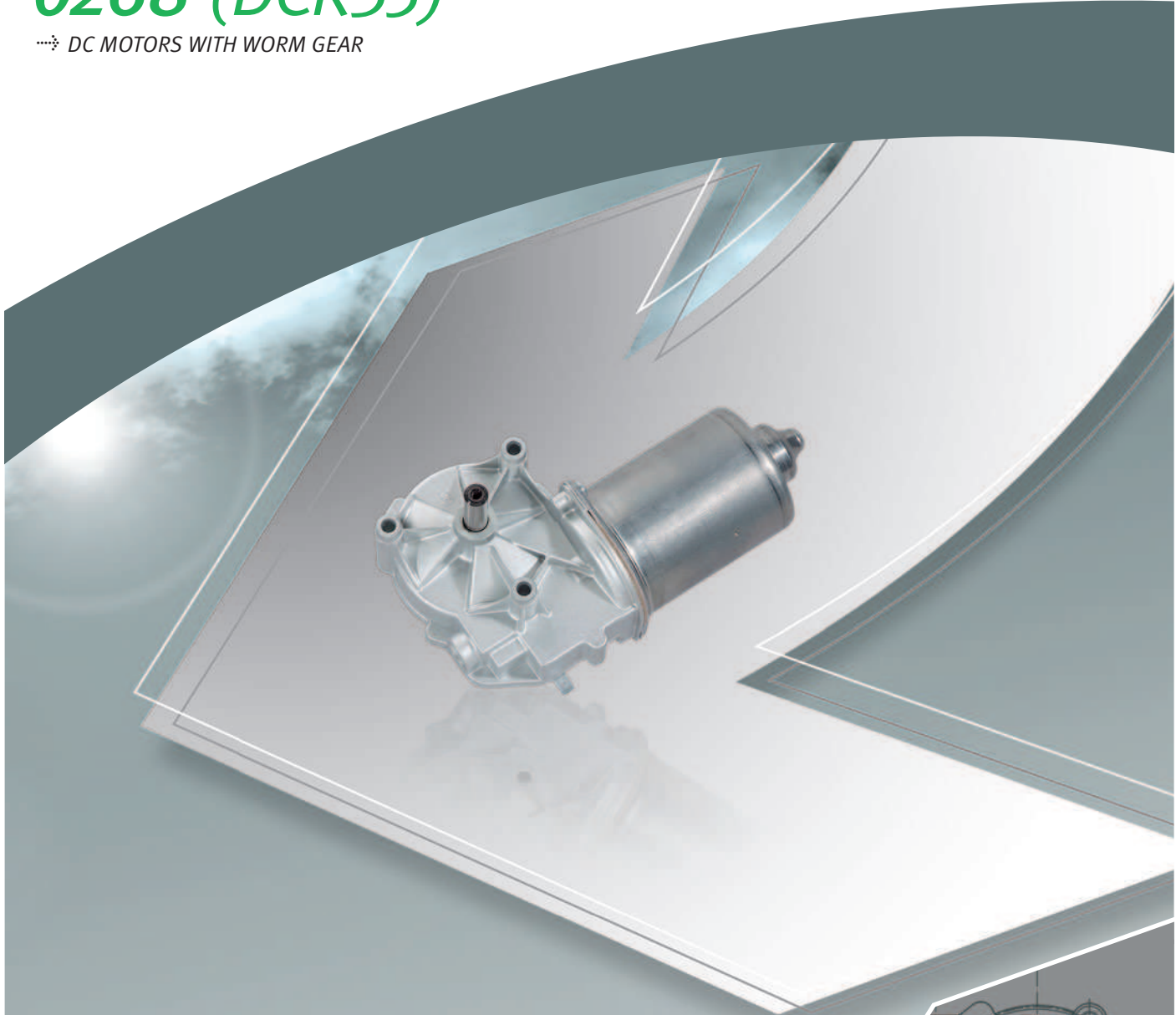




**NIDEC MOTORS & ACTUATORS** ❖❖❖ MOTOR SERIES

# 0268 (DCK35)

❖❖❖ DC MOTORS WITH WORM GEAR



## ❖❖❖ TECHNICAL DESCRIPTION

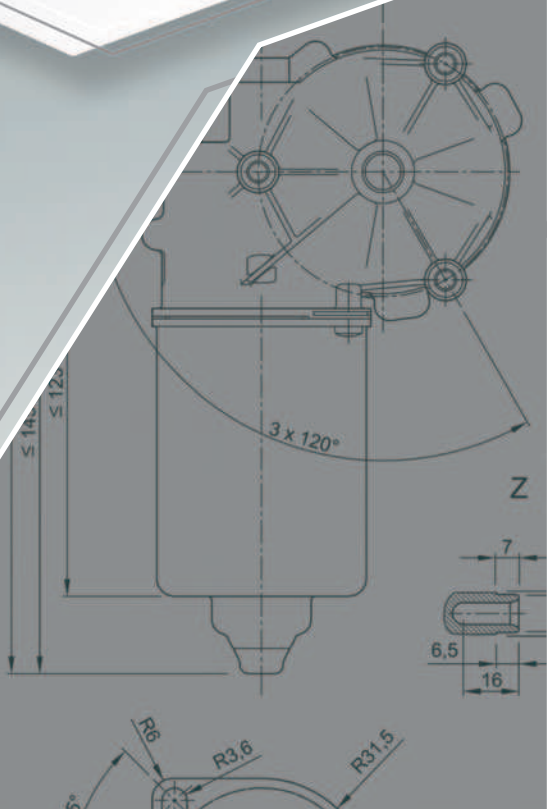
|                       |                                  |
|-----------------------|----------------------------------|
| Motorhousing:         | deep drawn & corrosion protected |
| Excitation field:     | permanent magnet                 |
| Type of gear mesh:    | worm gear                        |
| 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



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

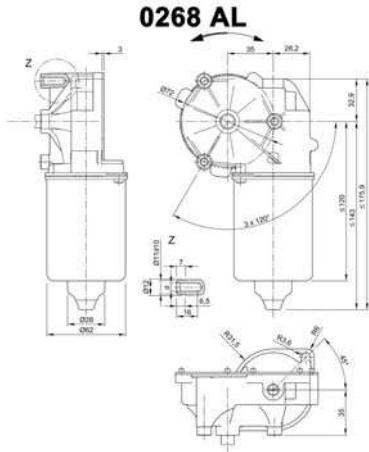
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 62.0 |
| Nominal power [W]                   | $P_N$ | 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  |

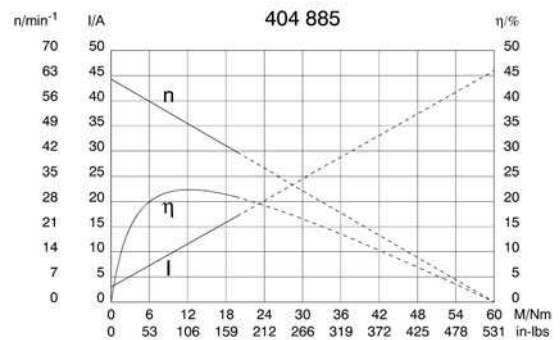
| Other data             |             |
|------------------------|-------------|
| Gear ratio             | 63/1        |
| Gear wheel material    | plastic     |
| Suppression components | 3,5 $\mu$ H |
| Enclosure class        | IP 30       |
| Weight [kg]            | 1.250       |

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

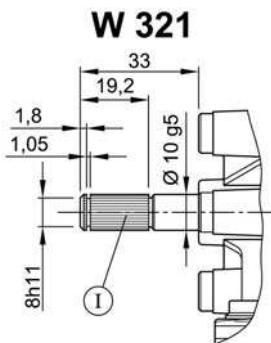
**Characteristic curves**



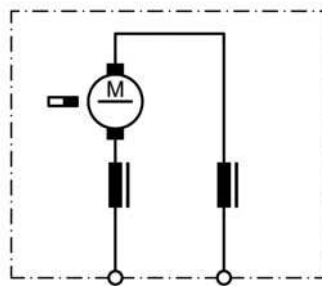
**Motor picture**



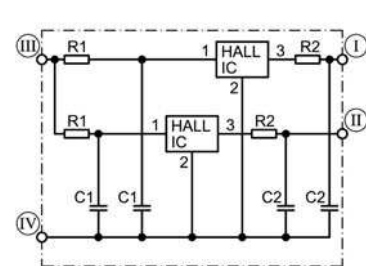
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**S 27**



**S 141**



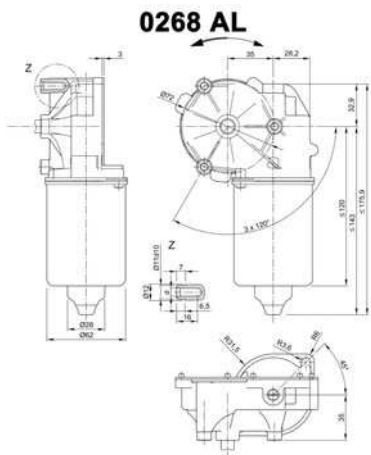
I serration (rolled): no of teeth 28, pitch circle dia 9 mm, tip circle dia 9.6 mm, root circle dia 8.26 mm space width angle 60°- go/no go gauge Frenco 33906 - [www.frenco.de](http://www.frenco.de)

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



| 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 [ $\text{min}^{-1}$ ] | $n_0$ | 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 |

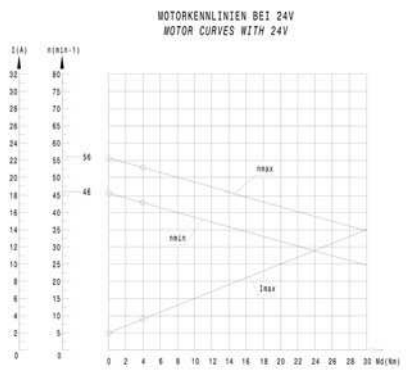
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 63/1             |
| Gear wheel material    | plastic          |
| Suppression components | 3,5 $\mu$ H, 1nF |
| Enclosure class        | IP 30            |
| Weight [kg]            | 1.250            |

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

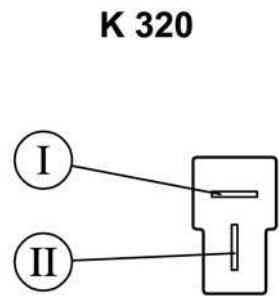
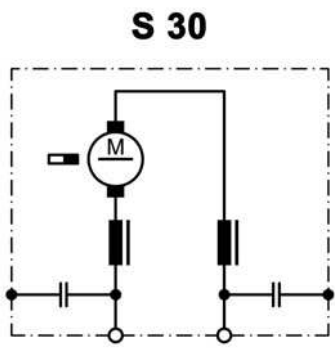
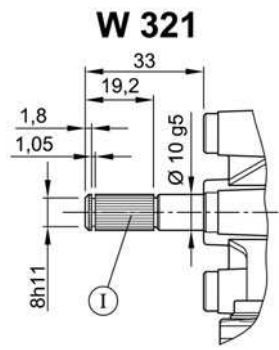
**Motor picture**



**Characteristic curves**



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



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](http://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](http://www.tycoelectronics.com)

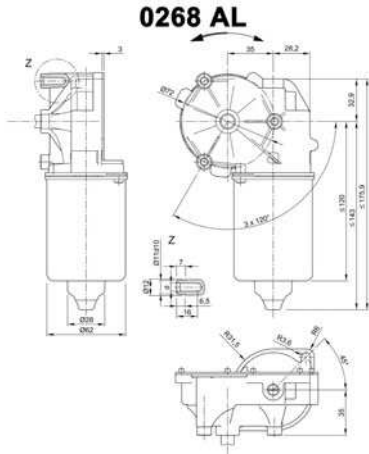
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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   |

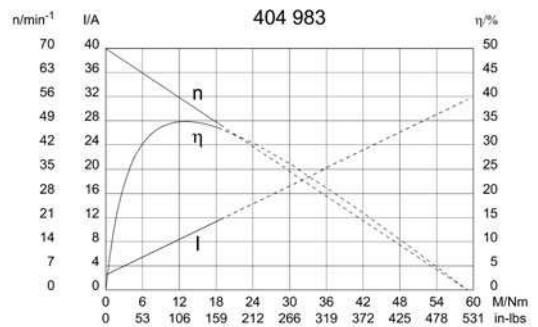
| Sensor data     |   |
|-----------------|---|
| Pulses          | 0 |
| Output channels | 0 |

| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 55/1             |
| Gear wheel material    | plastic          |
| Suppression components | 3,5 $\mu$ H, 1nF |
| Enclosure class        | IP 30            |
| Weight [kg]            | 1.250            |

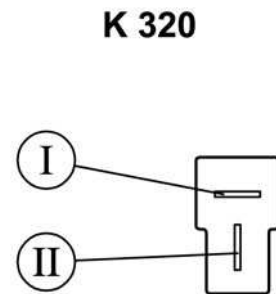
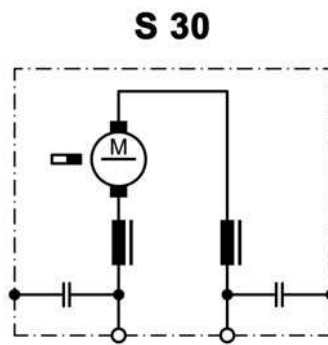
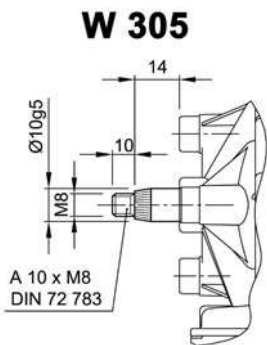
Remarks: d = for thread-forming screw M6 DIN ISO 965-2



**Motor picture**



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



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](http://www.tycoelectronics.com)

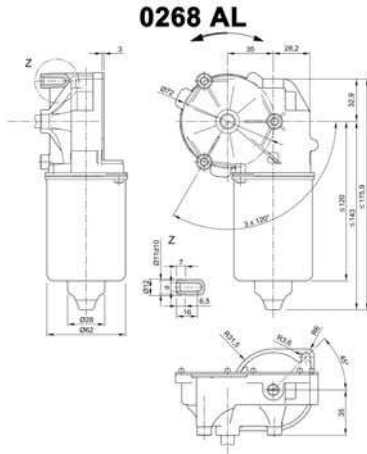
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 3,5 $\mu$ H |
| Enclosure class        | IP 30       |
| Weight [kg]            | 1.376       |

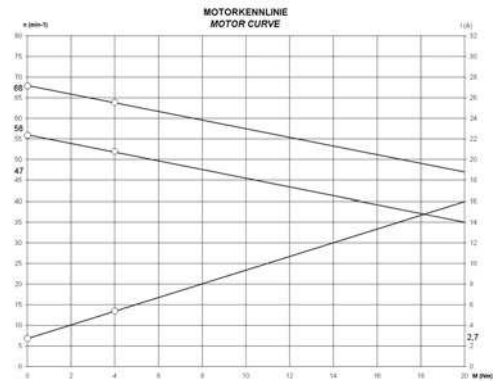
Remarks:



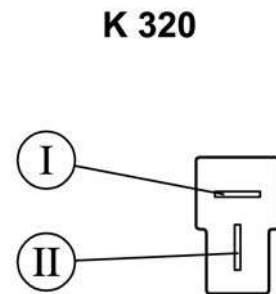
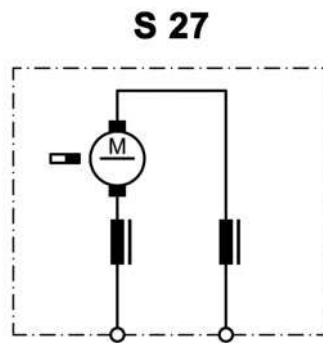
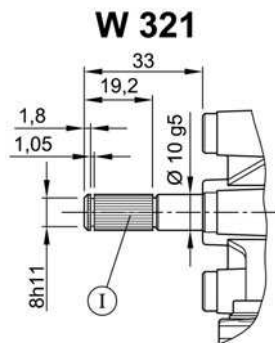
**Motor picture**



**Characteristic curves**



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



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](http://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](http://www.tycoelectronics.com)



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

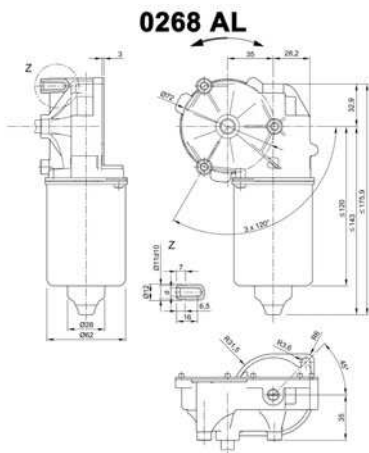
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 75.0 |
| Nominal power [W]                   | $P_N$ | 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  |

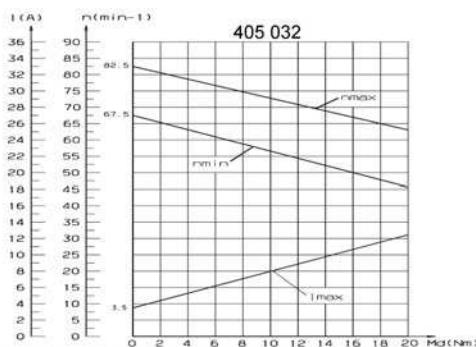
| Other data             |                   |
|------------------------|-------------------|
| Gear ratio             | 63/1              |
| Gear wheel material    | Plastic           |
| Suppression components | 3.5 $\mu\text{H}$ |
| Enclosure class        | IP30              |
| Weight [kg]            | 1.250             |

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

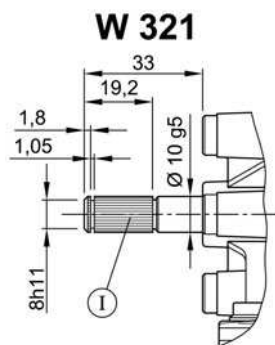
**Characteristic curves**



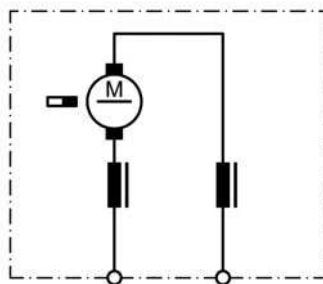
**Motor picture**



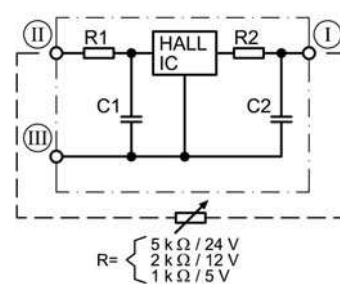
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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](http://www.frenco.de)

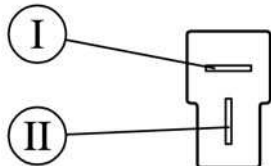
I Terminal 3, A  
 II Terminal 4, +  
 III Terminal 5, -

$R = \begin{cases} 5 \text{ k}\Omega / 24 \text{ V} \\ 2 \text{ k}\Omega / 12 \text{ V} \\ 1 \text{ k}\Omega / 5 \text{ V} \end{cases}$



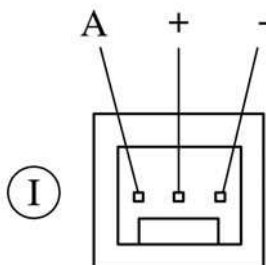
Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)

**K 320**



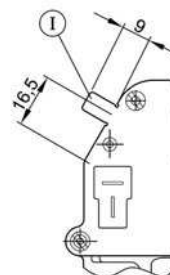
Flat plug (DIN 46244) 6,3x0,8 mating with receptacle housing part#180907, drwg# C-180907 & Receptacles for tabs, conductor cross section 0,5-1,5 sqmm (20-18AWG) part# 925603-x, drwg# 925603 [www.tycoelectronics.com](http://www.tycoelectronics.com)

**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](http://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](http://www.stocko.de)

### Notes

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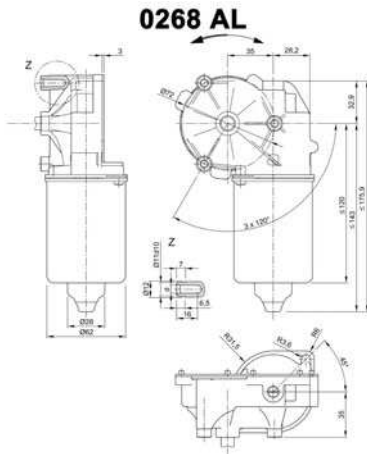
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 3,5 $\mu$ H, 1nF |
| Enclosure class        | IP 30            |
| Weight [kg]            | 1.250            |

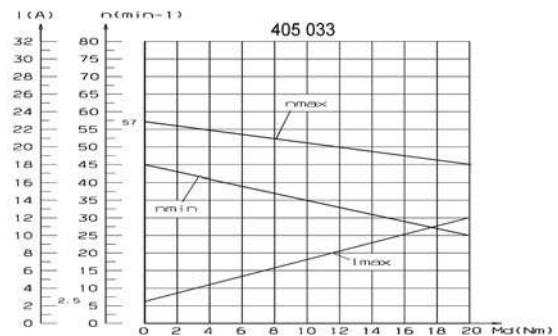
Remarks: d=for thread forming screws M6 DIN ISO 965-2



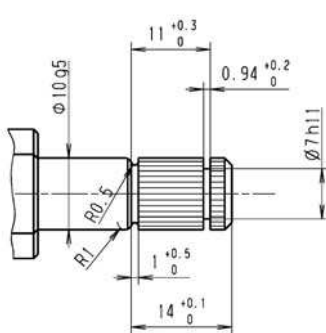
**Motor picture**



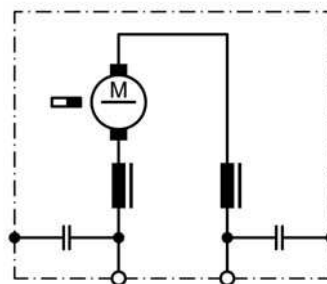
**Characteristic curves**



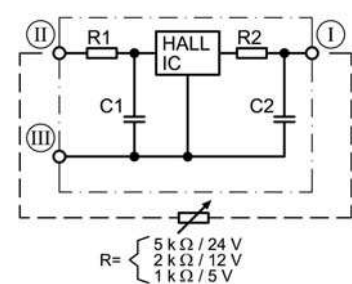
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**S 30**



**S 124**



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

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

$R = \begin{cases} 5 \text{ k}\Omega / 24 \text{ V} \\ 2 \text{ k}\Omega / 12 \text{ V} \\ 1 \text{ k}\Omega / 5 \text{ V} \end{cases}$



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

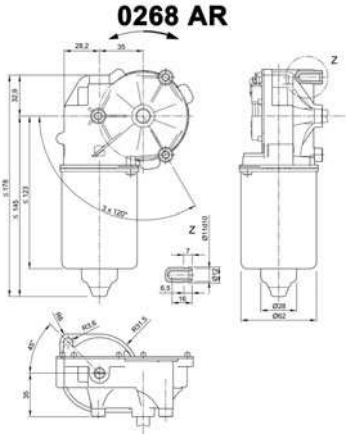
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 60.0 |
| Nominal power [W]                   | $P_N$ | 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  |

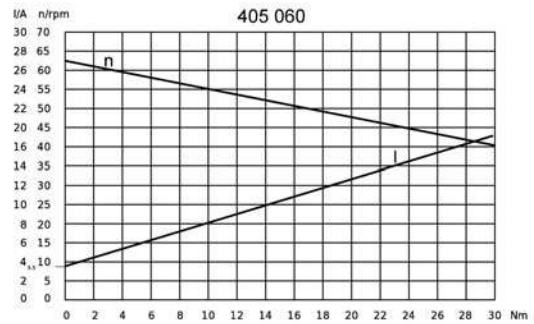
| Other data             |                 |
|------------------------|-----------------|
| Gear ratio             | 91/1            |
| Gear wheel material    | plastic         |
| Suppression components | 3,5 $\mu$ , 1nF |
| Enclosure class        | IP 30           |
| Weight [kg]            | 0.000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

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

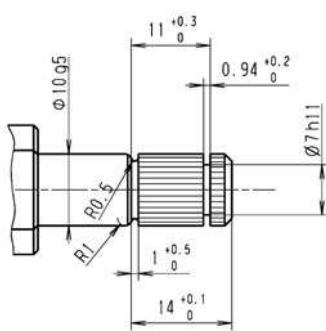
**Characteristic curves**



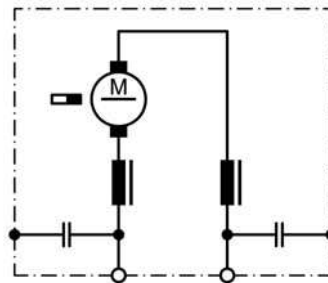
**Motor picture**



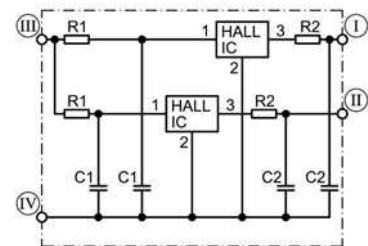
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



S 30



S 141



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



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

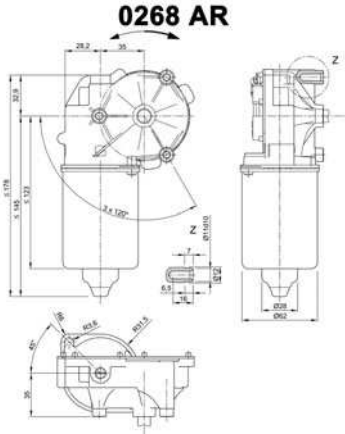
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 3.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 240.0 |
| Nominal power [W]                   | $P_N$ | 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    |

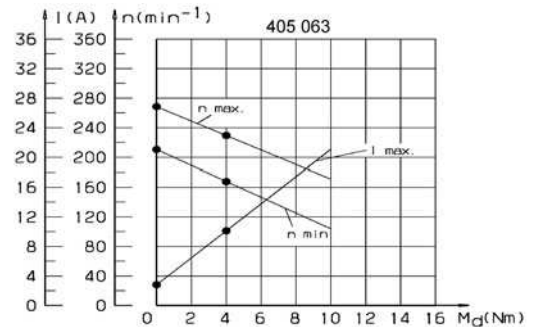
| Other data             |                               |
|------------------------|-------------------------------|
| Gear ratio             | 70/4                          |
| Gear wheel material    | plastic                       |
| Suppression components | $6\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 30                         |
| Weight [kg]            | 1.366                         |

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

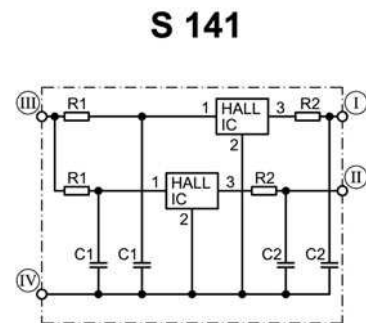
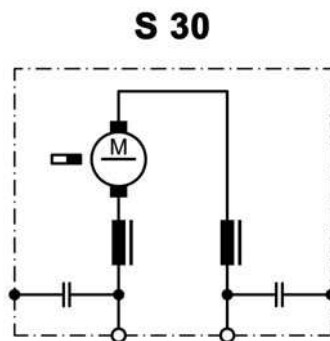
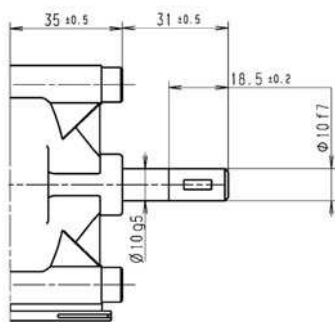
**Characteristic curves**



**Motor picture**



**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





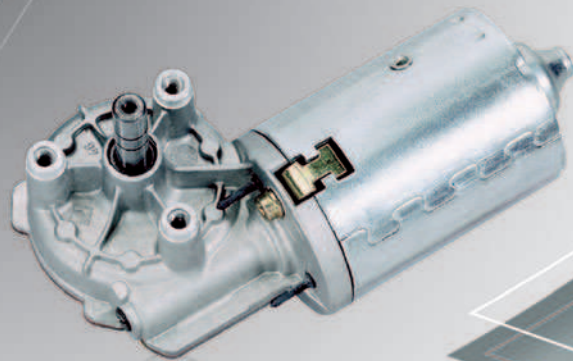




NIDEC MOTORS & ACTUATORS ❖❖❖ MOTOR SERIES

# 0270 (SWMK)

❖❖❖ DC MOTORS WITH WORM GEAR

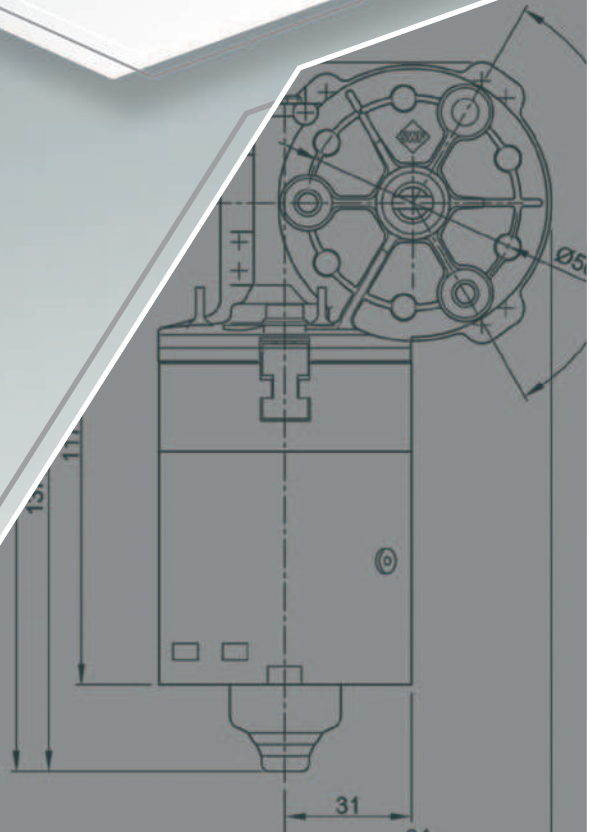


## ❖❖❖ TECHNICAL DESCRIPTION

|                       |                             |
|-----------------------|-----------------------------|
| 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



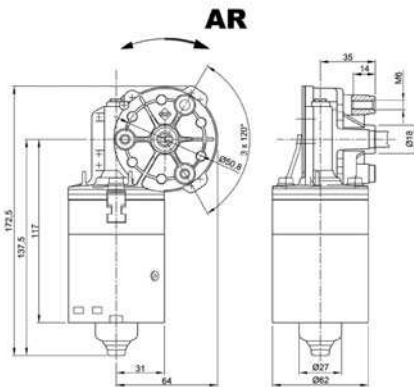
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 4.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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   |

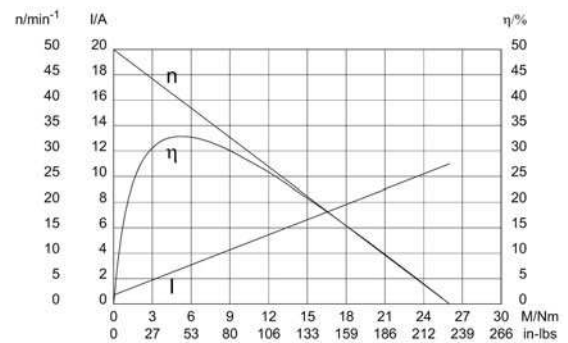
Remarks:



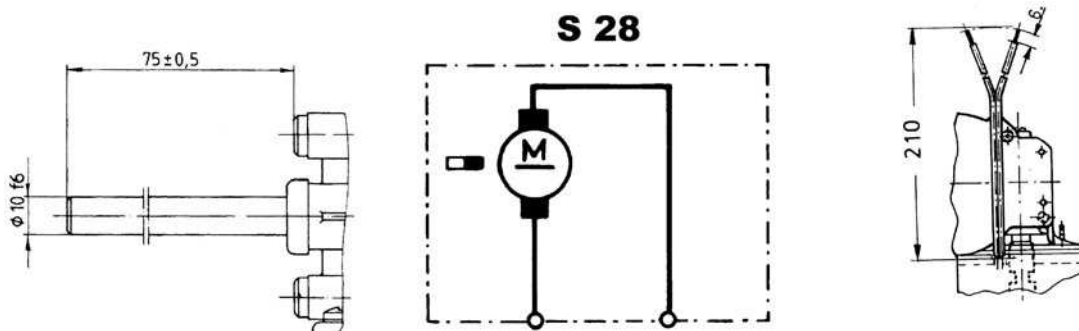
**Motor picture**



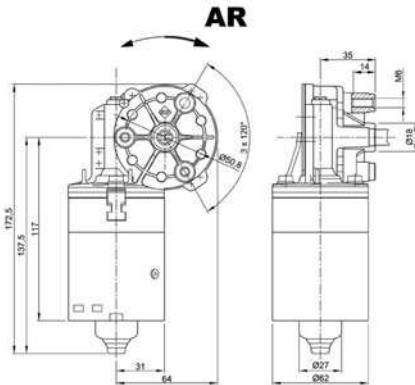
**Characteristic curves**



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



| 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 [ $\text{min}^{-1}$ ] | $n_0$ | 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 |

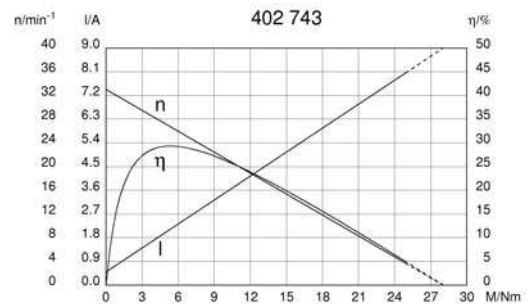
| Other data             |             |
|------------------------|-------------|
| Gear ratio             | 69/1        |
| Gear wheel material    | Plastic     |
| Suppression components | 4.7 $\mu$ H |
| Enclosure class        | IP30        |
| Weight [kg]            | 1.200       |

Remarks:

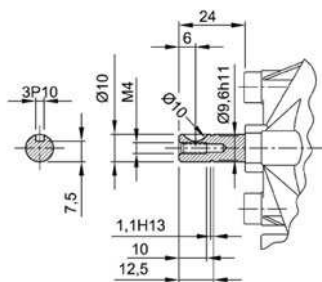
**Motor picture**



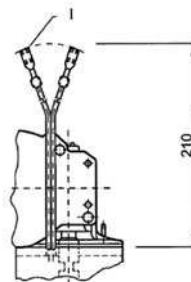
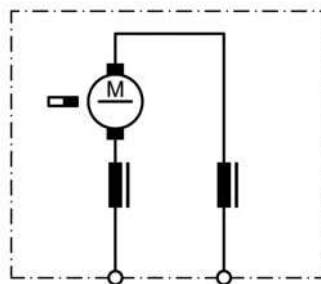
**Characteristic curves**



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



**S 27**



I: Spade connector 2.8 x 0.8 DIN 46 247



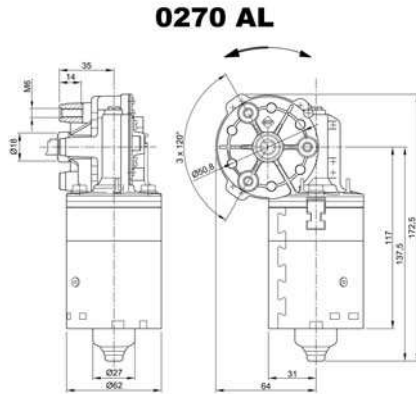
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 1.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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   |

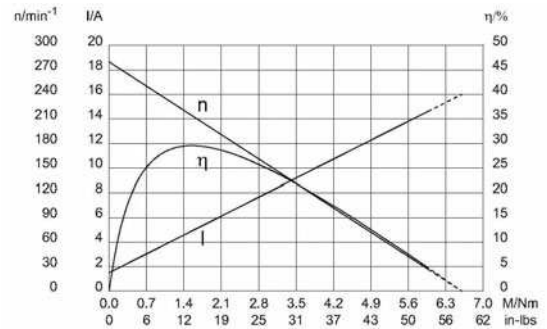
Remarks:



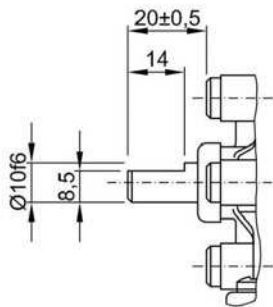
**Motor picture**



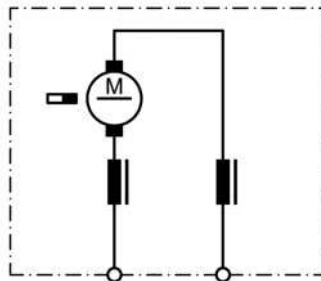
**Characteristic curves**



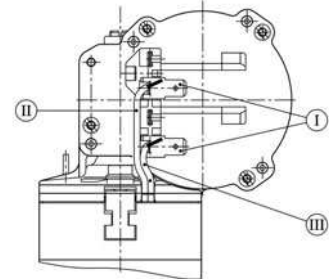
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**S 27**



**K 42**



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









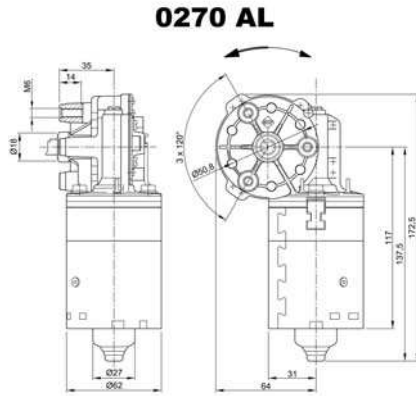
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                   |       |       |
|------------------------------------|-------|-------|
| Rated voltage [V]                  | $U_N$ | 24    |
| Nominal torque [Nm]                | $M_N$ | 0.80  |
| No-load speed [min <sup>-1</sup> ] | $n_0$ | 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   |

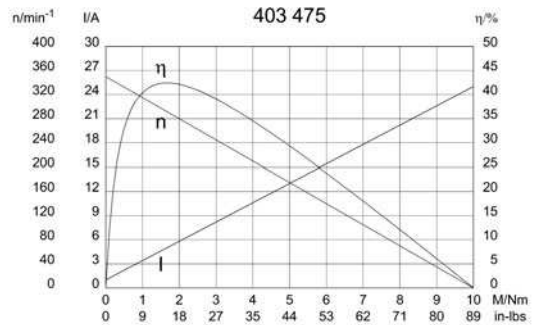
Remarks:



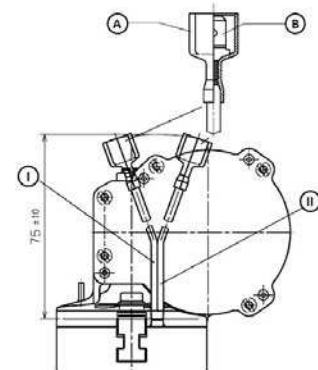
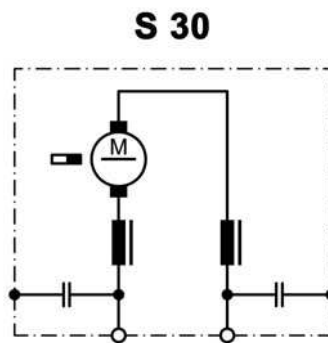
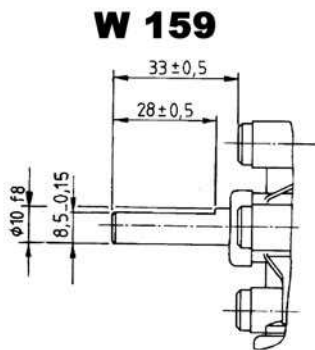
**Motor picture**



**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

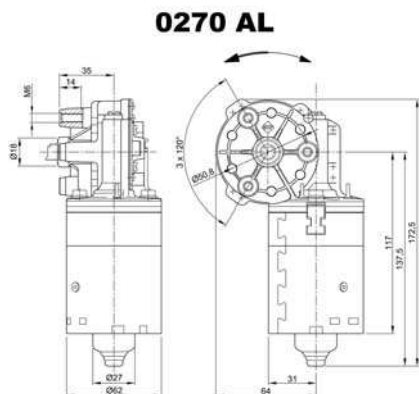
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4.7 $\mu\text{H}$ , 1nF |
| Enclosure class        | IP30                    |
| Weight [kg]            | 1.200                   |

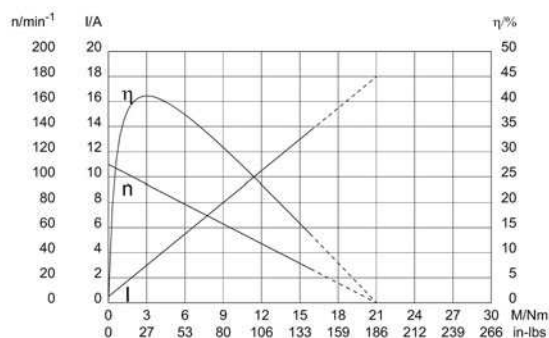
Remarks:



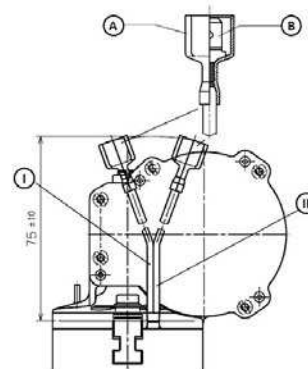
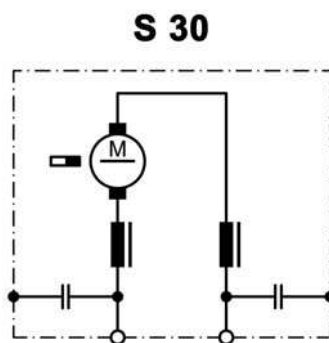
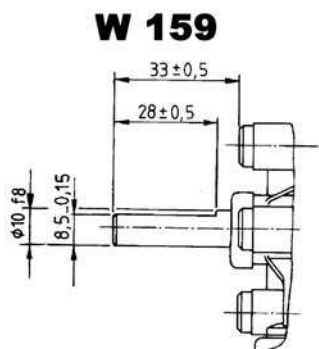
**Motor picture**



**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

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

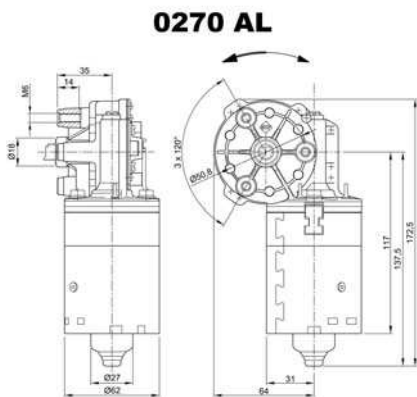
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 12    |
| Nominal torque [Nm]                 | $M_N$ | 1.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 260.0 |
| Nominal power [W]                   | $P_N$ | 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 |

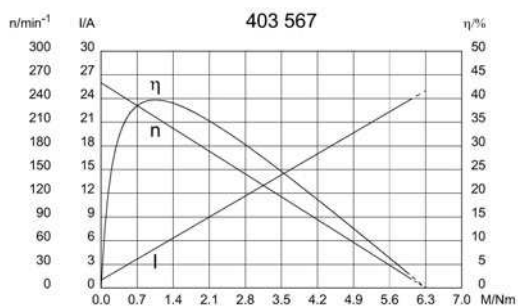
| Other data             |         |
|------------------------|---------|
| Gear ratio             | 41/4    |
| Gear wheel material    | Plastic |
| Suppression components |         |
| Enclosure class        |         |
| Weight [kg]            | 1.200   |

Remarks:

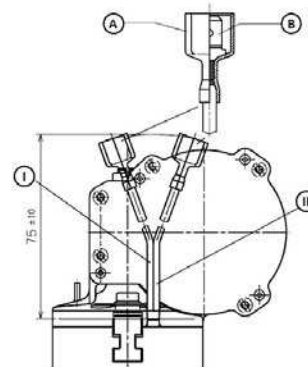
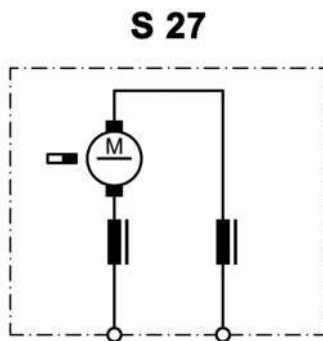
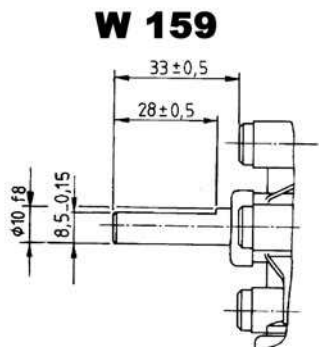
**Characteristic curves**



**Motor picture**



**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

**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 [ $\text{min}^{-1}$ ] | $n_0$ | 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   |

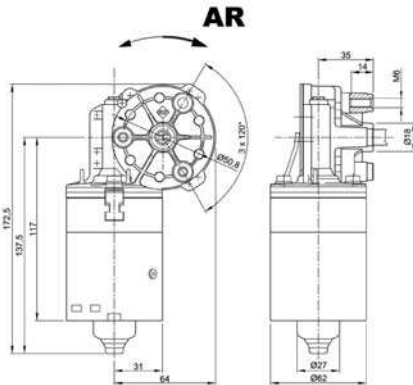
**Sensor data**

|                 |   |
|-----------------|---|
| Pulses          | 0 |
| Output channels | 0 |

**Other data**

|                        |                        |
|------------------------|------------------------|
| Gear ratio             | 69/1                   |
| Gear wheel material    | Plastic                |
| Suppression components | 4.7 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP30                   |
| Weight [kg]            | 1.200                  |

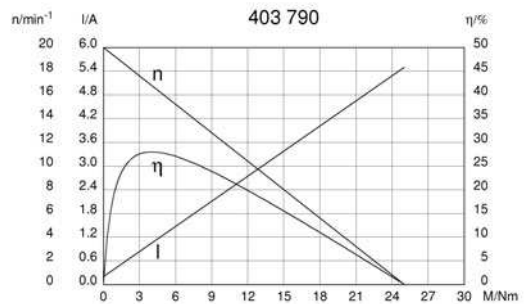
Remarks:



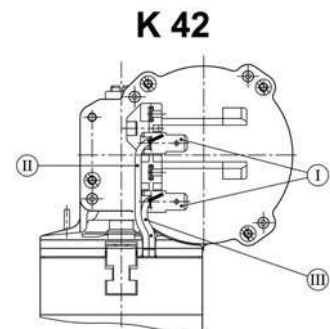
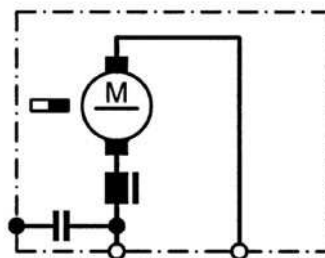
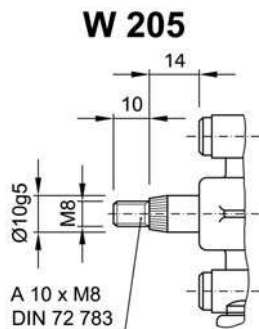
**Motor picture**



**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

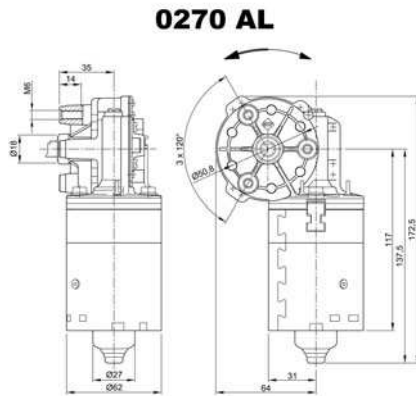
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 1.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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    |

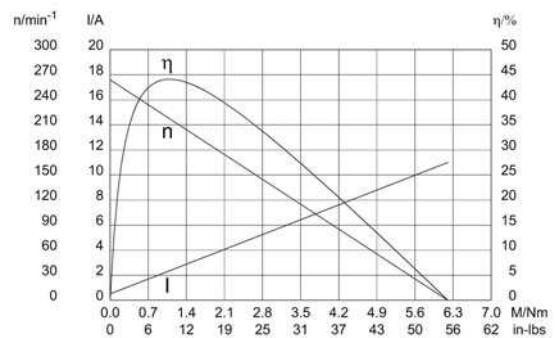
| Sensor data     |       |
|-----------------|-------|
| Pulses          | 10.25 |
| Output channels | 1     |

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

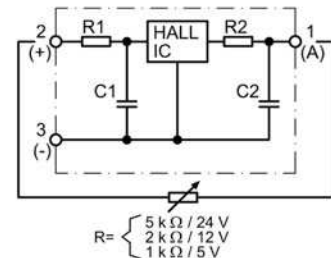
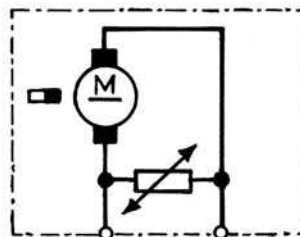
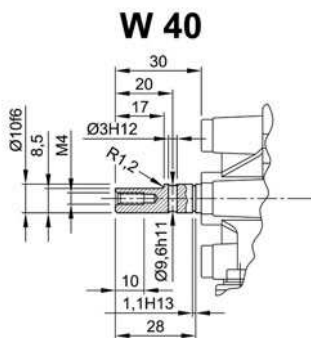
Remarks:



**Motor picture**



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



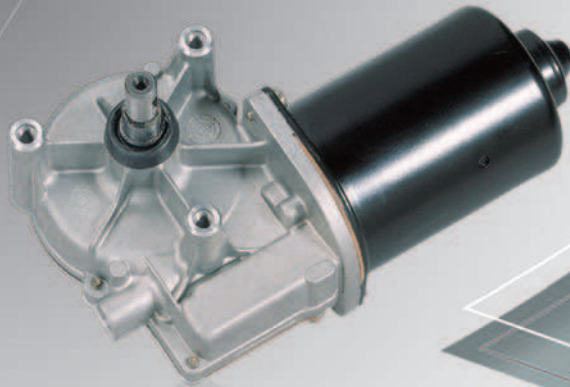




NIDEC MOTORS & ACTUATORS ❖❖❖ MOTOR SERIES

# 0277 (SW2K)

❖❖❖ DC MOTORS WITH WORM GEAR

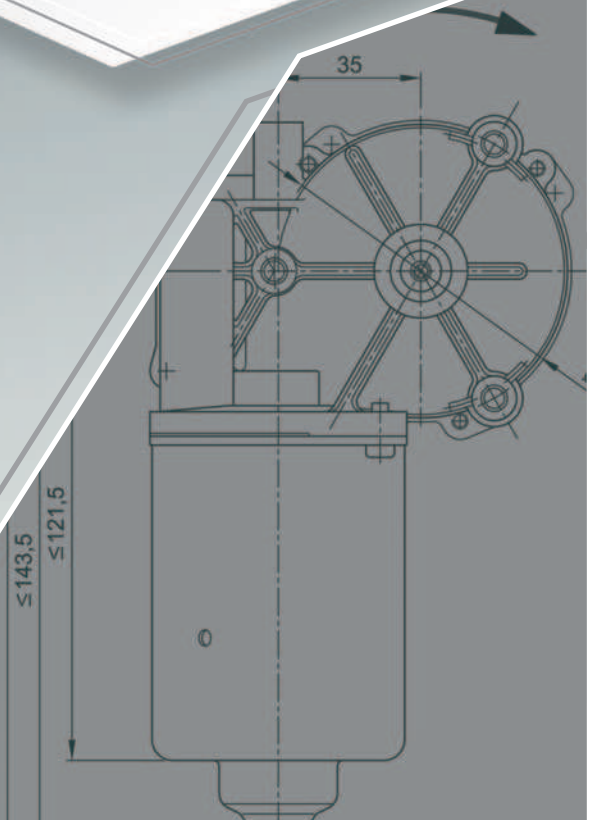


## ❖❖❖ TECHNICAL DESCRIPTION

|                       |                                  |
|-----------------------|----------------------------------|
| 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



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

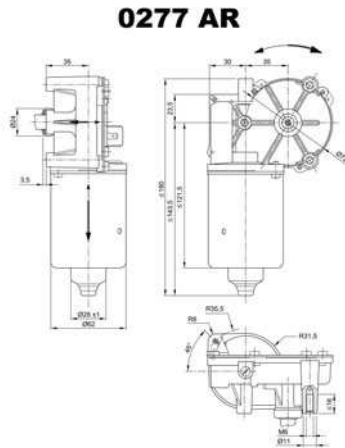
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 40.0 |
| Nominal power [W]                   | $P_N$ | 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 |

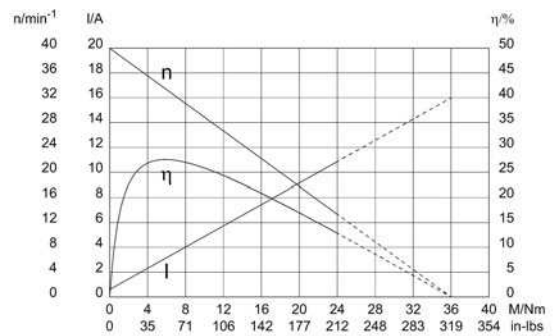
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 78/1             |
| Gear wheel material    | Plastic          |
| Suppression components | 4.7 $\mu$ H, 1nF |
| Enclosure class        | IP40             |
| Weight [kg]            | 1.200            |

Remarks: Ball bearing

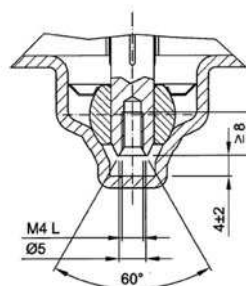
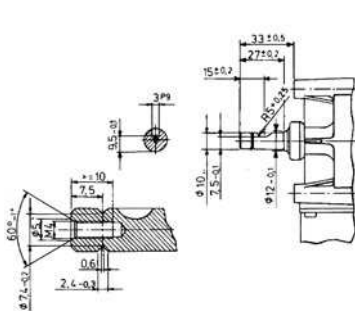
**Characteristic curves**



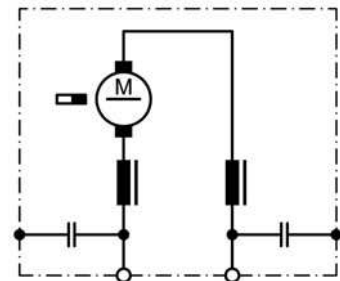
**Motor picture**



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



**S 30**



! Lefthand thread





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

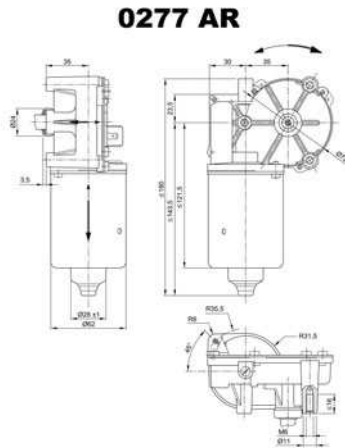
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 230.0 |
| Nominal power [W]                   | $P_N$ | 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 |

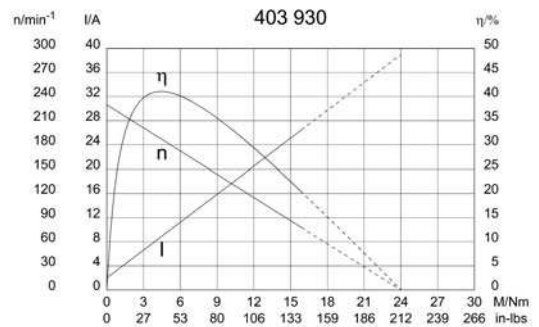
| Other data             |         |
|------------------------|---------|
| Gear ratio             | 70/4    |
| Gear wheel material    | plastic |
| Suppression components | ""      |
| Enclosure class        | IP 40   |
| Weight [kg]            | 1.200   |

Remarks: Ball bearing

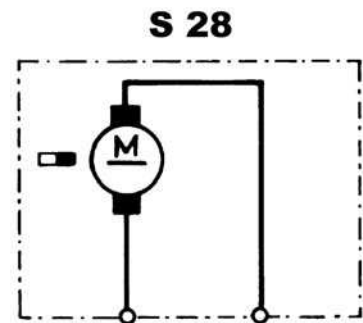
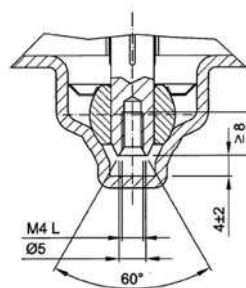
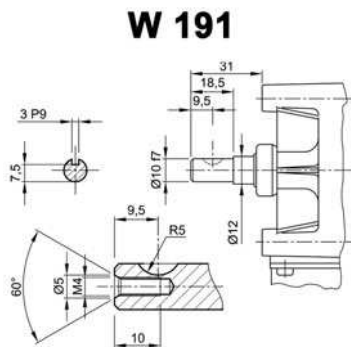
**Characteristic curves**



**Motor picture**



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



! Lefthand thread



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

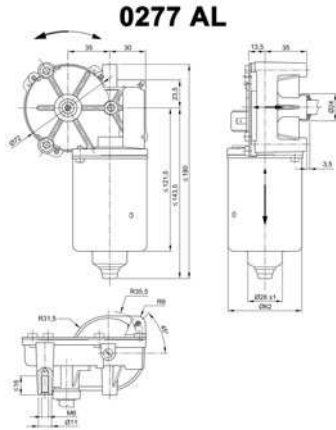
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 126.0 |
| Nominal power [W]                   | $P_N$ | 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 |

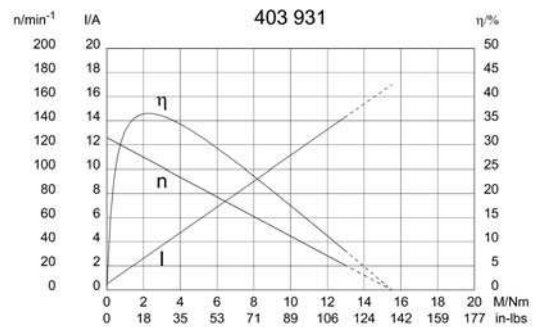
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 70/4             |
| Gear wheel material    | plastic          |
| Suppression components | 4.7 $\mu$ H, 1nF |
| Enclosure class        | IP 40            |
| Weight [kg]            | 1.200            |

Remarks: Ball bearing

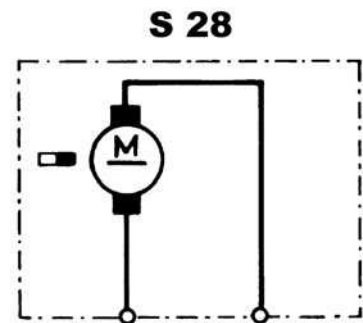
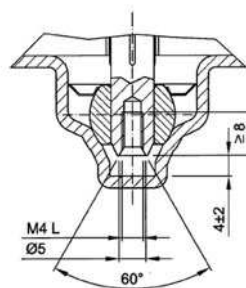
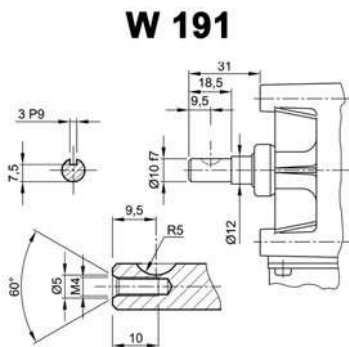
**Characteristic curves**



**Motor picture**



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



! Lefthand thread



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

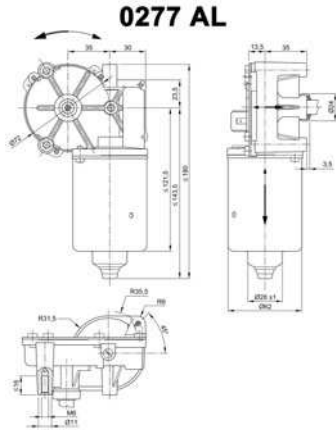
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 2.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 230.0 |
| Nominal power [W]                   | $P_N$ | 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 |

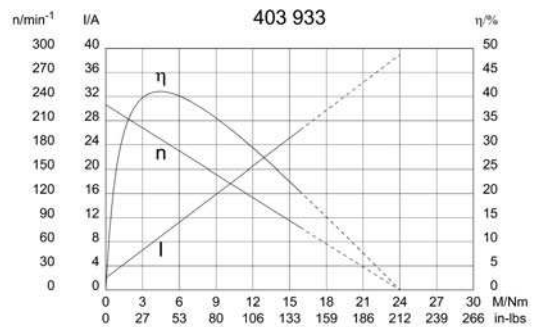
| Other data             |         |
|------------------------|---------|
| Gear ratio             | 70/4    |
| Gear wheel material    | plastic |
| Suppression components | ""      |
| Enclosure class        | IP 40   |
| Weight [kg]            | 1.200   |

Remarks: Ball bearing

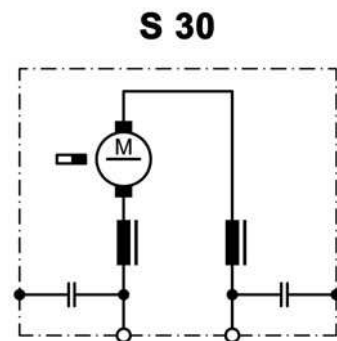
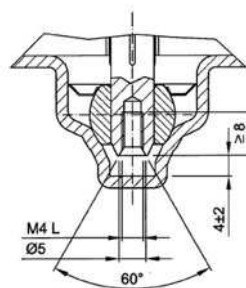
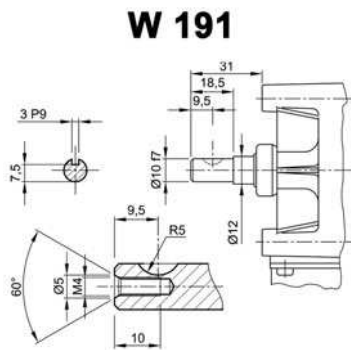
**Characteristic curves**



**Motor picture**



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



! Lefthand thread



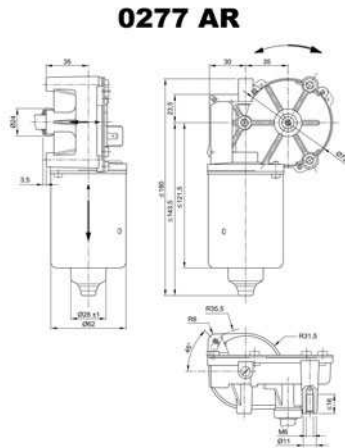
| Design Data           |                |
|-----------------------|----------------|
| Commutation           | Brushed        |
| Direction of rotation | Bi-directional |
| Bearing type          |                |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | $5\mu\text{H}$ , $1\text{nF}$ |
| Enclosure class        | IP 40                         |
| Weight [kg]            | 1.200                         |

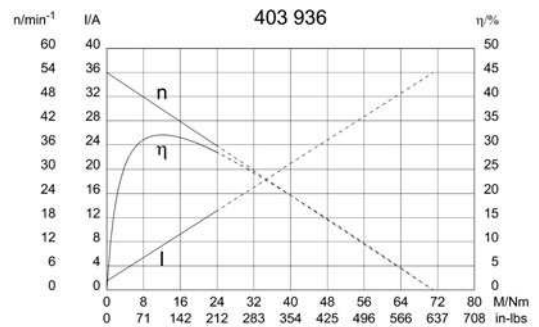
Remarks:



**Motor picture**

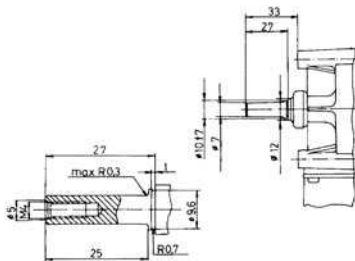


**Characteristic curves**

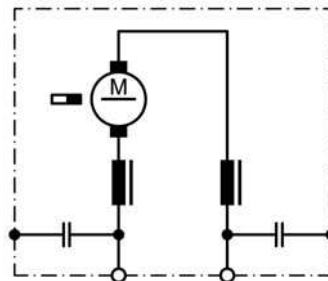


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

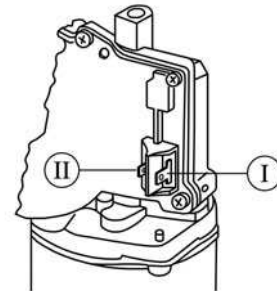
**W 194**



**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



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

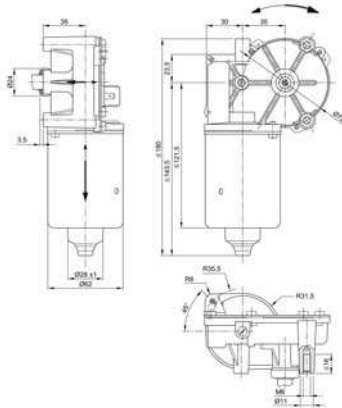
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 40.0 |
| Nominal power [W]                   | $P_N$ | 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:

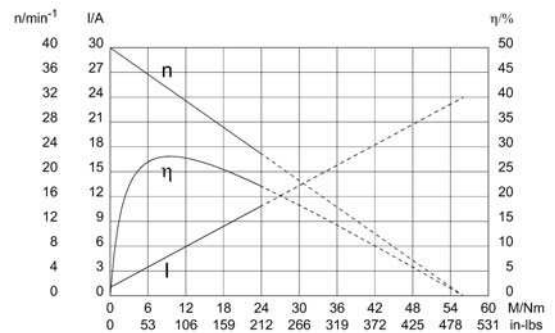
**0277 AR**



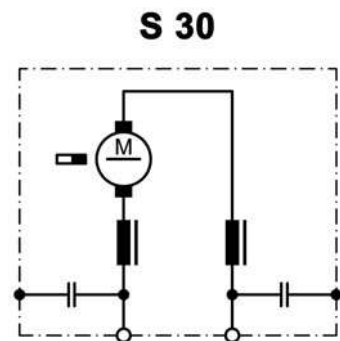
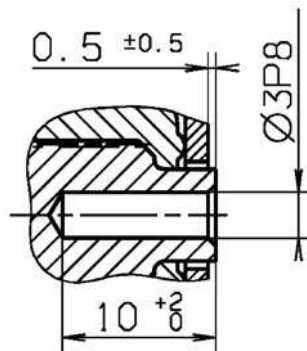
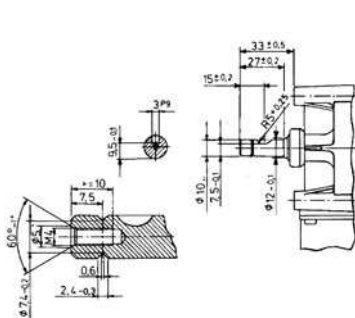
**Motor picture**



**Characteristic curves**



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





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

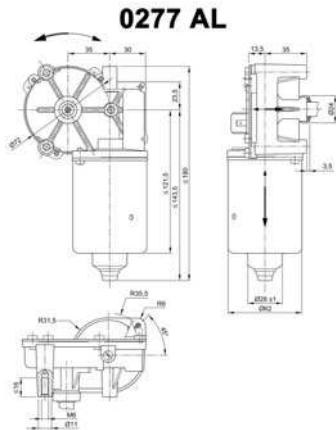
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 65.0 |
| Nominal power [W]                   | $P_N$ | 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 |

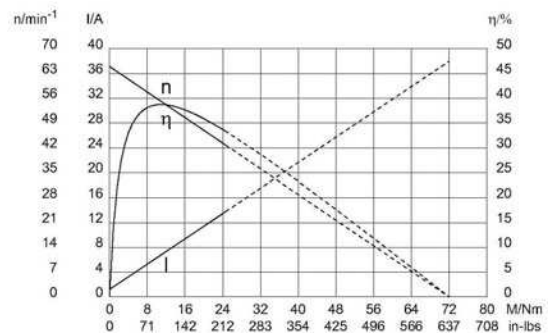
| Other data             |                         |
|------------------------|-------------------------|
| Gear ratio             | 63/1                    |
| Gear wheel material    | Plastic                 |
| Suppression components | 4.7 $\mu\text{H}$ , 1nF |
| Enclosure class        | IP40                    |
| Weight [kg]            | 1.200                   |

Remarks: Ball bearing

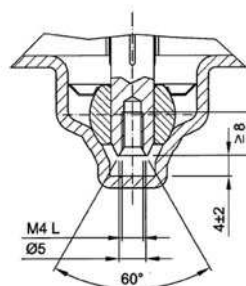
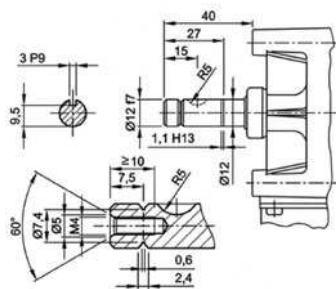
**Characteristic curves**



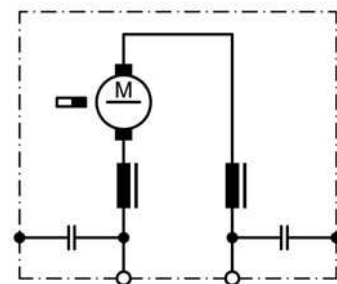
**Motor picture**



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



**S 30**



! Lefthand thread



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

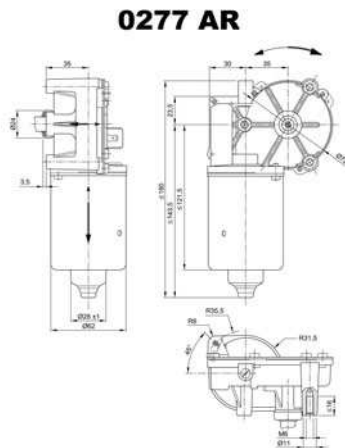
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 65.0 |
| Nominal power [W]                   | $P_N$ | 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 |

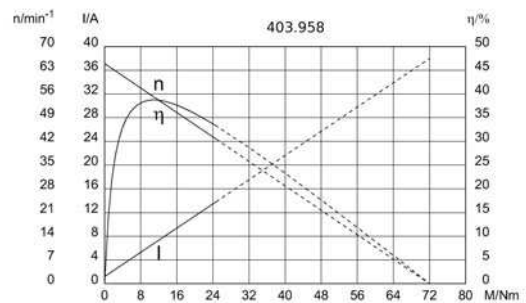
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 63/1             |
| Gear wheel material    | Plastic          |
| Suppression components | 4.7 $\mu$ H, 1nF |
| Enclosure class        | IP40             |
| Weight [kg]            | 1.200            |

Remarks: Ball bearing

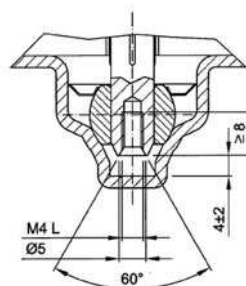
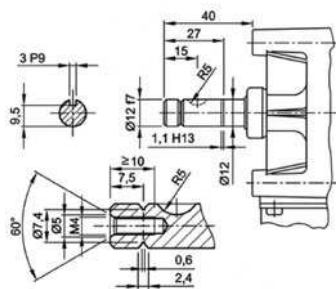
**Characteristic curves**



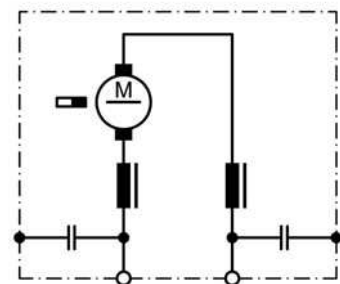
**Motor picture**



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



**S 30**



! Lefthand thread



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

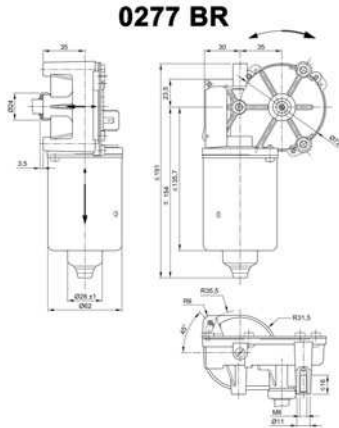
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 12    |
| Nominal torque [Nm]                 | $M_N$ | 3.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 270.0 |
| Nominal power [W]                   | $P_N$ | 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 |

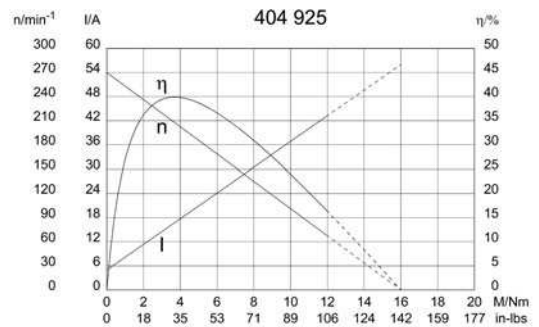
| Other data             |                        |
|------------------------|------------------------|
| Gear ratio             | 70/4                   |
| Gear wheel material    | plastic                |
| Suppression components | 1.9 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP 40                  |
| Weight [kg]            | 1.200                  |

Remarks: Ball bearing

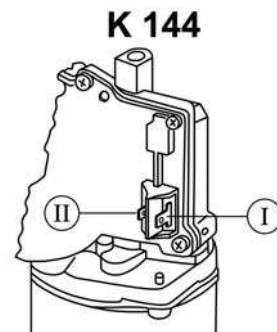
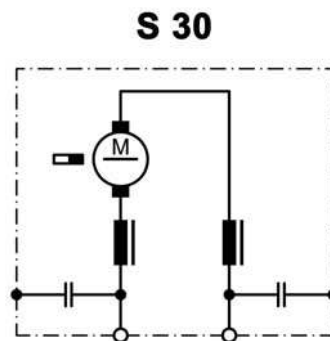
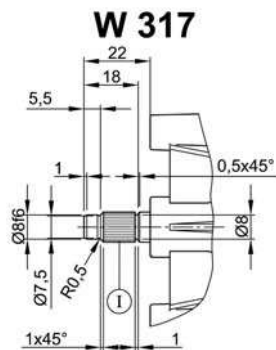
**Characteristic curves**



**Motor picture**



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



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**

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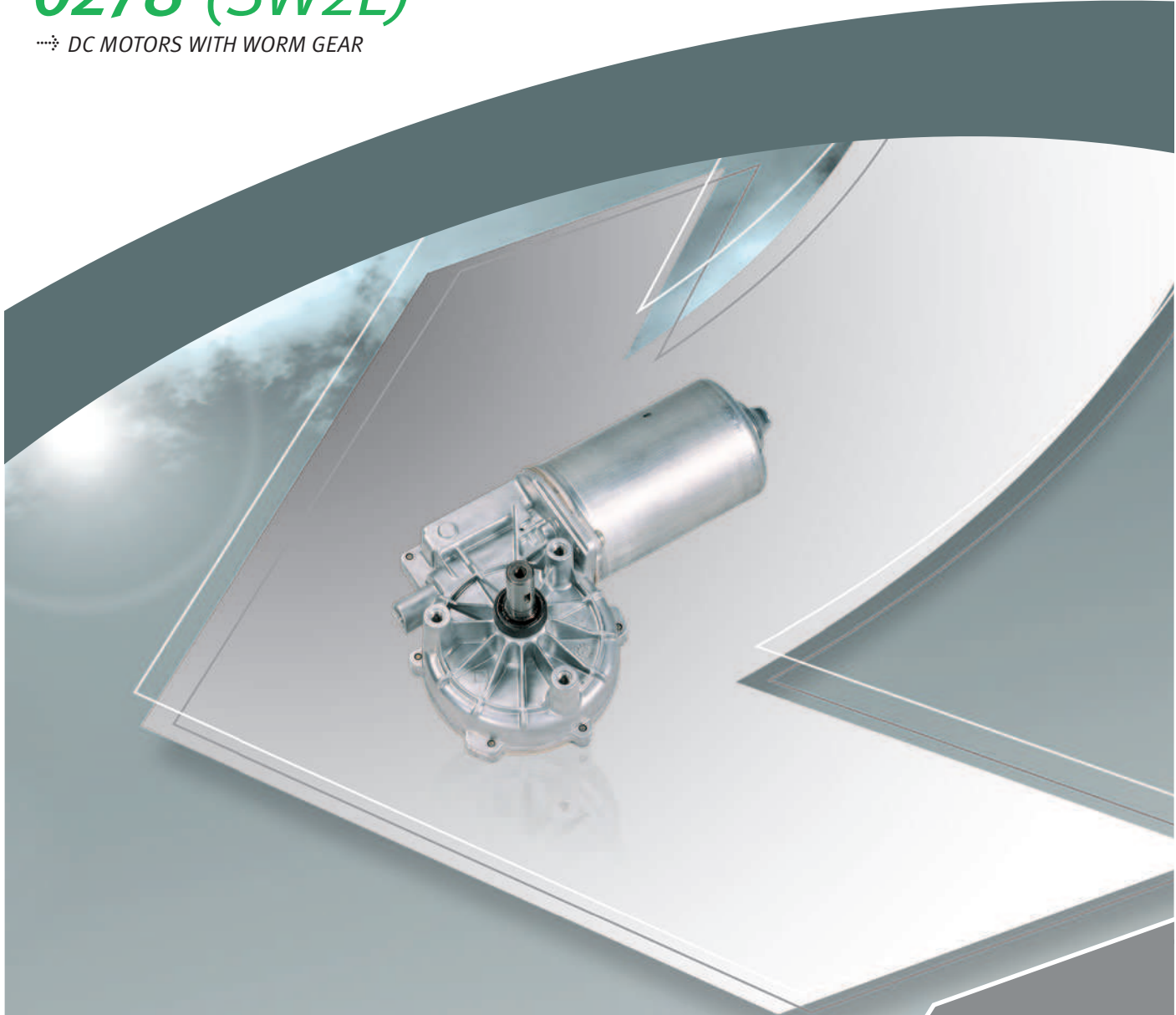




NIDEC MOTORS & ACTUATORS ❖❖❖ MOTOR SERIES

# 0278 (SW2L)

❖❖❖ DC MOTORS WITH WORM GEAR

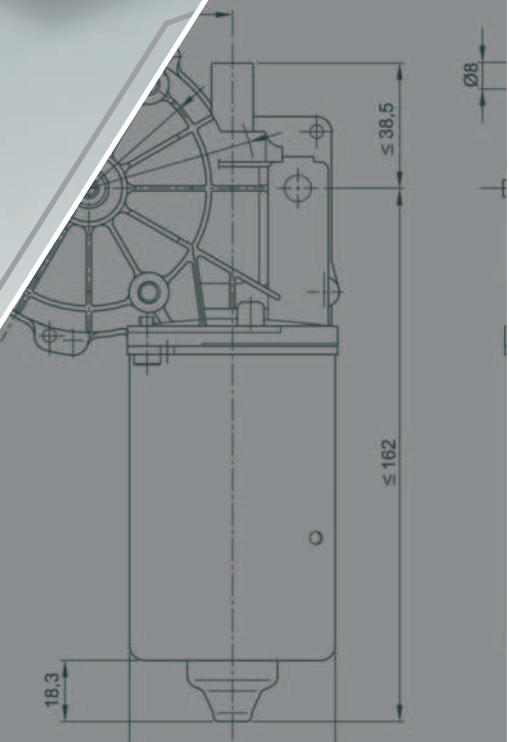


## ❖❖❖ TECHNICAL DESCRIPTION

|                       |                                  |
|-----------------------|----------------------------------|
| 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



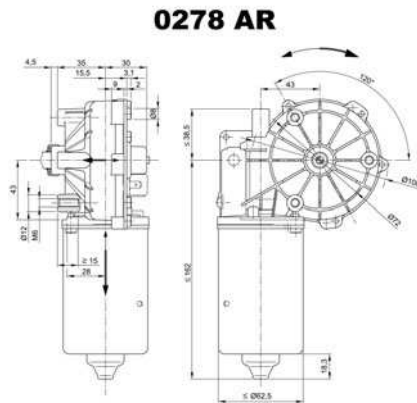
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4,7 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP40                   |
| Weight [kg]            | 1.716                  |

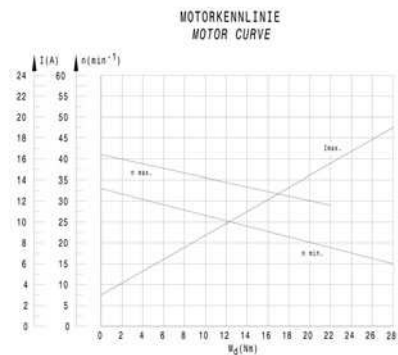
Remarks:



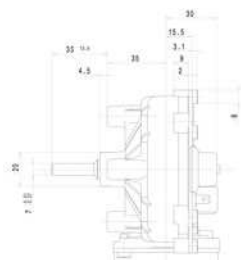
**Motor picture**



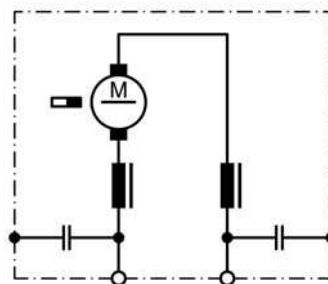
**Characteristic curves**



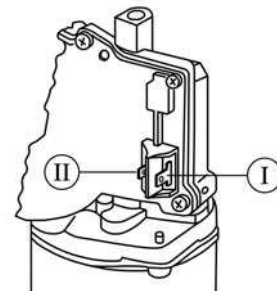
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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

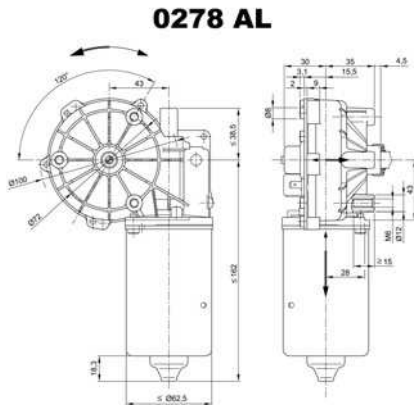
| Design Data           |                     |
|-----------------------|---------------------|
| Commutation           | Brushed             |
| Direction of rotation | Bi-directional      |
| Bearing type          | A: Ball - B: Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4.7 $\mu$ H, 1 $\mu$ F |
| Enclosure class        | IP40                   |
| Weight [kg]            | 1.700                  |

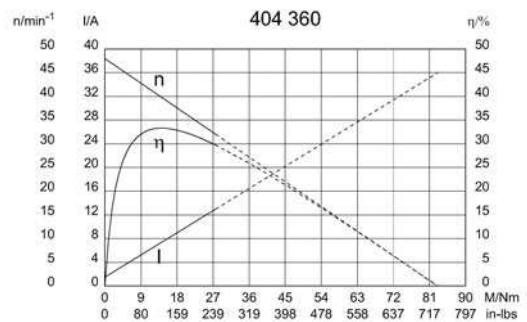
Remarks:



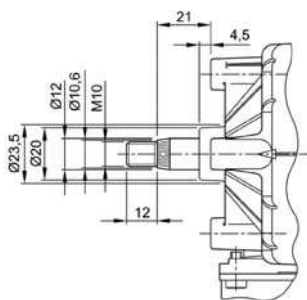
**Motor picture**



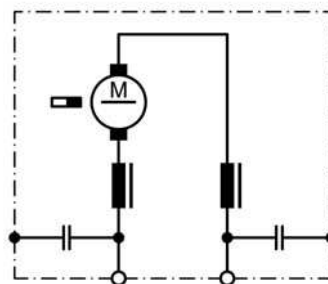
**Characteristic curves**



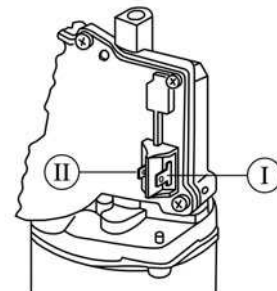
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**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

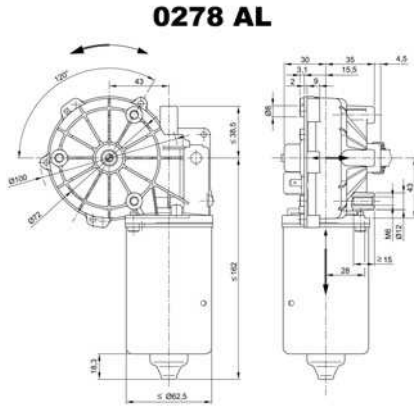
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 4.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4,7 $\mu$ H, 1nF |
| Enclosure class        | IP 40            |
| Weight [kg]            | 1.700            |

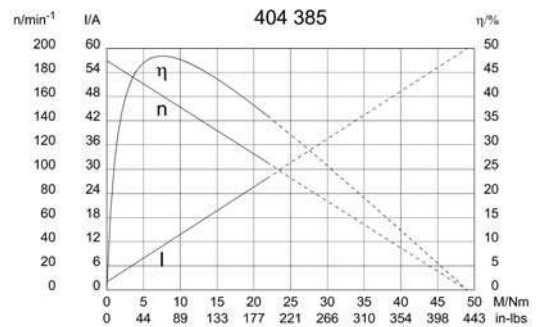
Remarks:



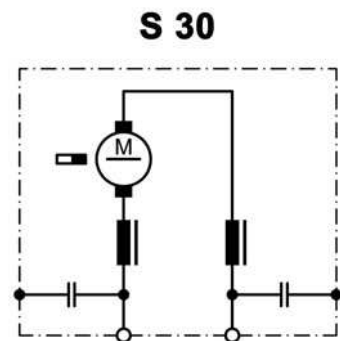
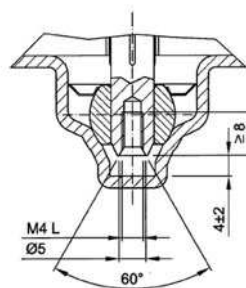
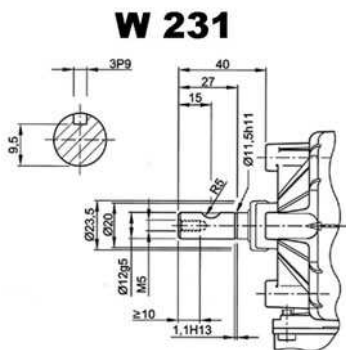
**Motor picture**



**Characteristic curves**



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



! Lefthand thread



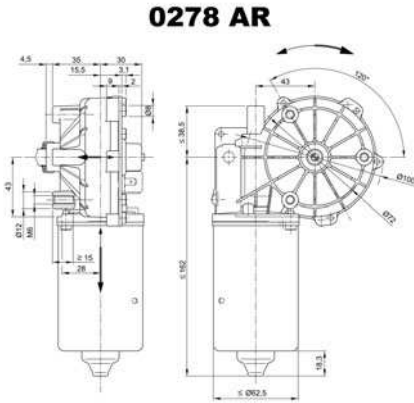
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 4.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4,7 $\mu$ H, 1nF |
| Enclosure class        | IP 40            |
| Weight [kg]            | 1.700            |

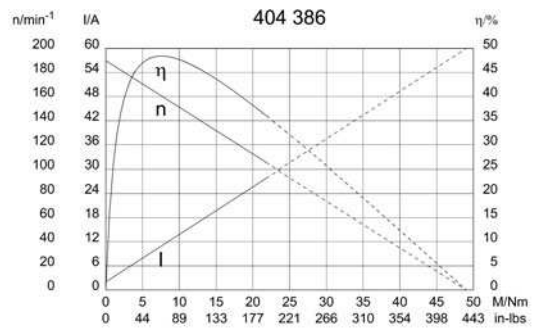
Remarks:



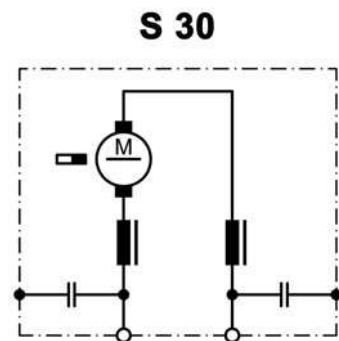
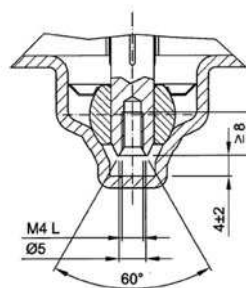
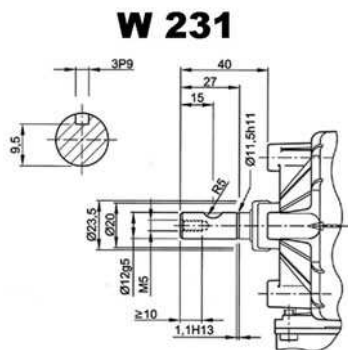
**Motor picture**



**Characteristic curves**



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



! Lefthand thread



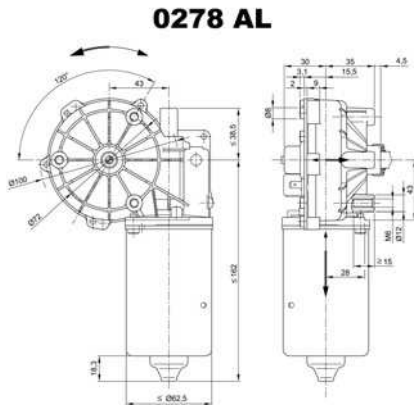
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 4,7 $\mu$ H, 1nF |
| Enclosure class        | IP40             |
| Weight [kg]            | 1.730            |

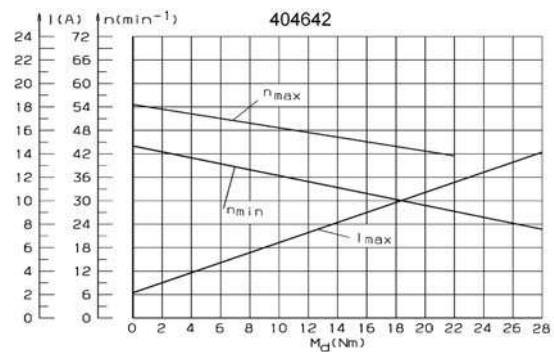
Remarks:



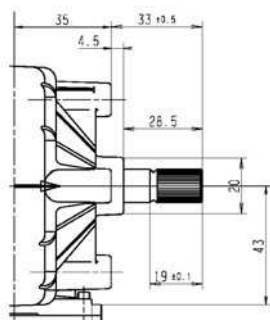
**Motor picture**



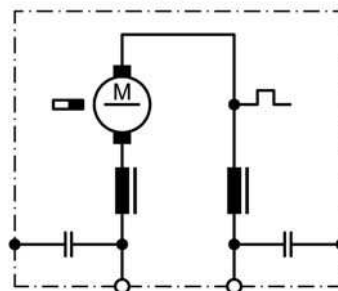
**Characteristic curves**



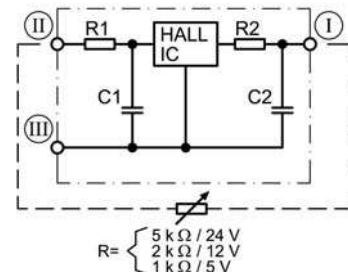
**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**



**S 74**



**S 124**



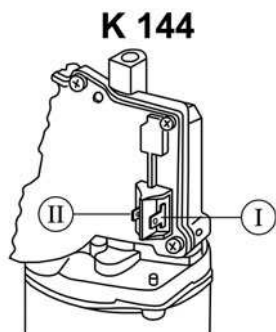
$R = \begin{cases} 5 \text{ k}\Omega / 24 \text{ V} \\ 2 \text{ k}\Omega / 12 \text{ V} \\ 1 \text{ k}\Omega / 5 \text{ V} \end{cases}$

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**

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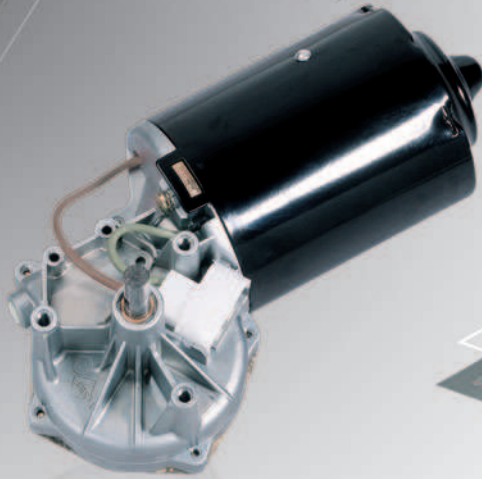




NIDEC MOTORS & ACTUATORS ❖❖❖ MOTOR SERIES

# 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



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

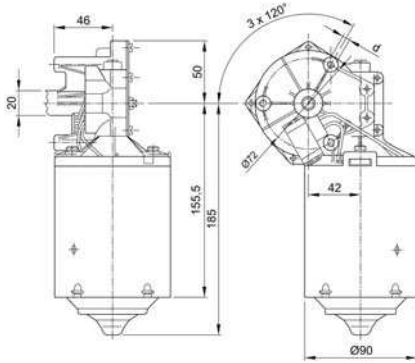
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 67.0 |
| Nominal power [W]                   | $P_N$ | 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:

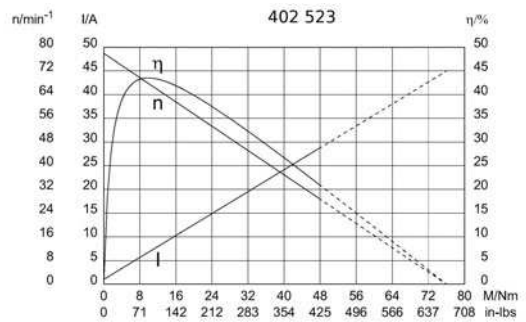
**0291 AL**



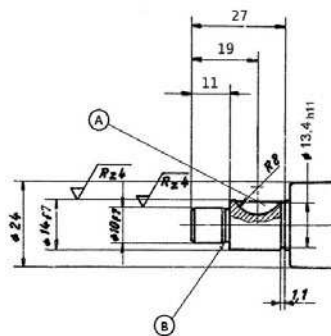
**Motor picture**



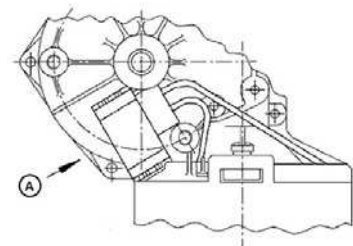
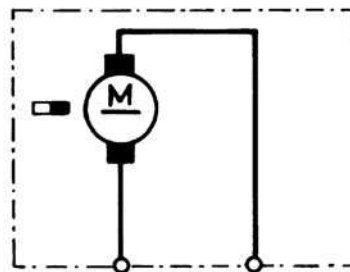
**Characteristic curves**



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



**S 28**



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)

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

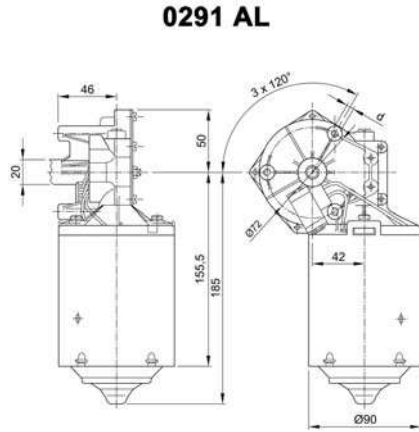
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 78.0 |
| Nominal power [W]                   | $P_N$ | 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 |

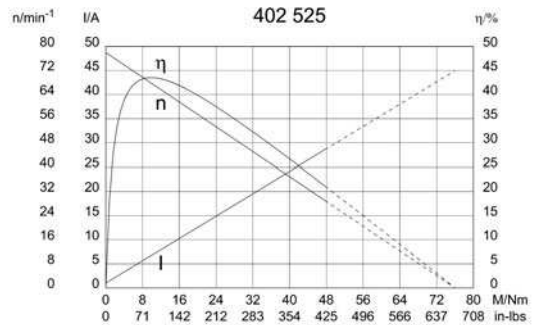
| Other data             |                    |
|------------------------|--------------------|
| Gear ratio             | 46/1               |
| Gear wheel material    | Resinbonded fabric |
| Suppression components |                    |
| Enclosure class        | IP 20              |
| Weight [kg]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

Remarks: d = M6x16mm

**Characteristic curves**

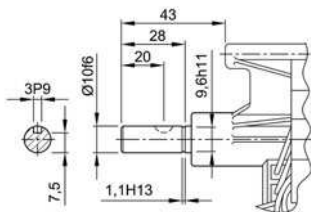


**Motor picture**

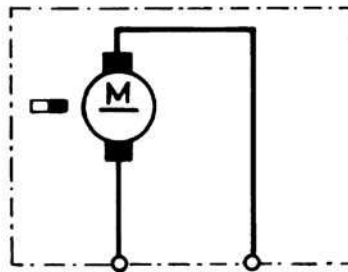


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

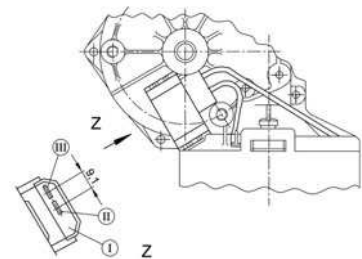
**W 278**



**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.tycoelectronics.com](http://www.tycoelectronics.com)

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

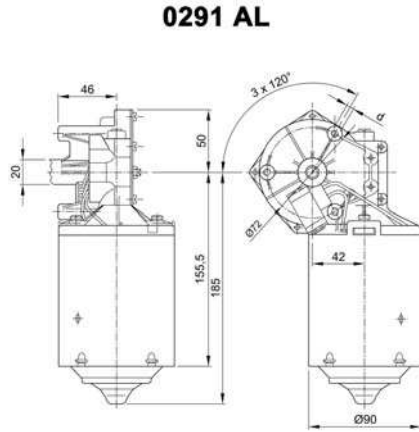
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 12   |
| Nominal torque [Nm]                 | $M_N$ | 6.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 52.0 |
| Nominal power [W]                   | $P_N$ | 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 |

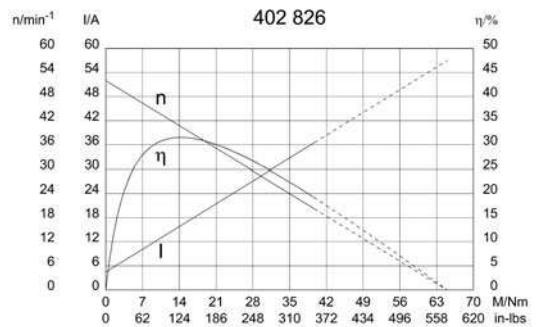
| Other data             |                    |
|------------------------|--------------------|
| Gear ratio             | 59/1               |
| Gear wheel material    | Resinbonded fabric |
| Suppression components |                    |
| Enclosure class        | IP 20              |
| Weight [kg]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

Remarks: d = M6x16mm

**Characteristic curves**

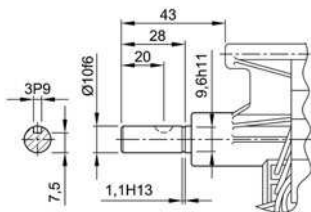


**Motor picture**

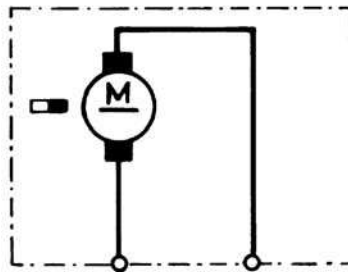


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

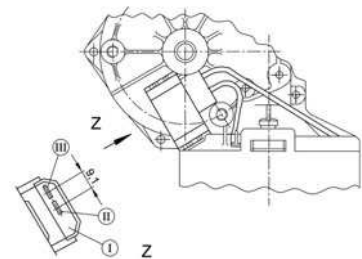
**W 278**



**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.tycoelectronics.com](http://www.tycoelectronics.com)

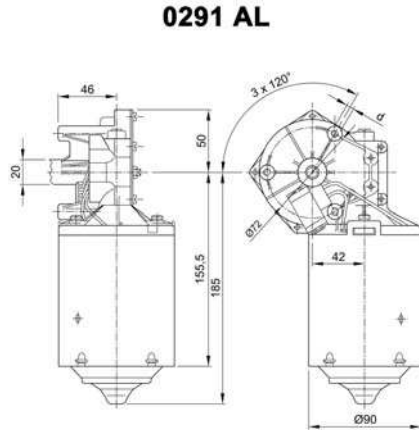
| Design Data           |                     |
|-----------------------|---------------------|
| Commutation           | Brushed             |
| Direction of rotation | Bi-directional      |
| Bearing type          | A: Ball - B: Sleeve |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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 | 5.0 $\mu$ H |
| Enclosure class        | IP20        |
| Weight [kg]            | 2.900       |

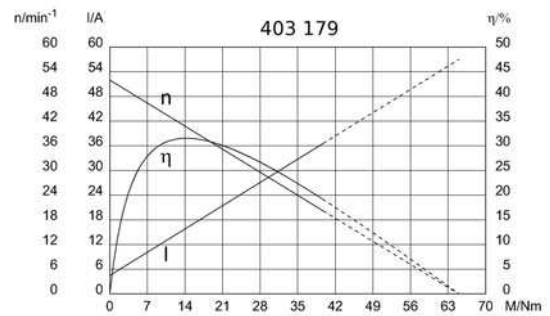
Remarks:



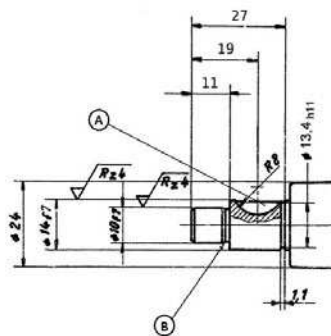
**Motor picture**



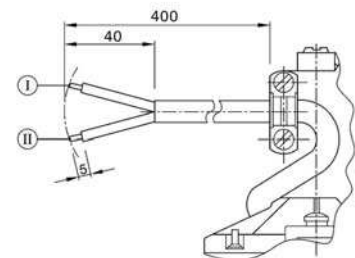
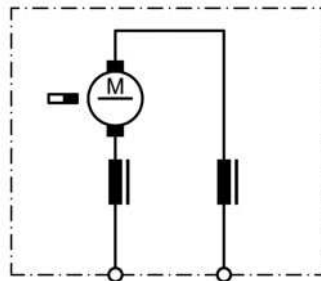
**Characteristic curves**



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



**S 27**



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

I: red  
 II: green

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

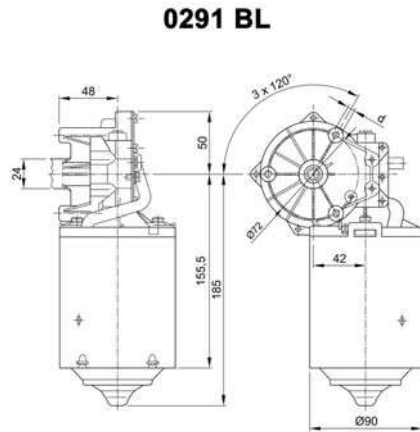
| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 3.00  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 220.0 |
| Nominal power [W]                   | $P_N$ | 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 |

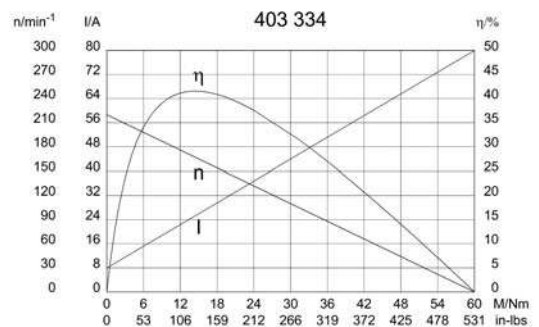
| Other data             |                  |
|------------------------|------------------|
| Gear ratio             | 44/2             |
| Gear wheel material    | plastic          |
| Suppression components | 6,5 $\mu$ H, 1nF |
| Enclosure class        | IP 20            |
| Weight [kg]            | 2.900            |

Remarks: d = M8 x 16 mm

**Characteristic curves**

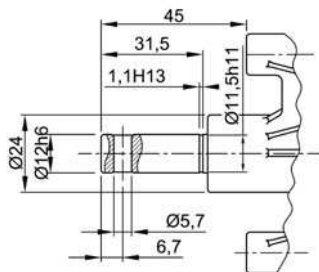


**Motor picture**

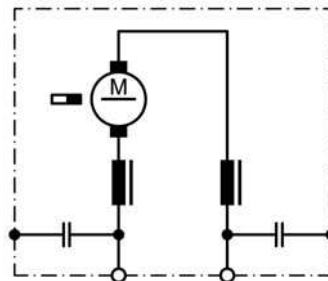


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

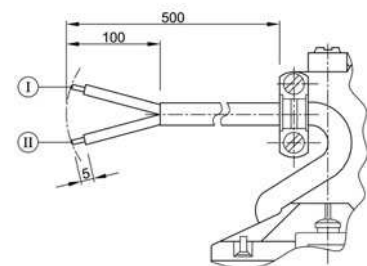
**W 070**



**S 30**



**K 274**



I red  
 II green



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

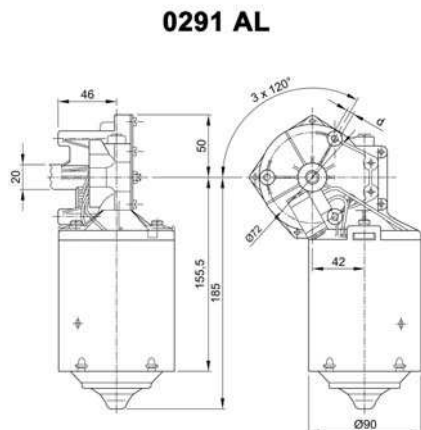
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 5.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 52.0 |
| Nominal power [W]                   | $P_N$ | 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 |

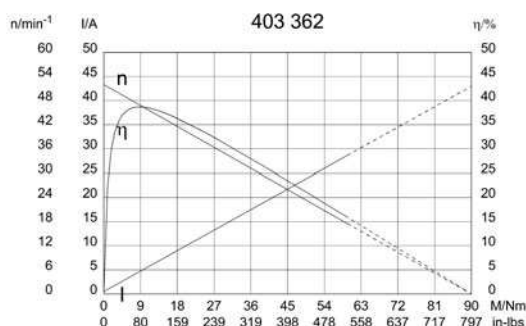
| Other data             |                    |
|------------------------|--------------------|
| Gear ratio             | 59/1               |
| Gear wheel material    | Resinbonded fabric |
| Suppression components |                    |
| Enclosure class        | IP 20              |
| Weight [kg]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

Remarks: d = M8 x 23mm

**Characteristic curves**

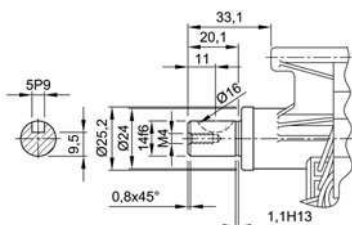


**Motor picture**

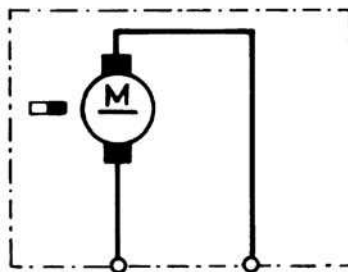


**Output shaft drawing (W), Wiring diagrams (S) and Connector layout (K)**

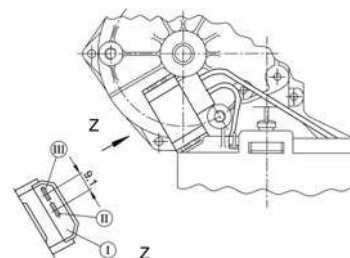
**W 126**



**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.tycoelectronics.com](http://www.tycoelectronics.com)

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

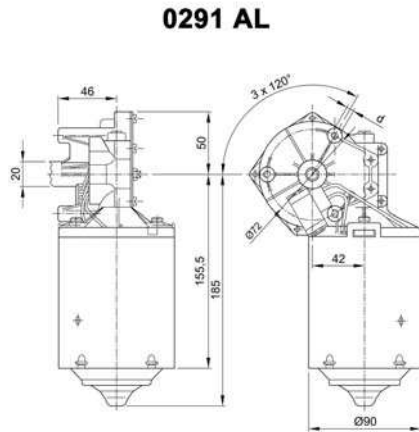
| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 8.00 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 48.0 |
| Nominal power [W]                   | $P_N$ | 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 |

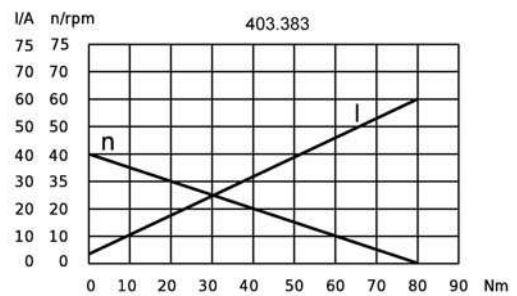
| Other data             |        |
|------------------------|--------|
| Gear ratio             | 46/1   |
| Gear wheel material    | bronze |
| Suppression components |        |
| Enclosure class        | IP20   |
| Weight [kg]            | 2.900  |

Remarks: d=M8x23

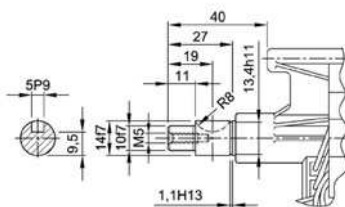
**Characteristic curves**



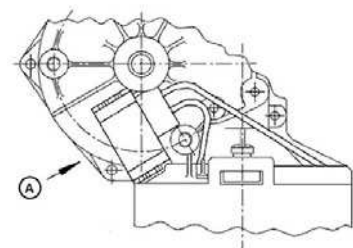
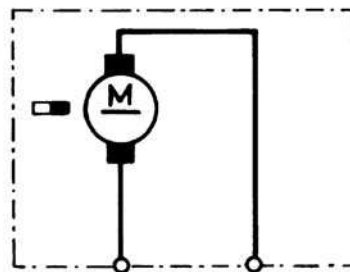
**Motor picture**



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



**S 28**



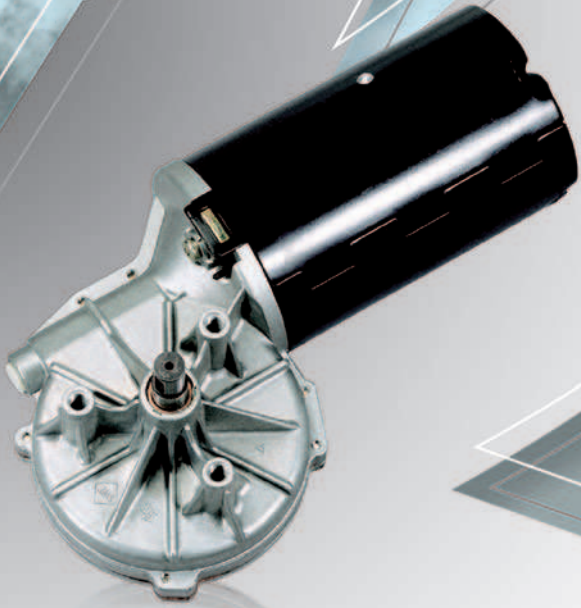
A: spade ends 6.3 x 0.8 (according to DIN 46 244)



NIDEC MOTORS & ACTUATORS ❖❖❖ MOTOR SERIES

# 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



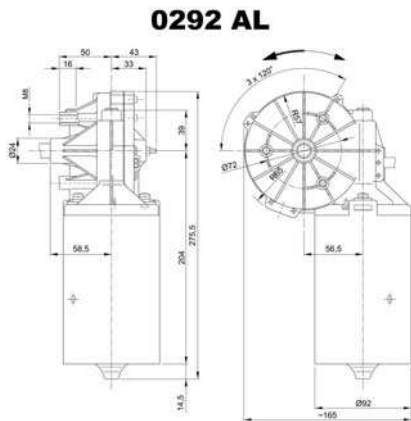
| Design Data           |                 |
|-----------------------|-----------------|
| Commutation           | Brushed         |
| Direction of rotation | Bi-directional  |
| Bearing type          | A:Ball - B:Ball |

| Performance data                    |       |      |
|-------------------------------------|-------|------|
| Rated voltage [V]                   | $U_N$ | 24   |
| Nominal torque [Nm]                 | $M_N$ | 20.0 |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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   |

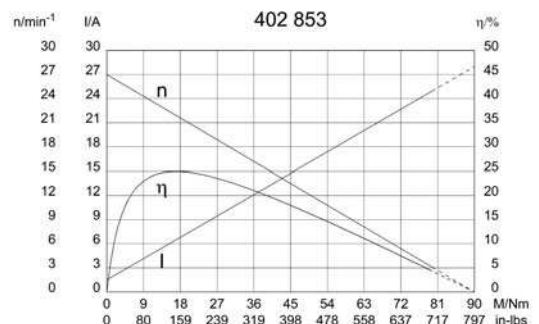
| Sensor data     |   |
|-----------------|---|
| Pulses          | 0 |
| Output channels | 0 |

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

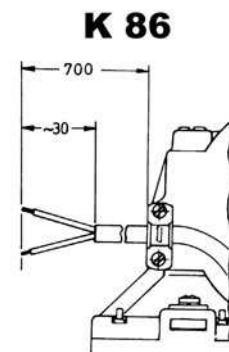
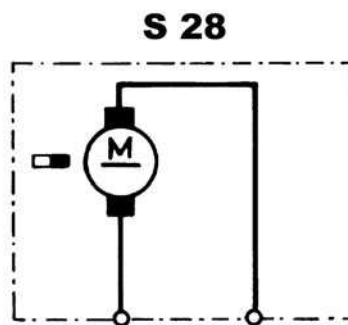
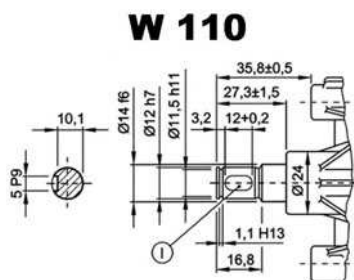
Remarks:



**Motor picture**



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



I Groove for feather key A 5x3x12 DIN 6885

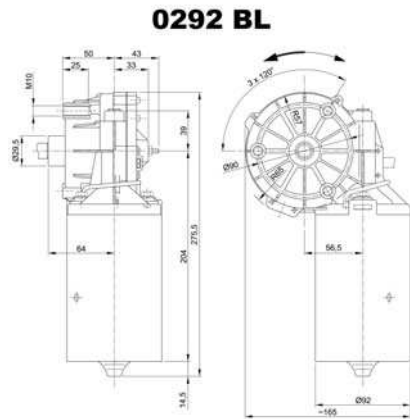
| Design Data           |                   |
|-----------------------|-------------------|
| Commutation           | Brushed           |
| Direction of rotation | Bi-directional    |
| Bearing type          | A:Ball - B:Sleeve |

| Performance data                    |       |       |
|-------------------------------------|-------|-------|
| Rated voltage [V]                   | $U_N$ | 24    |
| Nominal torque [Nm]                 | $M_N$ | 10.0  |
| No-load speed [ $\text{min}^{-1}$ ] | $n_0$ | 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    |

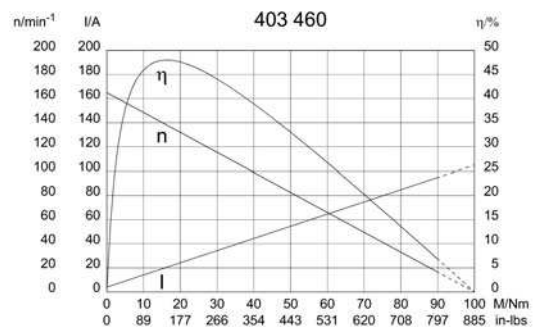
| Sensor data     |   |
|-----------------|---|
| Pulses          | 0 |
| Output channels | 0 |

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

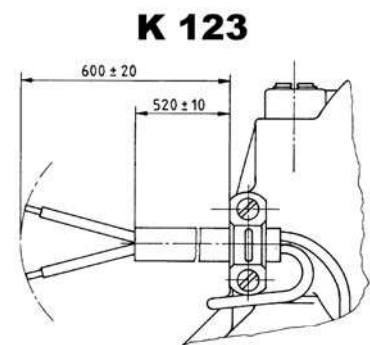
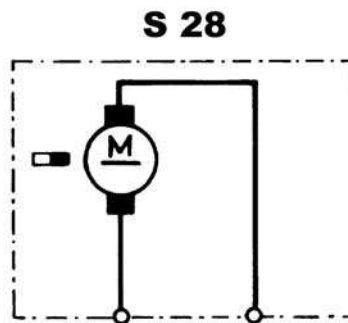
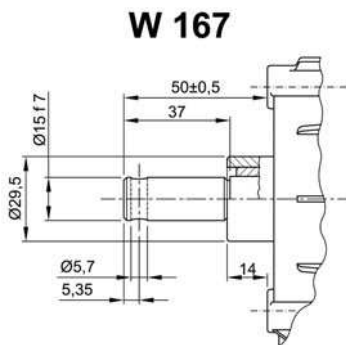
Remarks:



**Motor picture**



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













| <b>Type No.</b> | <b>Page</b> | <b>Type No.</b> | <b>Page</b> | <b>Type No.</b> | <b>Page</b> |
|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| 402 523 .....   | 191         | 404 157 .....   | 68          | 404 905 .....   | 55          |
| 402 525 .....   | 192         | 404 166 .....   | 69          | 404 907 .....   | 57          |
| 402 600 .....   | 149         | 404 203 .....   | 160         | 404 910 .....   | 75          |
| 402 743 .....   | 150         | 404 284 .....   | 17          | 404 925 .....   | 179         |
| 402 757 .....   | 35          | 404 326 .....   | 38          | 404 938 .....   | 135         |
| 402 781 .....   | 36          | 404 327 .....   | 39          | 404 961 .....   | 111         |
| 402 826 .....   | 193         | 404 360 .....   | 182         | 404 965 .....   | 30          |
| 402 853 .....   | 199         | 404 382 .....   | 18          | 404 966 .....   | 31          |
| 402 887 .....   | 151         | 404 384 .....   | 19          | 404 967 .....   | 32          |
| 402 907 .....   | 37          | 404 385 .....   | 183         | 404 980 .....   | 59          |
| 402 944 .....   | 7           | 404 386 .....   | 185         | 404 983 .....   | 135         |
|                 |             | 404 465 .....   | 41          | 404 987 .....   | 112         |
| 403 179 .....   | 194         | 404 469 .....   | 25          | 404 988 .....   | 114         |
| 403 187 .....   | 8           | 404 476 .....   | 9           | 404 990 .....   | 116         |
| 403 194 .....   | 79          | 404 536 .....   | 26          | 404 991 .....   | 118         |
| 403 279 .....   | 80          | 404 596 .....   | 27          | 404 992 .....   | 137         |
| 403 280 .....   | 81          | 404 603 .....   | 70          |                 |             |
| 403 281 .....   | 82          | 404 621 .....   | 28          | 405 002 .....   | 120         |
| 403 290 .....   | 83          | 404 636 .....   | 42          | 405 006 .....   | 121         |
| 403 304 .....   | 84          | 404 642 .....   | 187         | 405 031 .....   | 60          |
| 403 334 .....   | 195         | 404 682 .....   | 49          | 405 032 .....   | 139         |
| 403 362 .....   | 196         | 404 694 .....   | 71          | 405 033 .....   | 141         |
| 403 383 .....   | 197         | 404 722 .....   | 44          | 405 054 .....   | 123         |
| 403 389 .....   | 152         | 404 743 .....   | 11          | 405 060 .....   | 143         |
| 403 438 .....   | 153         | 404 744 .....   | 13          | 405 061 .....   | 62          |
| 403 460 .....   | 200         | 404 747 .....   | 50          | 405 063 .....   | 145         |
| 403 474 .....   | 155         | 404 748 .....   | 51          | 405 072 .....   | 125         |
| 403 475 .....   | 156         | 404 753 .....   | 20          | 405 091 .....   | 95          |
| 403 559 .....   | 157         | 404 757 .....   | 21          | 405 092 .....   | 97          |
| 403 567 .....   | 158         | 404 763 .....   | 72          | 405 197 .....   | 127         |
| 403 712 .....   | 85          | 404 764 .....   | 53          | 405 228 .....   | 64          |
| 403 790 .....   | 159         | 404 774 .....   | 74          | 405 237 .....   | 98          |
| 403 854 .....   | 163         | 404 846 .....   | 91          | 405 251 .....   | 129         |
| 403 930 .....   | 165         | 404 847 .....   | 93          | 405 504 .....   | 46          |
| 403 931 .....   | 167         | 404 854 .....   | 101         |                 |             |
| 403 933 .....   | 169         | 404 864 .....   | 103         |                 |             |
| 403 936 .....   | 171         | 404 865 .....   | 104         |                 |             |
| 403 939 .....   | 172         | 404 866 .....   | 106         |                 |             |
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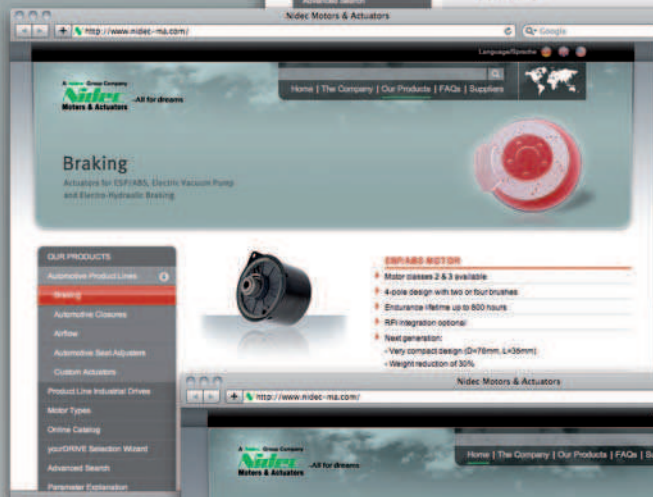
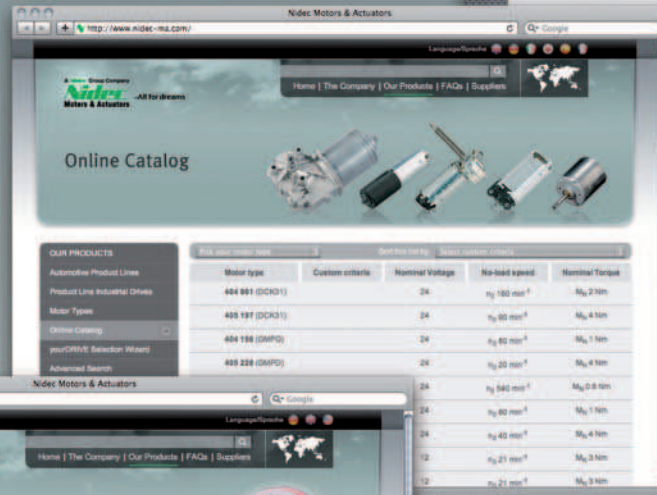
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