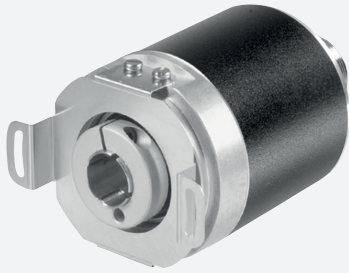


Multiturn absolute encoder

FSM58



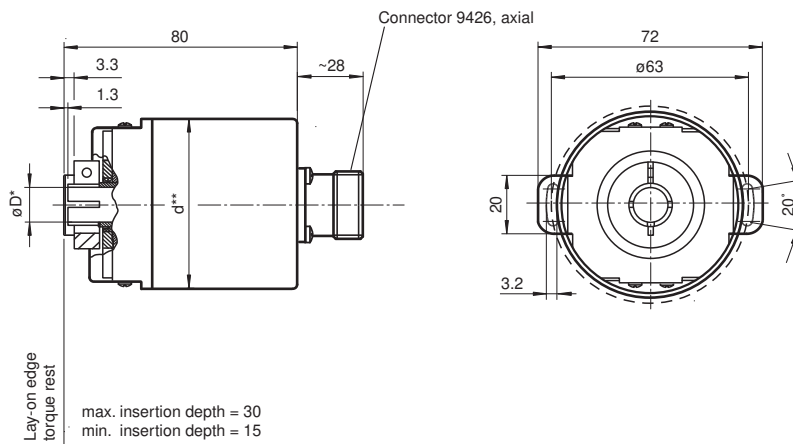
- Industrial standard housing $\varnothing 58$ mm
- 25-bit multiturn
- Output code: gray and binary
- Short-circuit proof push-pull output
- Inputs for selecting counting direction, LATCH, and PRESET
- Code change frequency up to 400 kHz
- Recessed hollow shaft



Function

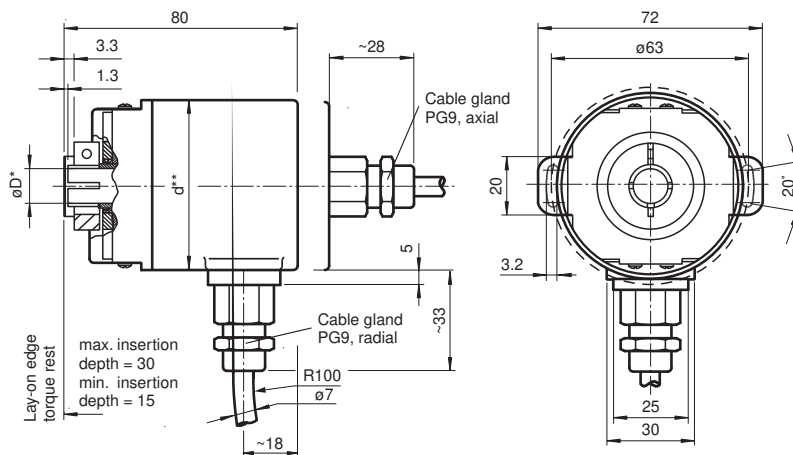
The emphasis for this series is on rapid data transfer. Position data are read directly out of the Gray code disc. The high code switching frequency of 400 kHz is achieved by consciously avoiding the use of a microcontroller. The FSM58 multiturn absolute encoder is equipped with a recessed hollow shaft. The encoder housing has a diameter of 58 mm. The recessed hollow shaft is available with diameters of 10 mm, 12 mm and 15 mm. This version in particular represents a simple and cost-effective mounting solution. The shaft hub connection is already integrated into the rotary encoder. The rotary encoder is held in place by a torque rest.

Dimensions



Recessed hollow shaft

* D = shaft diameter, according to type code
 ** Aluminium: d = 59, stainless steel: d = 61



Recessed hollow shaft

* D = shaft diameter according to type code
 ** Aluminium: d = 59, stainless steel: d = 61

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Technical Data






Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
No-load supply current	I_0	max. 140 mA
Power consumption	P_0	≤ 2.5 W , without output drivers
Linearity		± 0.5 LSB
Output code		Gray code, binary code
Code course (counting direction)		cw ascending (clockwise rotation, code course ascending)
Code preparation time		0.3 ms
Interface		
Interface type		Push-pull, parallel , short-circuit protected
Resolution		
Multiturn		25 Bit
Load current		20 mA
Voltage drop		≤ 2.5 V
Signal voltage		
High		operating voltage minus voltage drop
Low		≤ 2.8 V
Rise time		300 ns
De-energized delay		300 ns
Code change frequency		400 kHz
Input 1		
Input type		Selection of counting direction (cw/ccw)
Signal voltage		
High		10 ... 30 V
Low		0 ... 2 V
Input current		< 6 mA
Signal duration		min. 10 ms
Switch-on delay		≥ 1 ms
Switch-off delay		≥ 1 ms
Input 2		
Input type		Temporary storage (LATCH)
Signal voltage		
High		10 ... 30 V
Low		0 ... 2 V
Input current		< 6 mA
Signal duration		min. 100 μs
Switch-on delay		< 0.1 ms
Switch-off delay		< 0.1 ms
Input 3		
Input type		zero-set (PRESET)
Signal voltage		
High		10 ... 30 V
Low		0 ... 2 V
Input current		< 6 mA
Signal duration		min. 10 ms
Switch-on delay		< 1 ms
Connection		
Connector		type 9426, 26-pin
Cable		Ø9 mm, 15 x 2 x 0.14 mm ² , 2 m
Standard conformity		
Degree of protection		DIN EN 60529, IP65
Climatic testing		DIN EN 60068-2-3, no moisture condensation
Emitted interference		EN 61000-6-4:2007

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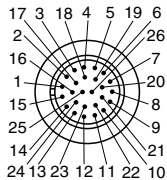
Technical Data

Noise immunity	EN 61000-6-2:2005
Shock resistance	DIN EN 60068-2-27, 100 g, 6 ms
Vibration resistance	DIN EN 60068-2-6, 10 g, 10 ... 2000 Hz
Approvals and certificates	
UL approval	cULus Listed, General Purpose, Class 2 Power Source
Ambient conditions	
Operating temperature	-40 ... 85 °C (-40 ... 185 °F) cable models: -30 ... 70 °C (rigid wiring) -5 ... 70 °C (flexible wiring)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F) (cable models: -5 ... 70 °C)
Mechanical specifications	
Material	
Combination 1	housing: powder coated aluminum flange: aluminum shaft: stainless steel
Combination 2 (Inox)	housing: stainless steel flange: stainless steel shaft: stainless steel
Mass	approx. 400 g (combination 1) approx. 800 g (combination 2)
Rotational speed	max. 12000 min ⁻¹
Moment of inertia	30 gcm ²
Starting torque	≤ 5 Ncm

Accessories

	9426	Female cordset
	ACC-PACK-ABS-_S_58 ø15	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 15 mm
	ACC-PACK-ABS-_S_58 ø14	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 14 mm
	ACC-PACK-ABS-_S_58 ø12	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 12 mm
	ACC-PACK-ABS-_S_58 ø10	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 10 mm

Connection

Signal	Cable Ø9 mm, 30-core	Connector 9426, 26-pin	Explanation
GND (rotary encoder)	White	1	Power supply
U _b (rotary encoder)	Brown	2	Power supply
Bit 1	Green	3	Data output
Bit 2	Yellow	4	Data output
Bit 3	Grey	5	Data output
Bit 4	Pink	6	Data output
Bit 5	Blue	7	Data output
Bit 6	Red	8	Data output
Bit 7	Black	9	Data output
Bit 8	Violet	10	Data output
Bit 9	Grey/Pink	11	Data output
Bit 10	Red/Blue	12	Data output
Bit 11	White/Green	13	Data output
Bit 12	Brown/Green	14	Data output
Bit 13	White/Yellow	15	Data output
Bit 14	Yellow/Brown	16	Data output
Bit 15	White/Grey	17	Data output
Bit 16	Grey/Brown	18	Data output
Bit 17	White/Pink	19	Data output
Bit 18	Pink/Brown	20	Data output
Bit 19	White/Blue	21	Data output
Bit 20	Brown/Blue	22	Data output
Bit 21	White/Red	23	Data output
Bit 22	Brown/Red	-	Data output
Bit 23	White/Black	-	Data output
Bit 24	Brown/Black	-	Data output
Bit 25	Pink/Green	-	Data output
V/R	Grey/Green	25	Input for selection of counting direction
Latch	Yellow/Grey	24	Temporary storage input
PRESET	Yellow/Pink	26	Zero setting
			

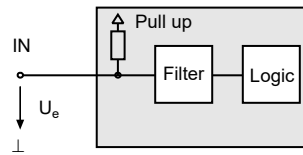
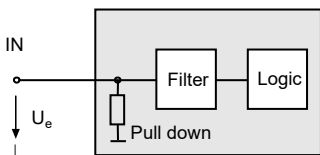
Interface

Inputs

Input for temporary storage (LATCH)
Input zero setting (PRESET)

Input level: "0" 0 V ... 2 V,
"1" 10 V ... 30 V,
I_e < 6 mA

Input for selection of counting direction (V/R)



Input for selection of counting direction (V/R)

The counting direction for the absolute value rotary encoder as seen looking on the shaft is defined as right rotating (cw) rising or descending. The counting direction can be reversed with the V/R input. If the input is not used, the counting direction is defined as rising (standard), the level is at "1". Pulse duration T > 10 ms.

Input level: "1" or unused = rising code value with direction of rotation cw.

Input level: "0" = descending code value for direction of rotation cw.

Input for temporary storage (LATCH)

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