

DeviceNet Absolute Rotary Encoder



DVS58/DVM58 Series



DeviceNet™

Pepperl+Fuchs' DVS58 and DVM58 series absolute encoders interface with DeviceNet. Available in either single-turn with 13-bit resolution, or multi-turn with 25-bit resolution versions. Each unit is individually addressable from 0 to 63 using the switches in the removable housing cover. The encoder operates in 3 modes: polled, change of state or cyclic. These encoders are rated IP65 and feature a rugged aluminum housing.

- DeviceNet interface
- Industrial standard 58 mm diameter housing
- Single or multi-turn
- Addressable
- IP65
- Servo or clamping flange

DVS58/DVM58 Series Order Code

DV□58N-□□□AGROBN-□□□□

Type

- S Single-turn
- M Multi-turn

Number of bits

- 0013 (single-turn) 8192
- 1213 (multi-turn) 8192 per revolution
4096 revolutions

Shaft option/flange style

- 011 Ø 10 mm x 20 mm with clamping flange
- 032 Ø 6 mm x 10 mm with servo flange

Example: DVS58N-032AGROBN-0013

Technical Data

Electrical

| | |
|-------------------------------------|------------------|
| Supply Voltage | 10-30 VDC |
| Current Consumption | Δ350 mA |
| Output Code | Binary |
| Linearity | ±0.5 LSB |
| Counting Direction (shaft end view) | Programmable |
| Interface | |
| Type | DeviceNet |
| Transfer rate | 0.5 Mbaud max. |
| Resolution | |
| Bits/steps per turn | 13-bit/8192 max. |
| Bits/number of turns | 12-bit/4096 max. |
| Overall Resolution | |
| Single-turn | 13-bit |
| Multi-turn | 25-bit |

Mechanical

| | |
|--------------------------|--|
| Material | |
| Housing | Aluminum |
| Flange | Aluminum |
| Shaft | Stainless steel |
| Pulse disc | Plastic |
| Weight | |
| DVS58 | ≈18 oz. |
| DVM58 | ≈25 oz. |
| Maximum Rotational Speed | 6,000 rpm |
| Moment of Inertia | Δ7.1 x 10 ⁻⁴ oz-in-sec ² |
| Starting Torque at 20°C | Δ7.1 in-oz |
| Shaft Loading | |
| Axial | 40 lbs |
| Radial | 40 lbs |
| Bearing Working Life | >4 x 10 ⁹ revolutions |

Environmental

| | |
|-----------------------|----------------------------------|
| Storage Temperature | -40°C to +85°C (-40°F to +185°F) |
| Operating Temperature | 0°C to +70°C (+32°F to +158°F) |
| Humidity | 95% RH non-condensing |
| Shock Resistance | 100 G for 3 ms |
| Vibration Resistance | 10 G, 10-2,000 Hz |
| Enclosure Rating | IP65 |

Connection Types

| | |
|--------------------|--|
| Terminal Connector | Terminal compartment with 3 x PG9 cable glands |
|--------------------|--|

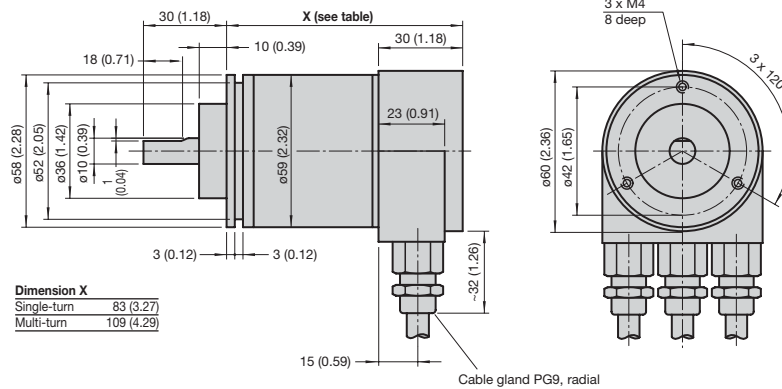
DeviceNet Absolute Rotary Encoder

Dimensions

mm (in.)

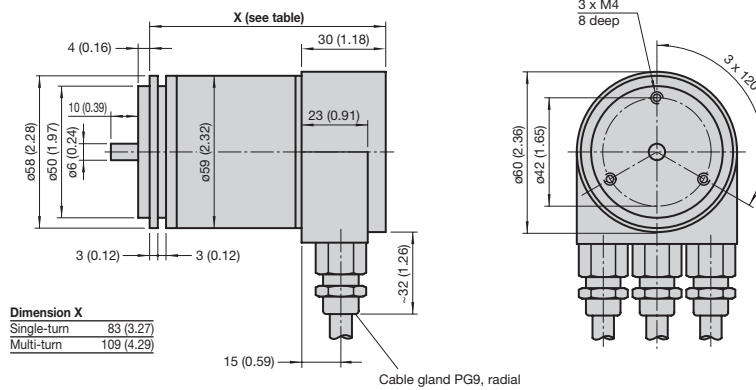
Shaft option/flange style 011

Ø 10 mm x 20 mm with clamping flange



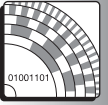
Shaft option/flange style 032

Ø 6 mm x 10 mm with servo flange



Electrical Connection

| Terminal | Cable | Description |
|----------|-------|------------------------------------|
| ⊥ | - | Ground connection for power supply |
| (+) | Red | Power supply |
| (-) | Black | Power supply |
| CG | - | CAN ground |
| CL | Blue | CAN low |
| CH | White | CAN high |
| CG | - | CAN ground |
| CL | Blue | CAN low |
| CH | White | CAN high |



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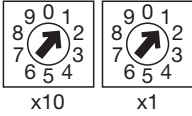


DVS58/DVM58 Series

DVS58/DVM58 Series Configuration

Setting the member address

The member address can be set with the rotary switches. The address can be defined between 0 and 63, and each address may only be assigned once.



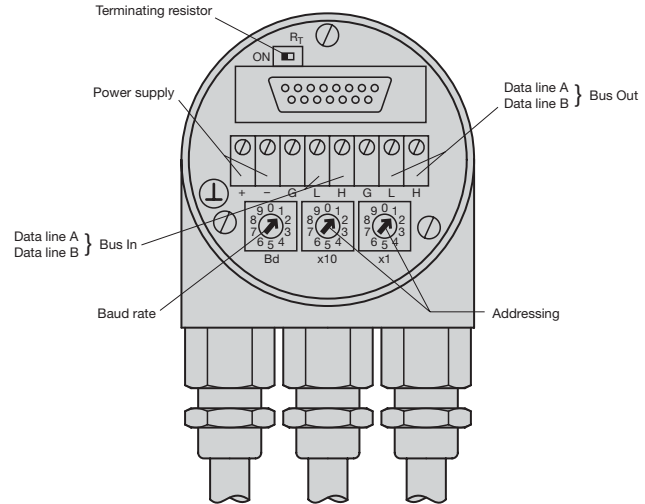
Adjusting the terminating resistor

The terminating resistor R_T (121 K) can be switched into the circuit with the switch:



Adjusting the baud rate

| Baud rate in kBit/s | Rotary switch |
|---------------------|---------------|
| 125 | 0 |
| 250 | 1 |
| 500 | 2 |
| 125 | 3 |
| Reserved | 4-9 |



DVS58/DVM58 Series Programming

Programmable CAN operating modes

| Mode | Description |
|----------------------|--|
| Polled mode | The connected host requests the current actual position value via a telegram. The absolute encoder reads in the current position, calculates all parameters that may have been set and then sends back the actual process value. |
| Cyclic mode | The absolute encoder sends the current process value depending on a programmable timer. This can cause the bus load to be reduced since the member on the network only sends a message after a specific amount of time without a prompt from the master. |
| Change of state mode | The absolute encoder monitors the current process value and transfers the current value by itself if there is any change in the value. This can cause the bus load to be reduced, since the member on the network only sends a message if there has been a change. |

Programmable rotary encoder parameters

| Parameter | Description |
|---------------------------|--|
| Operating parameter | The direction of rotation (complement) can be specified as the operating parameter. This parameter determines the direction of rotation in which the output code will be rising or declining. |
| Resolution per revolution | The "Resolution" parameter is used to program the rotary encoder so that a desired number of steps can be implemented in reference to a revolution. |
| Preset value | The preset value is the desired position value that must be achieved for a specific physical setting of the axis. The preset value parameter is used to set the actual position value to the desired actual process value. |