



Model Number

DVM58N-011AGR0BY-1213

Features

- Industrial standard housing Ø58 mm
- 25-bit multiturn
- Galvanically isolated DeviceNet interface
- Clamping flange
- Auto-saving function

Description

Absolute encoders deliver an absolute step value for each angle setting. All these values are represented by code samples on one or more code disks. The code disks are screened by an infrared LED and the bit obtained sample is detected by an optical array. Its signals are electronically amplified and are forwarded on to the interface for processing.

The bus electronics module is integrated into the removable housing cover. This makes it possible to mount or replace the new rotary encoders and the matching bus electronics separately during installation or service.

Technical Data

General specifications

Detection type	photoelectric sampling
Device type	Multiturn absolute encoder

Functional safety related parameters

MTTF _d	480 a at 40 °C
Mission Time (T _M)	20 a
L ₁₀	4.3 E-10 at 6000 rpm and 20/40 N axial/radial shaft load
Diagnostic Coverage (DC)	0 %

Electrical specifications

Operating voltage U _B	10 ... 30 V DC
No-load supply current I ₀	max. 230 mA at 10 V DC max. 100 mA at 24 V DC
Linearity	± 2 LSB at 16 Bit, ± 1 LSB at 13 Bit, ± 0,5 LSB at 12 Bit
Output code	binary code
Code course (counting direction)	cw ascending (clockwise rotation, code course ascending) cw descending (clockwise rotation, code course descending)

Interface

Interface type	DeviceNet
Resolution	
Single turn	13 Bit
Multiturn	12 Bit
Overall resolution	25 Bit
Transfer rate	max. 0.5 MBit/s

Connection

Terminal compartment	in removable housing cover
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Standard conformity

Degree of protection	DIN EN 60529, IP65
Climatic testing	DIN EN 60068-2-30, no moisture condensation
Emitted interference	DIN EN 61000-6-4
Noise immunity	DIN EN 61000-6-2
Shock resistance	DIN EN 60068-2-27, 100 g, 6 ms
Vibration resistance	DIN EN 60068-2-6, 20 g, 10 ... 2000 Hz

Ambient conditions

Operating temperature	-40 ... 85 °C (-40 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

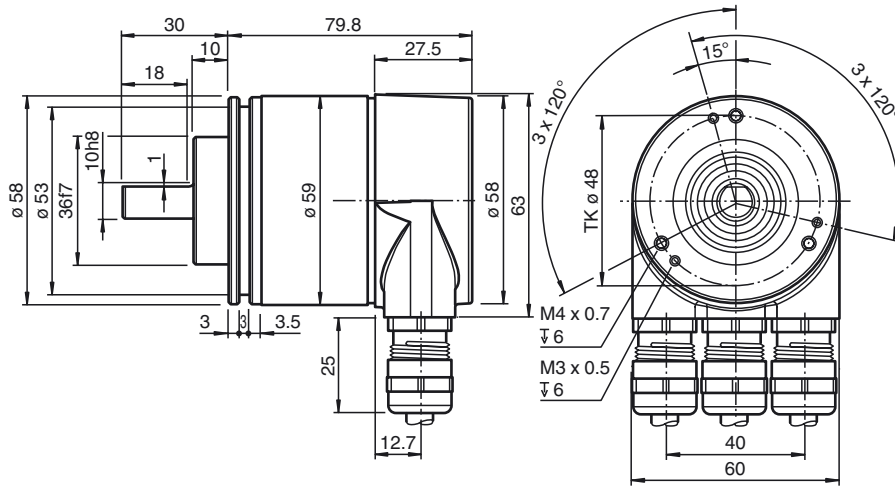
Mechanical specifications

Material	housing: powder coated aluminum flange: aluminum shaft: stainless steel
Mass	approx. 700 g
Rotational speed	max. 12000 min ⁻¹
Moment of inertia	30 gcm ²
Starting torque	≤ 3 Ncm
Shaft load	
Axial	40 N
Radial	110 N

Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
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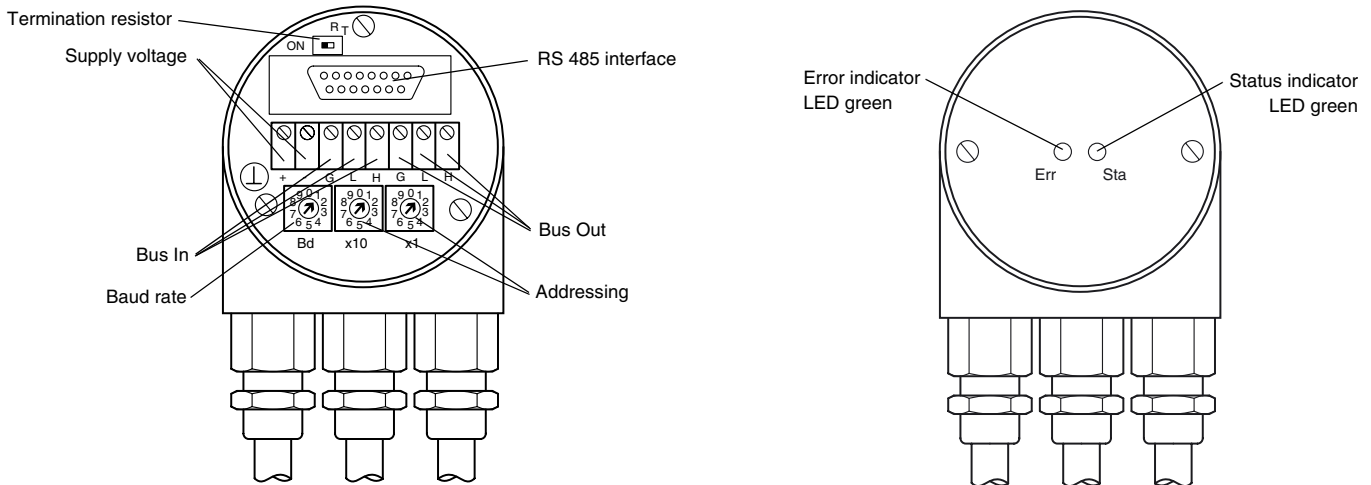
Dimensions



Electrical connection

Terminal	Explanation
⊥	Ground connection for power supply
(+)	Power supply
(-)	Power supply
CG	CAN ground
CL	CAN low
CH	CAN high
CG	CAN ground
CL	CAN low
CH	CAN high

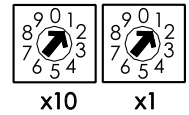
Indicating and operating elements



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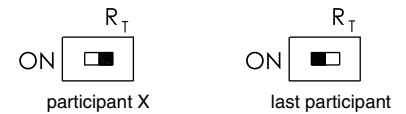
Adjusting the participant address

The participant address can be adjusted with the rotary switches. The address can be defined between 1 and 63, and may only be assigned once.



Adjusting the termination resistor

The terminating resistor R_T (121 Ω) can be connected to the circuit by means of the switch:



Baud rate adjustment

Baud rate [kBit/s]	Switch position
125	0
250	1
500	2
125	3
reserved	4 ... 9

LED-indicators

LED red	LED green	Meaning
off	off	No voltage supply
off	on	Encoder ready, boot-up message not transmitted, yet. Possible reasons: - no further participant present - wrong baud rate - encoder in prepared status
flashing	on	Boot-up message transmitted, Device configuration possible.
on	on	Normal operation mode, encoder in operational status.

CAN operating mode

The operating mode of this encoder is set to „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.

Programmable rotary encoder parameters

Parameter	Explanation
Operating parameter	The direction of rotation (complement) can be specified by parameter as the operating parameter. This parameter determines the direction of rotation in which the output code will be rising or descending.
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.
Overall resolution	This parameter indicates the desired number of measurement units of the entire travel length. This value must not exceed the overall resolution of the absolute encoder. If the absolute encoder is used in infinite mode, the overall resolution parameter can only take on values that are powers of 2 (2x).
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.

Device specific encoder parameters

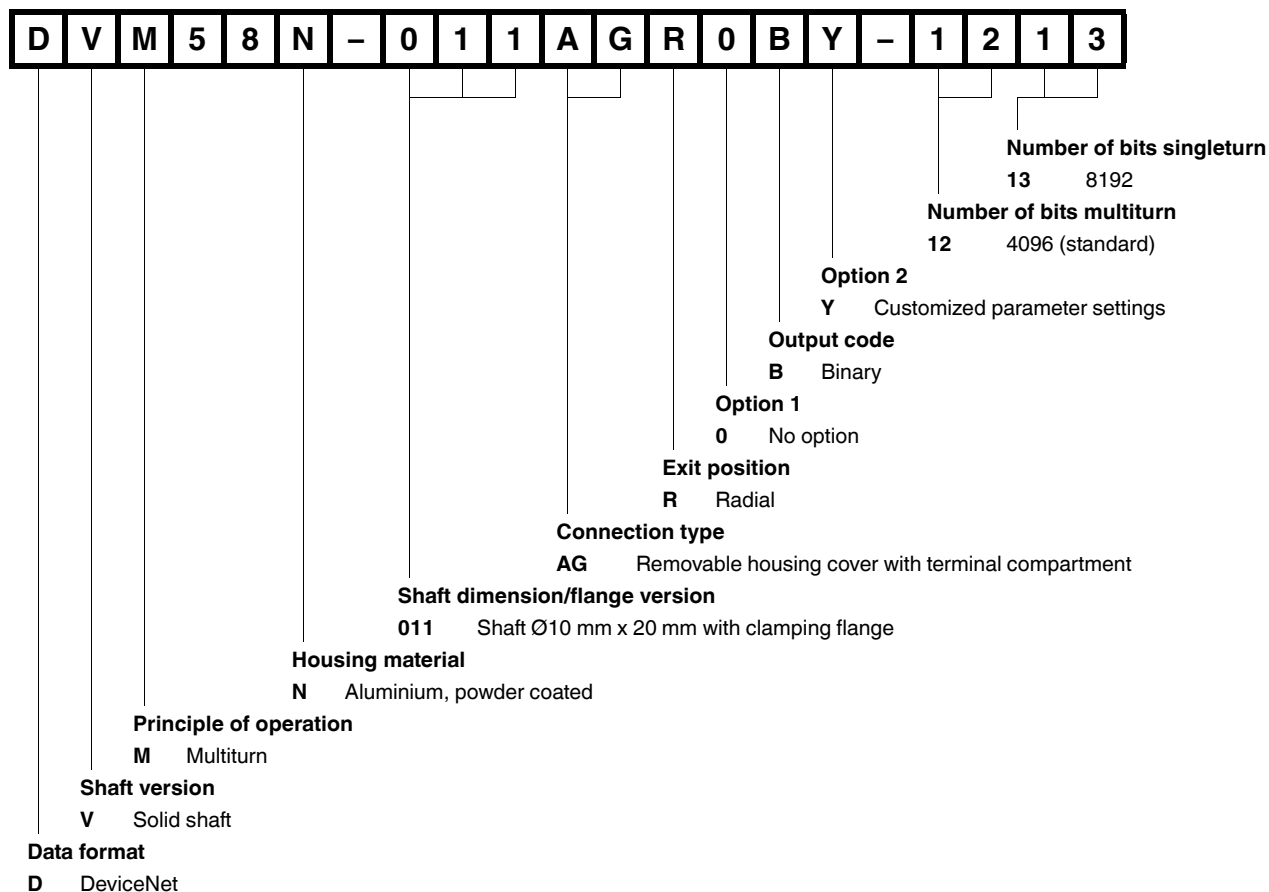
Class code: 66 Hex
Instance: 01 Hex

Attribute ID	Access	Name	Data type	Description
92 hex	Get/Set	Code sequence	Boolean	Controls the code sequence clockwise or counterclockwise
93 hex	Get/Set	Resolution per revolution	INT	Resolution for one revolution
94 hex	Get/Set	Total resolution	DINT	Total measurable resolution
95 hex	Get/Set	Preset value	DINT	Setting a defined position value
96 hex	Get	Position value	DINT	Current position

Auto-saving function

This encoder saves the programmed parameters directly from the configuration tool into the non-volatile memory. No additional command is required.

Order code



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