

MERRITT PROHD

SINGLE-AXIS JOYSTICK

The PROHD is a compact, rugged cast construction joystick, ideally suited for high-duty cycle mill applications and environmentally challenging applications. It features throttle control capabilities and is rated IP65 for protection against dust and water ingress.



COMPACT
& RUGGED



AC & DC
COMPATIBLE



ENVIRONMENTALLY
SEALED

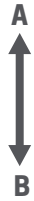
FEATURES

- Easy top access to clean and regrease inside components
- Steel construction to withstand challenging environments
- Compatible with NSO-SFA and Hubbell-4211
- Throttle control capabilities
- AC/DC capabilities
- Easily replace contact blocks
- Mechanical Interlock



J.R. MERRITT
CONTROLS 

SINGLE AXIS DRIVE ARRANGEMENT



SPRING TENSION OPTIONS

- Light
- Heavy

JOYSTICK ACTION



SPRING RETURN

Returns to center

OR



MAINTAINED

Holds at detent steps

OR



FRICTION BRAKE

Holds throughout

GATE TRAVEL OPTIONS



THROTTLE CONTROL

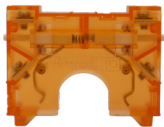
Full travel from start position

Custom gating up
to ± 45 degrees

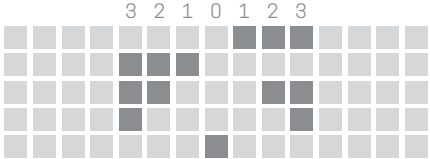
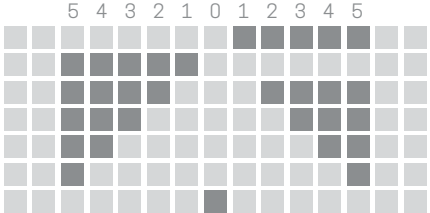


CONTACT TYPE

<p>AC (STANDARD) PART #: 37.501</p>	OR	<p>DC PART #: 37.518 RATING: 1 amp 250VDC</p>
--	----	--

AC SPECIFICATIONS

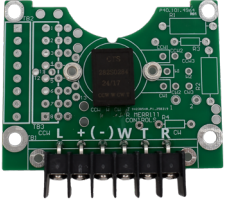
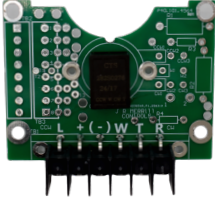


	<p>MAX. SWITCHING CAPACITY (AC) Making - 100 amps Breaking - (0.7PF) 80 amps 240V</p>	<p>ELECTRO-MECHANICAL LIFE (AC) Resistive Operations: 1 million @ 8 amps 240V 10 million @ 2 amps 240V Inductive Operations: 1 million @ 6 amps 240V 10 million @ 2 amps 240V</p>
<p>STANDARD SPECIFICATIONS # OF CONTACTS: Up to 10 double pole, snap-in blocks (i.e. 20 circuits for each axis)</p>	<p>RATING (AC) Continuous 16 amps @ 240V Resistive 8 amps @ 240V Inductive 6 amps @ 240V</p>	

CONTACT SEQUENCES

<p>STEPPED DETENT OPTIONS</p> <ul style="list-style-type: none"> 1-0-1 2-0-2 3-0-3 4-0-4 5-0-5 6-0-6 7-0-7 	<p>COMMON STEPPED SEQUENCES</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>3 2 1 0 1 2 3</p>  <p>30</p> </div> <div style="text-align: center;"> <p>5 4 3 2 1 0 1 2 3 4 5</p>  <p>50</p> </div> </div>
OR	
<p>STEPLESS DETENT 0 (NULL)</p>	<p>COMMON STEPLESS SEQUENCES</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>8P1</p> </div> <div style="text-align: center;">  <p>9P1</p> </div> </div>

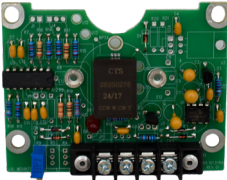
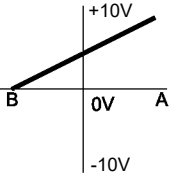
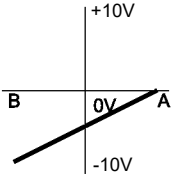
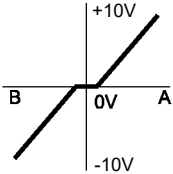
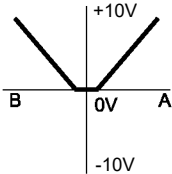
POTENTIOMETERS

Other potentiometers available upon request

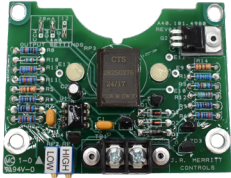
 <p>3-WIRE 5K PART # (W/ BOARD): 04.836</p>	<p>TYPE CTS STYLE Conductive Plastic</p> <p>RATING 0.5 Watt</p>	OR	 <p>4-WIRE 10K PART # (W/ BOARD): 04.821</p>	<p>REVOLUTIONS 2 - 5 Million</p> <p>WIPER CURRENT 0mA to 10mA</p>
 <p>4-WIRE 5K PART # (W/ BOARD): 03.287</p>	<p>TYPE PW55 STYLE Conductive Plastic</p> <p>RATING 3 Watt</p>	OR	 <p>4-WIRE 10K PART # (W/ BOARD): 04.015</p>	<p>REVOLUTIONS 2 - 5 Million</p> <p>WIPER CURRENT 0mA to 10mA</p>

*Lifespan is dependent on the application and environmental conditions

ESS10010 ANALOG AMPLIFIER

	<p>Generates a linear output voltage proportional to the joystick's handle position. Available with 3 or 4-wire pot in the configurations shown below. See ESS10010 literature for more details.</p>	<p>SUPPLY VOLTAGE 18 - 30 VDC</p> <p>STANDARD OUTPUT +/- 10V</p> <p>OUTPUT CURRENT MAX 10 mA</p>	<p>OUTPUT ADJ. RANGE 3.5 - 11VDC</p> <p>OFFSET ADJ. RANGE 0 - +/- 0.1V</p> <p>POTENTIOMETER LIFE 2 - 5 million revolutions</p>			
 <p>0V to +V</p>	OR	 <p>-V to 0V</p>	OR	 <p>-V to +V with Center Deadband</p>	OR	 <p>+V with Center Deadband (requires directional contacts)</p>

4-20 mA TRANSMITTER (2-WIRE CIRCUIT)



Acts as a self powered control card with 4-20 mA output. Transmits a current signal which is proportional to the handle position. See **ESS420 literature** for more details.

ESS420
MODEL #:
 05.317
SUPPLY VOLTAGE:
 12 - 40 VDC

OUTPUT CURRENT
 22 mA (max)
ADJUSTMENT RANGE
 2-22 mA

SIGNAL CONVERTER

DGO-1 (115/50V)
PART #: 04.024

OR

DGO-2 (220/50V)
PART #: 04.025

OR

DGO-3 (115/30V/30V)
WITH ESS030
AC/DC CONVERTER
DGO-3 PART #: 04.030 & 05.638



High life contactless rotary transformers that are ideal for high duty applications where an AC signal is a requirement. See **DGO literature** for more details and specifications.

ROTATION
 +/- 105 degrees
MAX LOAD
 3VA
WEIGHT
 1.43 LB

Converts AC signal to a DC reference signal that commands a variable drive. See **ESS030 literature** for more details.



ENCODER

Other output types available upon request

8-BIT GRAY ENCODER



Produces a gray code digital output in a completely contactless system with high noise immunity. See **8-bit Gray Encoder literature** for more details.

SUPPLY CURRENT
 Typical 100 mA
OUTPUT CURRENT
 Max. 20 mA
MAX SWITCHING FREQ
 50 kHz
RESOLUTION
 255 discrete counts
 in each direction

OR




8-BIT BINARY ENCODER



Produces a digital output in a completely contactless system with high noise immunity. See **Encoder literature** for more details.

SHAFT LENGTH* 4 1/2 IN. [104 MM]	SHAFT DIAMETER 8 MM (STANDARD)
---	---

*Variable based on handle options

HANDLE OPTIONS

BASIC HANDLES	ROUND BALL (DEFAULT) 	MG27 	MECHANICAL INTERLOCK (MI) 
----------------------	--	--	---

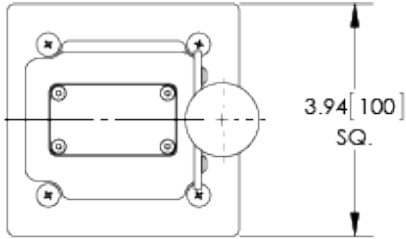
ROCKER HANDLES	<p>RH Rocker handle with handrest and optional:</p> <ul style="list-style-type: none"> ▪ (Top) Rocker Switch ▪ (Top) Momentary Push Button ▪ (Top) Maintained Push Button ▪ (Side) Momentary Push Button <p>HEIGHT: 7.3" [186]</p> 	<p>BH HANDLE Lever handle with optional:</p> <ul style="list-style-type: none"> ▪ (Top) Rocker Switch ▪ (Top) Momentary Push Button ▪ (Side) Lever Actuated Momentary Push Button <p>HEIGHT: 6.8" [173]</p> 
-----------------------	--	---

All dimensions in inches [mm] and are subject to change.

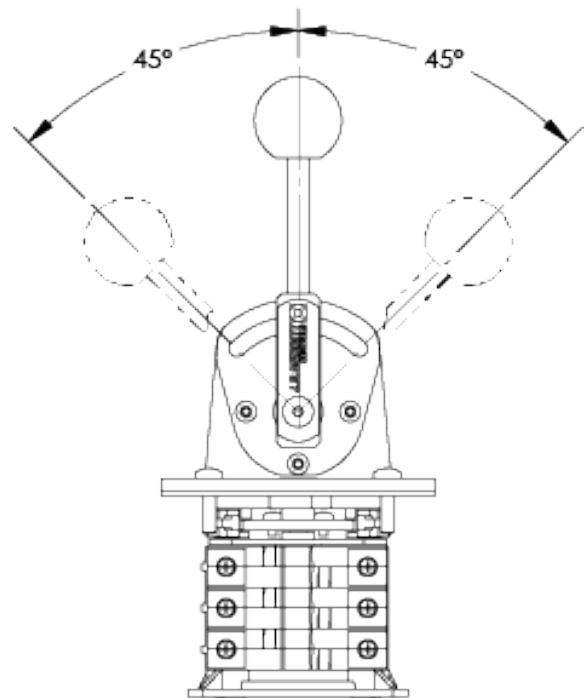
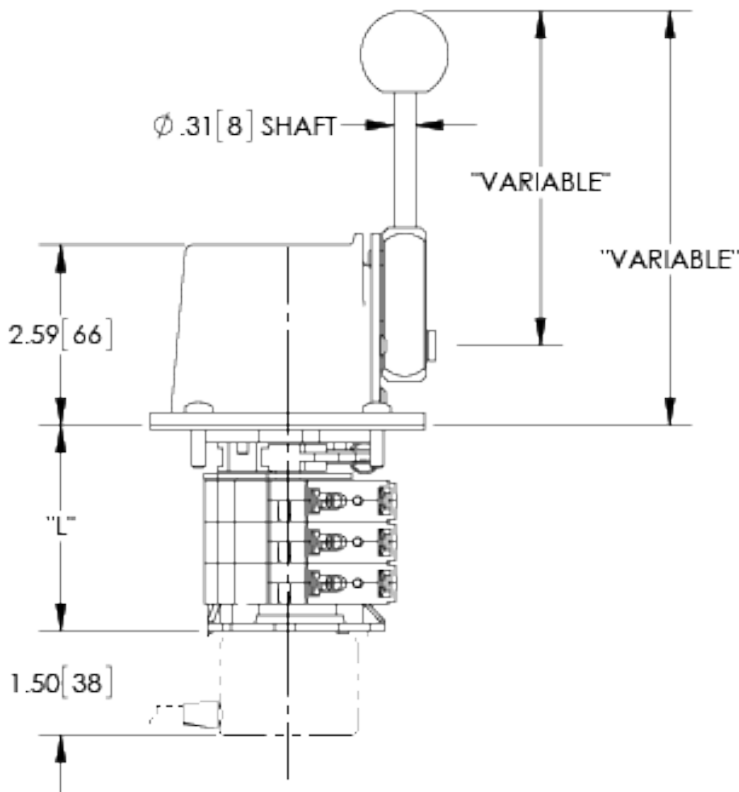
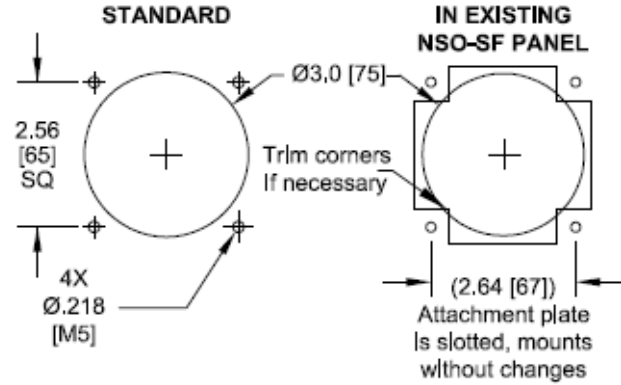
LASER ENGRAVING

Add custom text on the base mounting plate or top plate of the joystick.





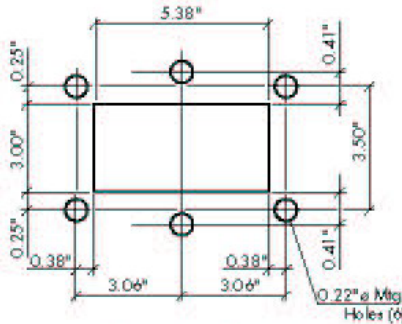
PANEL MOUNTING:



Contact Blocks	1	2	3	4	5	6	7	8	9	10	
Length "L":	in. [mm]	1.57 [40]	2.17 [55]	2.76 [70]	3.35 [85]	3.93 [100]	4.52 [115]	5.12 [130]	5.71 [145]	6.30 [160]	6.89 [175]

COMPATIBLE MOUNTING

HUBBELL - 4211 PANEL HOLE DETAIL



MECHANICAL DETAILS

Gear Ratio

3.3: 1

Detented Positions

0° neutral & 1-0-1 to 7-0-7

Potentiometer Rotation

Up to ±140°

Handle Travel

Up to ±45° max.

Mechanical Life

10 million cycles for maintained action

ENVIRONMENTAL DETAILS

Operating Temperature

-13° to +140° F [-25° to +60°C]

Storage Temperature

-40° to +140° F [-40° to +60°C]

IP Rating

IP65 (above the panel)