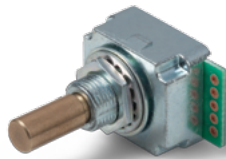


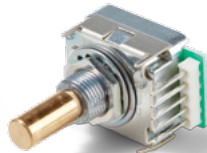
# Data Sheet for Panel Encoders

## Optoelectronic Panel Encoder

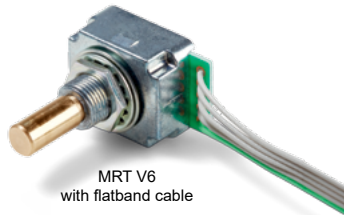
## Series MRT



MRT  
with lugs



MRT V5  
with front pins



MRT V6  
with flatband cable

- Compact design, ideal for small installation spaces
- Resolution 25 pulses per revolution
- Low power consumption < 10 mA
- Long push switch travel 1.2 mm
- Lifespan 1 mio. shaft revolutions
- With push button switch - with detent (25 clicks) or without
- Various electrical connection variants
- 5 V supply voltage

MRT offers some special features and is mainly used where a long push switch travel and / or low power consumption is required. The solid construction and the long life span round up the overall picture positive.

Electrical Data Sensor	MRT	MRTC
	with switch without detent	with switch with detent
Output signal	A, B	
Number of pulses	25 pulses per rev.	
Output voltage high	≥ (supply voltage -0.5V)	
Output voltage low	≤ 0.4 V max.	
Limit frequency	200 Hz	
Supply voltage	5 V ±10%	
Power consumption (no load)	< 10 mA	
Output load	20 mA	
Insulation voltage 1.)	250 VAC, 1 min	
Insulation resistance 1.)	100 MOhm @ 250 VDC	
Output electronics	CMOS	

Mechanical and Environmental Data Sensor	MRT	MRTC
	with switch without detent	with switch with detent
Mechanical angle of rotation /stroke 1.)	360° without stop	
Number of detents per revolution	-	25 clicks (25 ppr.)
Lifespan 2.)	> 1 Mio. shaft revolutions	
Bearing	Sleeve bearing	
Operational torque / detent torque		
Without detent standard torque	< 0.5 Ncm	-
With detent high torque	-	< 0.5 ±0.2 Ncm
Operating temperature range	0 °C up to +60 °C	
Storage temperature range	-40 °C up to +85 °C	
Protection grade standard (IEC 60529)	IP40	
Option D (shaft sealing)	IP54	
Vibration (IEC 68-2-6, Test Fc)	10-55 Hz; 1.5mm 2h each direction	
Shock (IEC 68-2-27, Test Ea)	490m/s <sup>2</sup> , 11 mm X, Y, Z each 3 times	

# Data Sheet for Panel Encoders

## Optoelectronic Panel Encoder

Series MRT

Mechanical and Environmental Data Sensor	MRT with switch without detent	MRTC with switch with detent
Housing diameter / length	21.2 x 18 mm	
Housing depth	11 mm	
Shaft diameter	6 mm	
Shaft type	Solid shaft	
Max. radial load	< 1 N	
Max. axial load	< 1 N	
Connection type	Solder lugs, solder pins, flatband cable	
Connection position	Radial	
Sensor mounting	Bushing	
Mass	app. 16 g	
Fastening parts included in delivery	Hex nut (AF12), flat washer, and tooth washer for option D with additional sealing ring	
Fastening torque mounting nut	< 1.5 Nm	
Material shaft	Messing	
Material housing	Metal	
Material disc	Polyoxymethylene (POM)	

## Electrical Data Push Button Switch

Max. voltage push button switch	12 VDC
Max. current push button switch	20 mA
Resistance push button switch	< 200 mOhm

## Mechanical Data and Environmental Data Push Button Switch

Lifespan push button switch	> 0.5 mio. actuations
Travel of push button switch	1.2 mm
Operational force of push button switch	4 ±1 N

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

# Data Sheet for Panel Encoders

Optoelectronic Panel Encoder

Series MRT

## Order code

Description	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>							
Series	MRT							
<b>Detent:</b> <b>With detent and with push button switch</b> <i>Option without detent and with push button switch</i>		<b>C</b> -						
<b>Resolution in pulses per revolution:</b> <b>25 ppr. (detents)</b>			<b>25</b>					
<b>Supply voltage:</b> <b>5 V</b>				-				
<b>Output signal:</b> <b>A+B</b>					-			
<b>Shaft sealing:</b> <b>Without shaft sealing</b> <i>Option D with shaft sealing</i>						- D		
<b>Electrical Connection:</b> <b>With solder lugs</b> <i>Option with solder pins to the front side</i> <i>Option flatband cable 150 mm</i>							- V5 V6	
<b>Shaft diameter, shaft length:</b> <b>Ø 6.00 x 21.2 mm</b> <i>Option shaft length in mm</i> <i>Option shaft diameter in mm (≤6,00 mm)</i>								- Ax,xx DMx,xx

## Order example MRT

### Requirement:

With detent and push button switch, 25 pulses per revolution, supply voltage 5 V, output signal A+B, without shaft sealing, electrical connection solder lugs, shaft diameter 6 mm, shaft length 21.2 mm

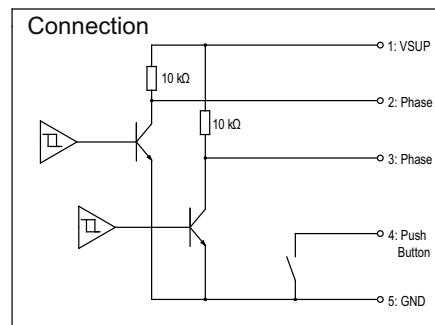
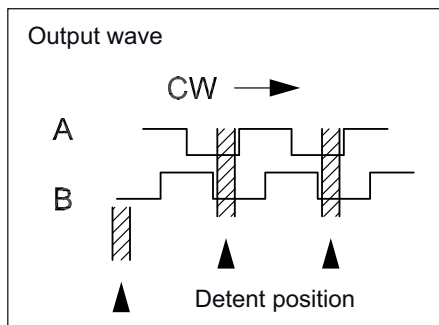
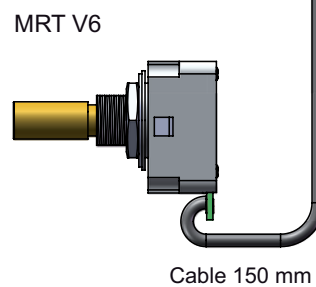
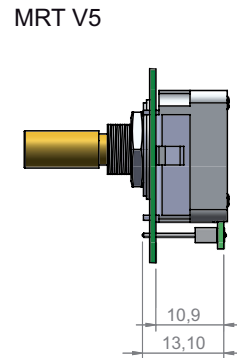
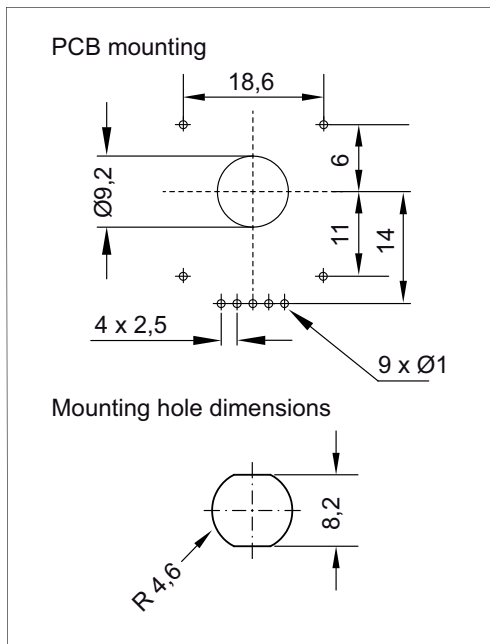
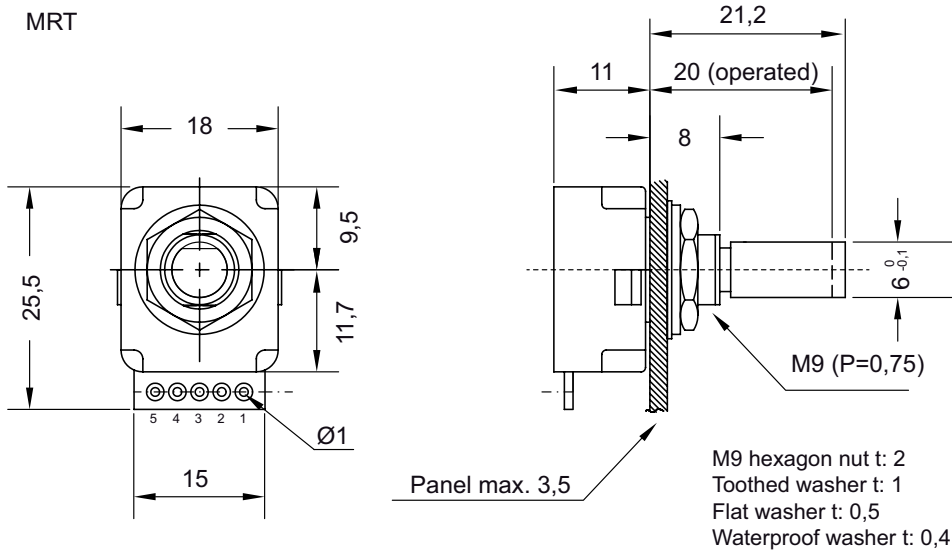
**Example for order code:** MRT C 25

## For higher quantities or on-going demand, additional options are available as described below

For example:

- Other resolutions
- Other number of detents
- Customized detent torque
- Special shaft design
- Special cable and connection design

Drawing



Dimensions in mm