

# XD SERIES

Proportional hand grip joystick for demanding vehicle applications



## KEY FEATURES

- Now available with single axis operation
- New spring option with higher operating force
- Now available with dual HR series rollers
- Shallow mounting depth of <60 mm (2.36 in)
- Rated for 10 million lifecycles
- SAE CAN bus J1939-71
- Resists high axial load (1780 N - 400 lbf)

## OPTION SELECTION

The diagram illustrates the 16-pin connector pinout for the XDS500. The pins are labeled from 1 to 16. The pinout is as follows:

- Pin 1: XD
- Pin 2: GT
- Pin 3: (blank)
- Pin 4: (blank)
- Pin 5: (blank)
- Pin 6: N
- Pin 7: (blank)
- Pin 8: (blank)
- Pin 9: (blank)
- Pin 10: (blank)
- Pin 11: (blank)
- Pin 12: (blank)
- Pin 13: A
- Pin 14: N
- Pin 15: (blank)
- Pin 16: (blank)

The diagram also shows the following features and their corresponding pinout:

- SERIES**: XD
- HANDLE**: GT
- CENTERING**: 2 (Spring centering)
- MECHANICAL FEATURES**: N (None)
- OPERATOR PRESENCE PADDLE**: Y (Yes), N (No)
- FACEPLATE**: A (Blank), B (One pushbutton), C (Two pushbuttons), D (Three pushbuttons), E (Four pushbuttons), F (Five pushbutton), G (Six pushbuttons), H (Toggle switch, two pushbuttons), J (Two toggle switches), K (Mini joystick), L (Eight pushbuttons), M (Two Hall effect thumbwheels), N (One Hall effect thumbwheel), P (Two pushbuttons, one Hall effect thumbwheel)
- INDEX TRIGGER**: Y (Yes), N (No)
- OPERATION**: T (Two axis), X (One axis, X), Y (One axis, Y)
- OPERATING FORCE**: L (.8Nm \*), M (1.24Nm \*)
- OUTPUT**: C (SAE CANbus J1939-71)

## ENVIRONMENTAL SPECIFICATIONS

- Operating Temperature: -40 °C to +85 °C (-40 °F to +185 °F)
- Storage Temperature: -40 °C to +85 °C (-40 °F to +185 °F)
- Above Panel Sealing: Up to IP67 (subject to handle configuration)
- Humidity: IEC 60068-2-38
- Thermal shock: SAE J1455 section 4.1.3.2
- Salt spray: IEC 60068-2-11
- Random vibration: IEC 60068-2-64
- Sinusoidal vibration: IEC 60068-2-6
- EMC Emissions:
  - Radiated Emissions Level: ECE/324/Add.9:2012; CISPR 25:2002
  - Radiated Emissions Level: CISPR 25:2008
- EMC Immunity:
  - ESD: ISC 10605:2008; criteria A
  - Radiated immunity: ISO 11452-2:2004; criteria B
  - Bulk current injection immunity: ISO 11452-4:201; criteria A
  - Pulse 1, Pulse 2a, Pulse 2b, Pulse 3a, Pulse 3b, Pulse 4, Pulse 5a: ISO 7637-2:2011; criteria A

### MECHANICAL SPECIFICATIONS (X & Y AXIS)

- Operation: Two axis
- Deflection angle:  $\pm 20^\circ$  in X and Y directions
- Operating torque, breakout: .68Nm\*
- Operating torque, 50% travel: .8Nm\*
- Operating torque, 100% travel: 1.5Nm\*
- Maximum axial load: 400 lbf.
- Expected life: 10 million lifecycles (X and Y axis)
- Lever Action (centering): Spring return

## ELECTRICAL SPECIFICATIONS

- Technology: Redundant Hall effect sensor
- Supply voltage range: 6 - 35 VDC
- Transient overvoltage max: 40 V
- Reverse polarity Max: -1000 VDC
- Output signal: SAE CANbus J1939-71
- Connections: Deutsch DTM04-6p

## ELECTRICAL CONNECTIONS

- Six position connector: Deutsch DTM04-6P
- Wire: 22 AWG, PTFE insulation with expandable sleeve
- Length: 6.00" +/- 0.5" (bottom of joystick to connector)

## COMPONENT DESCRIPTIONS



MT SERIES  
toggle  
P/N: MTG72AD2



TS SERIES  
thumbstick  
P/N: TS1T2S02A

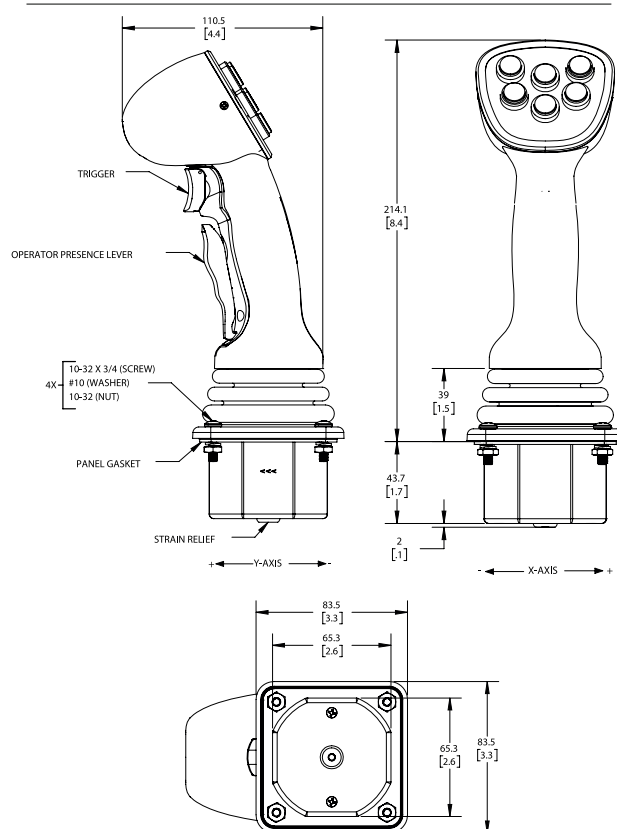


IM SERIES  
pushbutton  
P/N: IMR7Z42234



**HR SERIES**  
thumbwheel  
P/N: HRG202B0

## DIMENSIONS



**ERMEC, S.L. BARCELONA**  
C/ Francesc Teixidó, 22  
08918 Badalona SPAIN

Tel. +34 902 450 160  
info@ermec.com  
www.ermec.com

**ERMEC, S.L. - MADRID**  
C/ Puerto Rico, 4  
28222 Majadahonda (Madrid) SPAIN

**bilbao@ermec.com**  
**portugal@ermec.com**