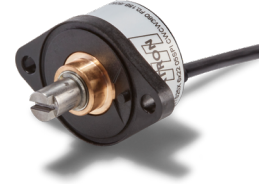


Series ETA25FPM – single/multiturn, programmable, analogue output, not redundant

Key features ETA25FPM :

- Measuring range 10° to max. 72000° (200 shaft revolutions)
- Programmable by the user using teach-in function. Programmable are the sense of rotation (CW/CCW) and the effective electrical angle [°]
- Programmable up to 10000 times
- Can also be used as a programmable singleturn rotary encoder
- Maximum rotation of the shaft in a voltage-free state without loss of the angle information +/-179°
- Factory programming (ex works): effective electrical angle of rotation 3600° (10 shaft revolutions), sense rotation CW
- Supply voltage: 9 to 30 VDC, 15 to 30 VDC
- Output signal: 4 to 20 mA, 0 to 5 V, 0 to 10 V



Electrical data ETA25FPM – multi/singleturn, programmable, analogue output, not redundant

Effective electrical angle of rotation 1.)	0 to 10° - 0 to 72000° (max. 200 turns) Start point, endpoint and sense of rotation programmable by the customer. Ex works the angle is set to 3600°. For detecting absolute position >360° the sensor should not be turned more than ±179° without supply voltage.		
Independent linearity (best straight line) 1.)	±0.05% @ 3600°		
Absolute Linearity 1.)	±0.1% @ 3600°		
Output signal	0 to 5 V	0 to 10 V	4 to 20 mA
Resolution 1.)	12 Bit		
Update rate	3 ms		
Supply voltage	9 to 30 V	15 to 30 V	11 to 30 V
Power consumption (no load)	< 10 mA		< 14 mA
Output load	≥ 5 kOhm		≤ 500 Ohm
Insulation voltage 1.)	1000 VAC @ 50 Hz, 1 min		
Insulation resistance 1.)	2 MOhm @ 500 VDC, 1 min		
Max. number of programming cycles	10000		
MTTF (EN29500-2005-1)	224a		229a

1.) According to IEC 60393

Programmable Multi/Singleturn Encoders

ETA25FPM

Order Code ETA25FPM – multi/singleturn, analogue output, not redundant							
Description	Selection: standard= black/bold , possible options= <i>grey/italic</i>						
Series	ETA25FPM						
Shaft diameter, shaft length: Shaft diameter Ø 6 mm, shaft length 15.6 mm <i>Shaft diameter Ø 6.35 mm, shaft length 15.6 mm</i> <i>Custom shaft dimensions [mm] Ø ≤ 6.35 mm</i>		6x15,6 <i>6,35x15,6</i> <i>XxXX</i>					
Supply voltage / output signal: VSUP=24 V (15 to 30 V) / OUT=0 to 10 V VSUP=24 V (9 to 30 V) / OUT=4 to 20 mA VSUP=24 V (9 to 30 V) / OUT=0 to 5 V			2410 2442 2405				
Operational Torque: Standard torque <i>Improved/medium torque</i>				- MT			
Shaft sealing: None <i>With shaft sealing</i>					- D		
Electrical connection, cable length: Flat ribbon cable, standard length 0.15 m <i>Flat ribbon cable with custom length [x,xx m]</i> Round cable, standard length 1 m <i>Round cable with custom length [x,xx m]</i>						F0,15 <i>FX,XX</i> R1,00 <i>RX,XX</i>	
Anti-rotation pin: Pin A <i>None (pin removed)</i>							A -

Order example ETA25FPM

Requirement:

Shaft Ø 6.00 mm, shaft length 15.6 mm, VSUP=24 V / OUT=0...5 V, sense of rotation CW, rotation angle ex works 3600° (can be programmed by customer), no shaft sealing, flat ribbon cable 1.00 m, anti-rotation pin A

Example for order code:

ETA25FPM 6x15,6 2405 R1,00A

Cable and pin assignment

Function	Option F	Option R
DIR	Strand 1 (red)	orange
END	Strand 2	grün
START	Strand 3	gelb
VSUP	Strand 4	rot
OUT	Strand 5	braun
GND	Strand 6	schwarz

For details on zero point definition see next page and page 27.

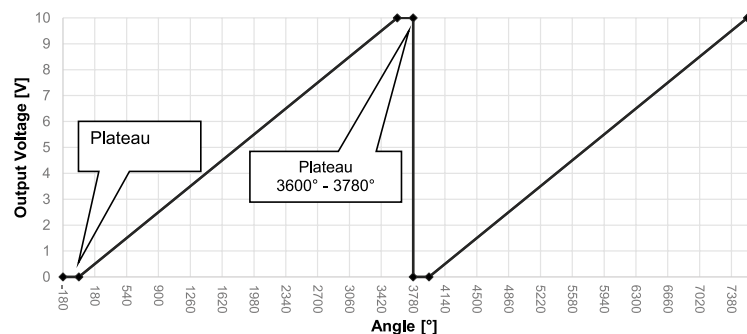
Signal output function (factory programming only). Automatic function for inserting signal plateaus

The function represents the relationship between the zero degree marking on the rotary encoder housing in dependency to the 0° position of the shaft and the resulting output signal in the state of delivery, when turning the shaft clockwise (sense of rotation CW). The effective electrical angle of rotation is 3600° ex works. Before and after the linearly rising output signal for 3600° the ETA25FPM integrates automatically signal plateaus for a rotation angle of each 180°.

The following example shows the output signal pattern when actuating the shaft in the delivery state for 11 revolutions clockwise (sense of rotation CW), starting at the 0° position:

1. 10 rotations of the shaft clockwise 0° to 3600°, linearly increasing output signal 0% to 100% FS
2. 1/2 rotation of the shaft 180° (3600° to 3780°) signal plateau 100% FS
3. 1/2 rotation of the shaft 180° (3780° to 3960°) signal plateau 0% FS

The drawing shows the signal-amplitude function for 0 to 10V signal output



Programming device PRO for programming the encoder in the field

Key features programmer:

- Programmable measuring range from 10° to max. 72000° (200 shaft revolutions)
- Programmable: sense of rotation (CW/CCW), effective electrical angle [°]
- Up to 10.000 programming cycles per rotary encoder



Order number:

135945

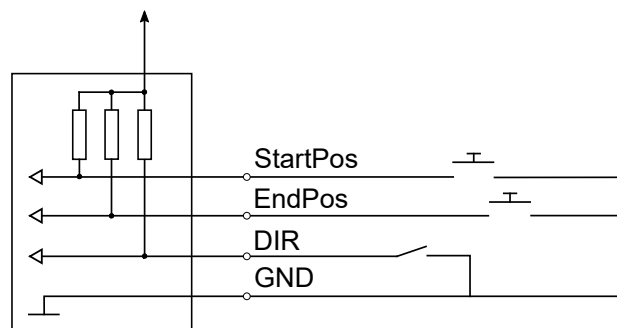
Order code:

Programmer Tool for ETA HTA PM

Circuit for field-programming

The programming guide is available for download on the MEGATRON web page <https://www.megatron.de/>

To program the encoder either the following circuit can be implemented, or one uses the programmer from MEGATRON.



Teach-In function – manual field programming

When manual programming in the field using the teach-in function, the remaining angle for the next full revolution is divided equally into high and low. There are no further signal plateaus. Please see the programming guide on our website for more details.