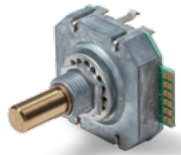


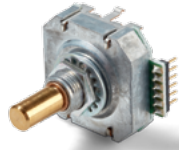
# Data Sheet for Panel Encoders

## Optoelectronic Panel Encoder

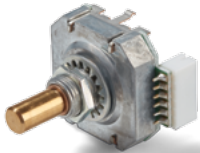
## Series MRX50



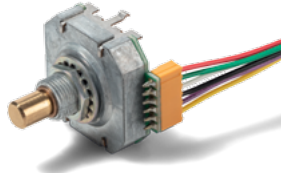
Standard with solder lugs



V2 - pins backside



V3 - with socket for plug



V4 - flat band cable with soldering aid

- Compact design, ideal for small installation spaces
- Resolution 50 pulses per revolution
- Lifespan more than 1 mio. shaft revolutions
- IP protection grade from shaft side until IP65
- With or without switch, detent
- Various electrical connection variants
- Supply voltage 5 V or 3.3 V

The sum of the properties makes the MRX50 particularly interesting for use in control panels, where a limited installation space, a finely graduated value-setting coupled with a long product life, is required. Based on an optional shaft sealing this manual encoder is also suitable for applications with increased environmental requirements.

Electrical Data Sensor	MRXC50 with detent	MRXCT50 mit detent and switch
Output signal	A, B	
Number of pulses	50 pulses per rev.	
Output voltage high	≥ (supply voltage - 0.5V)	
Output voltage low	≤ 0.5V	
Limit frequency	100 Hz	
Supply voltage	5 V ±5%, (3.3 V ±5%)	
Power consumption (no load)	< 30 mA	
Insulation voltage 1.)	Housing: 500VDC, 1 min. Switch: 100 VDC, 1 min.	
Insulation resistance 1.)	Housing: 100MΩ @ 500VDC Switch: 100MΩ @ 250VDC	
Output electronics	TTL	
Switch-on delay	≤340ns	

Mechanical and Environmental Data Sensor	MRXC50 with detent	MRXCT50 with detent and switch
Mechanical angle of rotation /stroke 1.)	360° without stop	
Number of detents per revolution	50 (50 pulses per rev.)	
Lifespan 2.)	> 1 Mio. shaft revolutions	
Bearing	Sleeve bearing	
Operational torque / detent torque:		
With detent standard torque	0.4 ±0.2 Ncm	
With detent high torque	0.8 ±0.2 Ncm	
Operating temperature range	-20 °C up to +60 °C	
Storage temperature range	-20 °C up to +80 °C	
Protection grade shaft (IEC 60529)	IP40	
With shaft sealing option D (only from shaft side)	IP65	

# Data Sheet for Panel Encoders

Optoelectronic Panel Encoder

Series MRX50

Mechanical and Environmental Data Sensor	MRXC50 with detent	MRXCT50 with detent and switch
Housing diameter / length	25 x 25 mm	
Housing depth	10 mm	
Shaft diameter	6 mm	
Shaft type	Solid shaft	
Connection type	Solder lugs, socket for plug, flat band cable with soldering aid (plug)	
Connection position	Radial	
Sensor mounting	Bushing	
Mass	app. 25 g	
Fastening parts included in delivery	Hex nut (AF11), flat washer and tooth washer For option D with additional sealing ring	
Fastening torque mounting nut	≤ 80Ncm	
Material shaft	Brass	
Material housing	Aluminium die Casting	
Material disc	Stainless steel	

Electrical Data Push Button Switch	
Max. voltage push button switch	12 VDC
Max. current push button switch	50 mA
Resistance push button switch	< 200 mOhm

Mechanical Data and Environmental Data Push Button Switch	
Lifespan push button switch	> 1 mio. operations
Travel of push button switch	0.7 ±0.3 mm
Operational force of push button switch	5 ±1 N
Bounce time	< 10 ms

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 MRX50

## Order Code

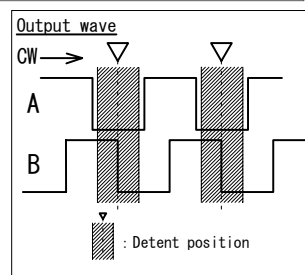
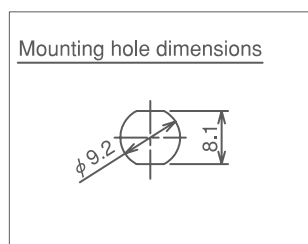
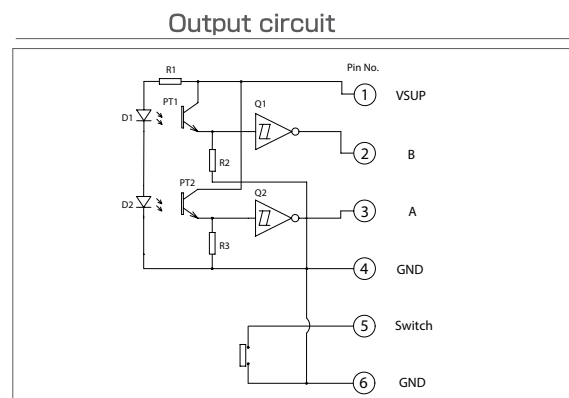
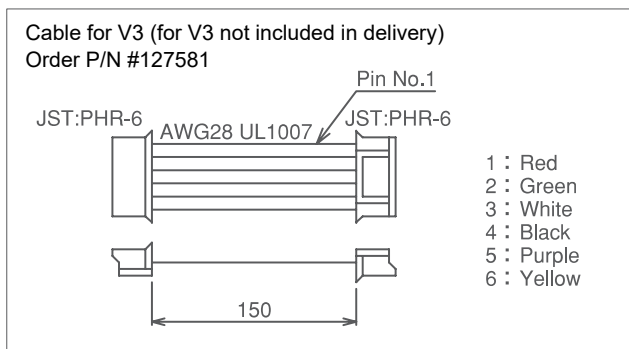
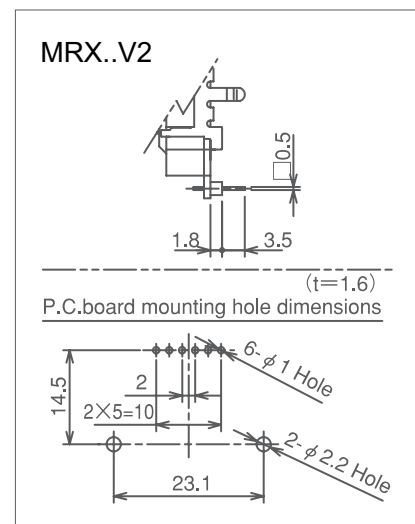
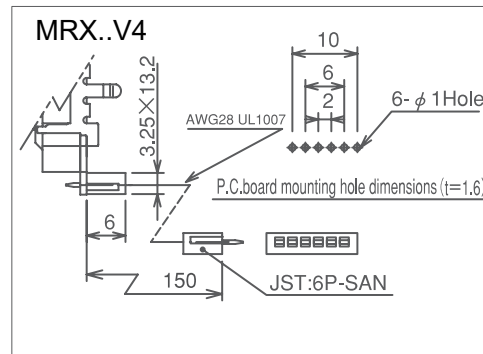
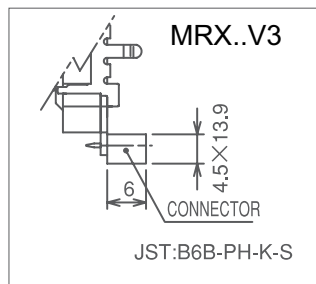
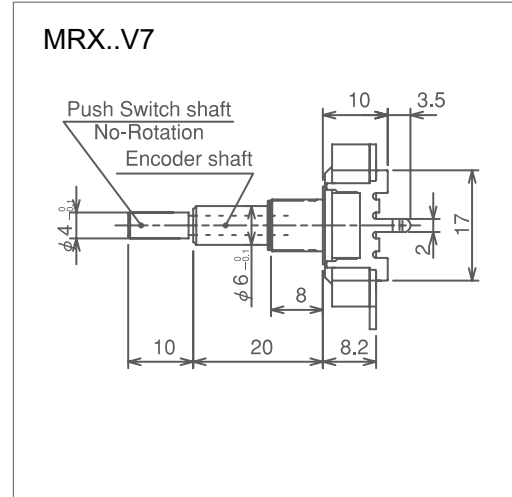
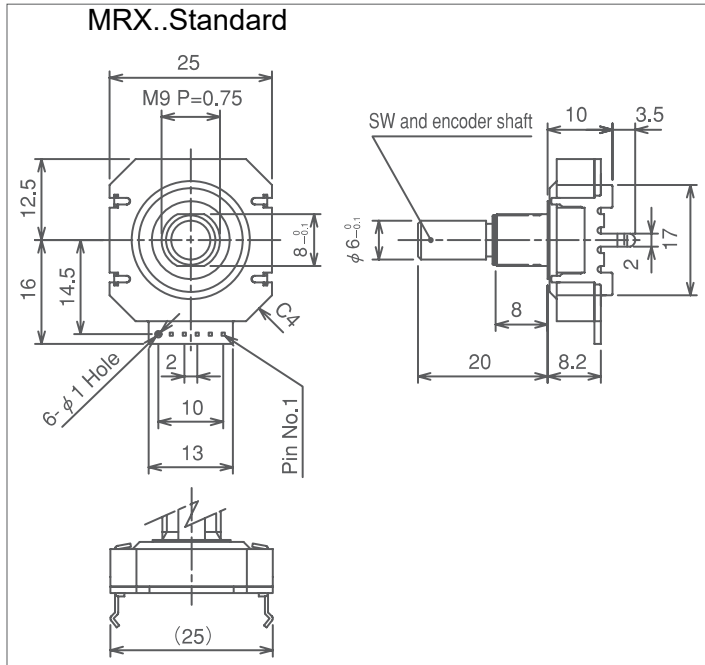
Description	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>							
<b>Series</b>	<b>MRX</b>							
<b>Detent:</b>								
<b>Detent without push button switch</b>		<b>C</b>						
<b>Detent with push button switch</b>		<b>CT</b>						
<b>Pulses per revolution:</b>								
<b>50 pulses (detent) per revolution</b>			<b>50</b>					
<b>Supply voltage:</b>								
<b>Standard 5 V</b>					-			
<i>Option 3.3 V</i>					3,3			
<b>Standard Output signal: A+B</b>						-		
<b>Shaft sealing:</b>								
<b>Standard without shaft sealing</b>							-	
<i>Option D with shaft sealing</i>							D	
<b>Operational torque:</b>								
<b>Standard torque 0.4 ±0.2 Ncm</b>								-
<i>Option increased torque: 0.8 ±0.2 Ncm</i>								V1
<b>Electrical connection:</b>								
<b>Standard solder lugs</b>								-
<i>Option contact pin's backside</i>								V2
<i>Option socket for plug (plug is not part of delivery)</i>								V3
<i>Option flat band cable 150 mm with solder aid (plug)</i>								V4
<b>Shaft diameter / length:</b>								
<b>Ø6,00 x 20 mm</b>								-
<i>Option Ø6.00 x 20 + Ø4 x 10 mm (only with push button switch)</i>								V7
<i>Option shaft length in mm</i>								Ax,xx
<i>Option shaft diameter in mm (≤6,00 mm)</i>								DMx,xx

### 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



**Output wave**

(1) CW : The phase A rises when the phase B is low level (0).  
 CCW : The phase A rises when the phase B is high level (1).  
 (2) At the detent position both of phase A and B is low level (0).

Dimensions in mm