

HMS/HLS Series Heavy Duty Limit Switches

Features

- Heavy duty zinc die cast body
- Conform to EN 60947-5-1, IEC 60947-5-1, UL508, NEMA250, CSA22.2 Standards
- Wide range of actuator available
- High repeatability (0.03mm for linear travel)
- Available in three body styles: compact, standard and explosion-proof

Specifications

Operating Speed	0.05mm-2m/sec
Rated Current/Voltage	10A/600V AC (EN60947-5-1) AC15 A600 / DC13 Q300
Service Life	Mechanically 10 millions (operations) Electrically 1 million (operations)
Operating Temperature	-28.9~+85°C (-20~185°F)
Vibration Resistance	25gn (10..150 Hz, 11ms) per IEC60068-2-6
Shock Resistance	60gn (9ms) per IEC 60068-2-27
Dielectric Strength	2200VAC for 1 minute
Short Circuit Protection	10A fuse
Terminal Wire Size	12-22AWG (2.05-0.644mm ²)
Degree of Protection	IP 67 conforming to IEC 60529, NEMA Types 2, 4, 6, 6P, 12, 13

Electrical Ratings

Designation & Utilization Category	IEC 60947-5-1 / EN 60947-5-1					VA rating	
	Rated operational current Ie (A) at rated operational voltage Ue					Make	Break
	120V	240V	380V	480V	600V		
AC15 A600	6	3	1.9	1.5	1.2	7200	720
DC13 Q300	125VDC 250VDC 0.55 0.27					69	69

* Wider operating temperature models are available. Please contact us.

HMS Compact

HLS Standard



Selection Guide:

HLS	1	A	04	A	-	F	
Body Styles	Contact Block	1/2NPT Conduit (Contact us for other types)	Head Style	Applied on to Lever Arms Style		Rubber seal type	Rotary head shaft diameter
<ul style="list-style-type: none"> HMS: Compact HLS: Standard 	<ul style="list-style-type: none"> 1: SPDT (1NO/1NC) Snap action 2: DPDT (2NO/2NC) Snap action 3: DPDT (2NO/2NC) 2 stages 4: DPDT (2NO/2NC) center neutral operation 		<ul style="list-style-type: none"> 2 digit or 2 digit + 1 letter 	<ul style="list-style-type: none"> B: Standard A: High precision N: Low torque D: High precision low torque C: Maintained TB: Neutral Position TA: Neutral Position (High Precision) 		<ul style="list-style-type: none"> Blank: Standard F: Fluorite Rubber 	<ul style="list-style-type: none"> Blank: 11.0mm (AB): 8.0mm (CH): 7.0mm (HW): 7.3mm

HMS/HLS Series Heavy Duty Limit Switches

Plunger type

01 Style



12 Style



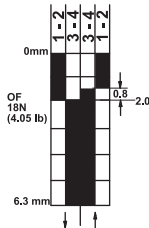
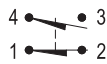
11 Style



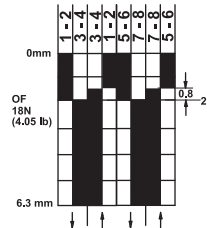
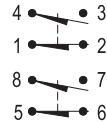
13 styles



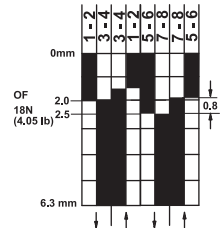
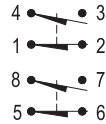
HMS-1A/
HLS-1A
1NO/1NC



HMS-2A/
HLS-2A
2NO/2NC



HMS-3A/
HLS-3A
2NO/2NC (2-stages)



* Note: Operating Force (OF) is 31.1N (7 lb) for Plunger type 01 style.

Side Plunger type

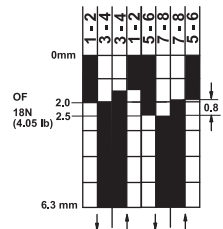
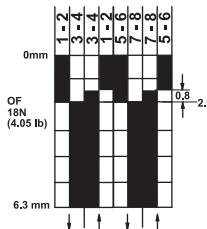
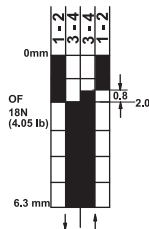
11H styles



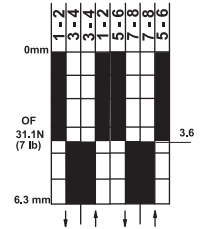
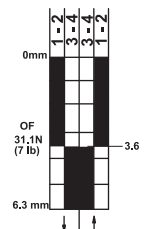
12H styles



13H styles



Side Plunger (Maintained) type 10H styles



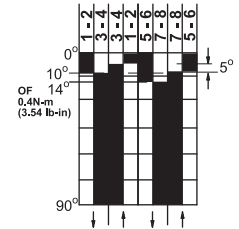
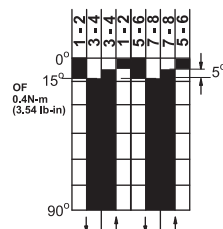
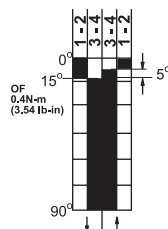
Spring coil type



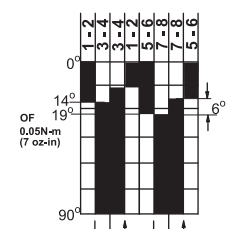
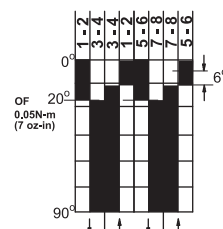
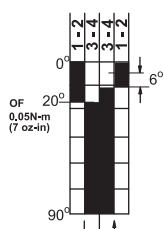
00

66

69



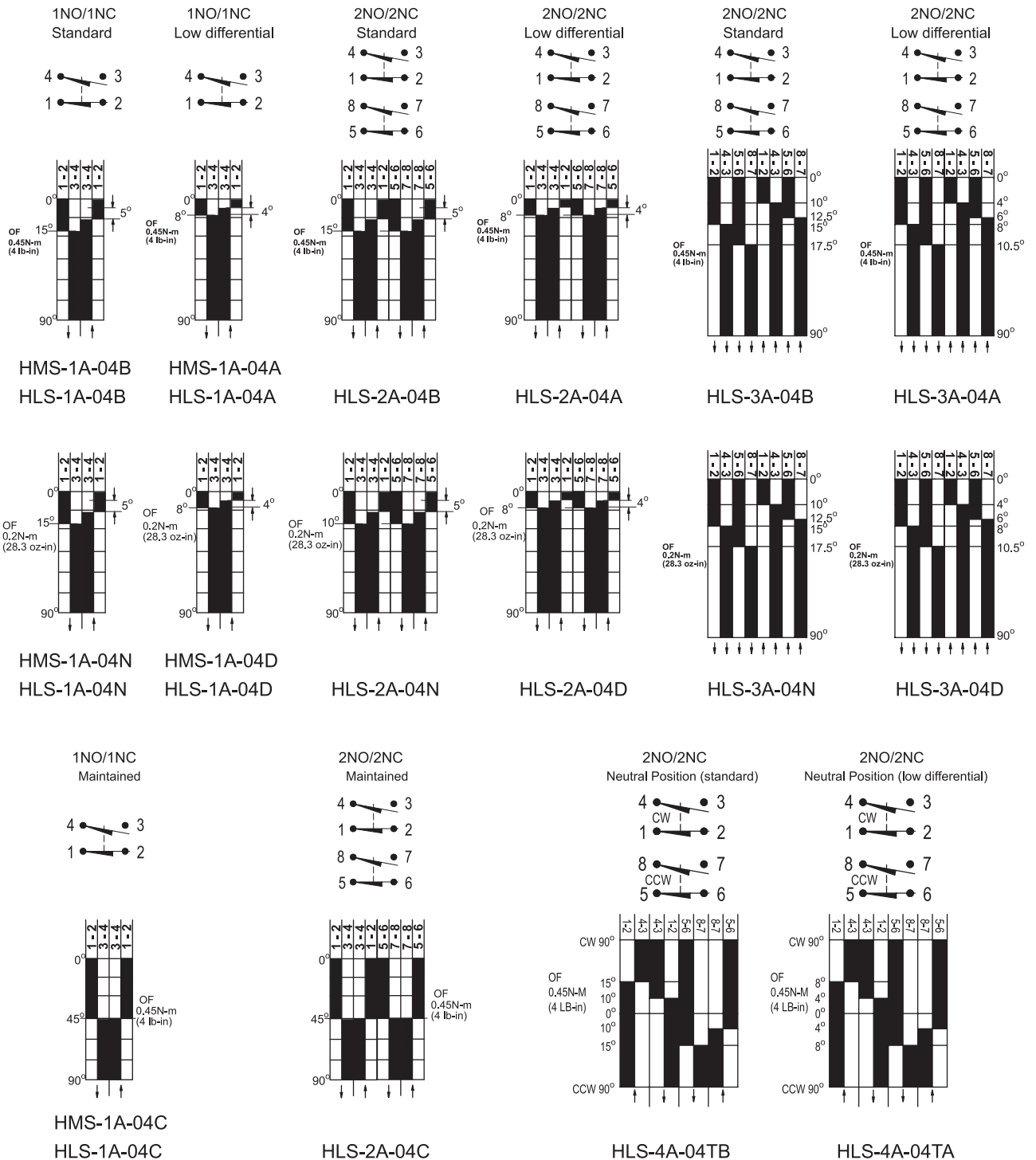
Cat Whisker type 68 Style



HMS/HLS Series Heavy Duty Limit Switches



Travel Diagram for Rotary Lever Styles



HMS Series Heavy Duty Limit Switches

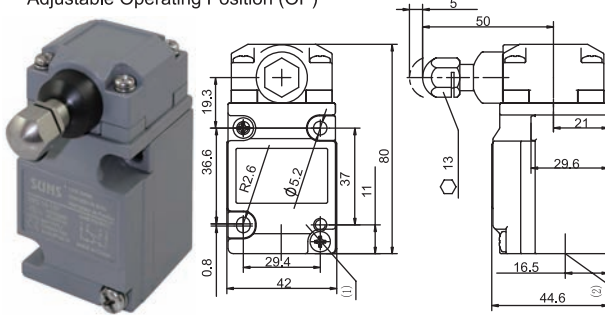
<p>Order Code HMS-1A-11: 1NO/1NC</p>	<p>Order Code HMS-1A-12: 1NO/1NC</p>
<p>Adjustable Operating Position (OP)</p>	
<p>Order Code HMS-1A-13: 1NO/1NC</p>	<p>Order Code HMS-1A-01: 1NO/1NC</p>
<p>Order Code HMS-1A-11H: 1NO/1NC</p>	<p>Order Code HMS-1A-12H: 1NO/1NC * Note: roller can be adjust to cross orientation</p>

Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

HMS Series Heavy Duty Limit Switches

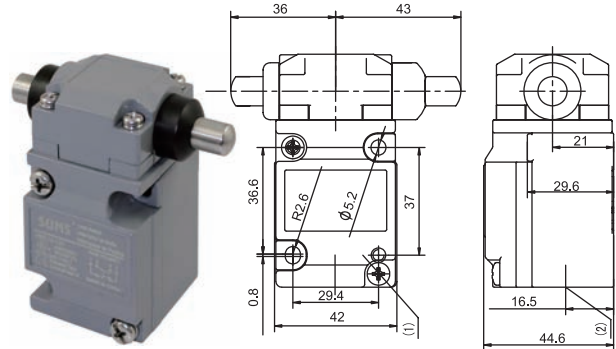
Adjustable Operating Position (OP)



Order Code

HMS-1A-13H: 1NO/1NC

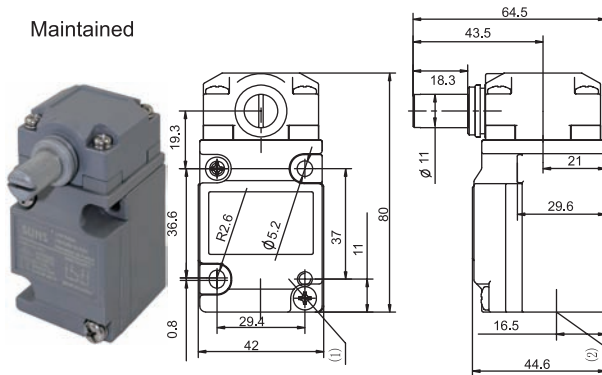
Maintained



Order Code

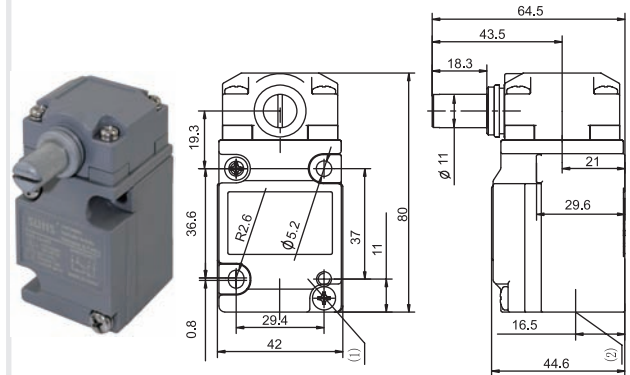
HMS-1A-10H: 1NO/1NC

Maintained



Order Code

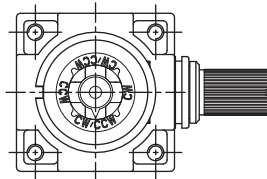
HMS-1A-04C: 1NO/1NC



Order Code

HMS-1A-04B: 1NO/1NC Standard Pretravel
 HMS-1A-04A: 1NO/1NC Low Pretravel
 HMS-1A-04N: 1NO/1NC Low Torque
 HMS-1A-04D: 1NO/1NC Low Torque, Low Pretravel

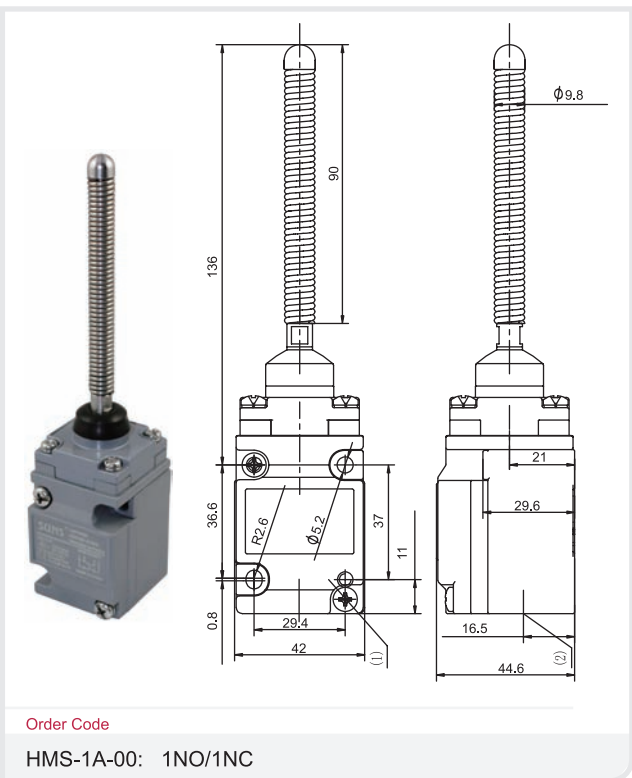
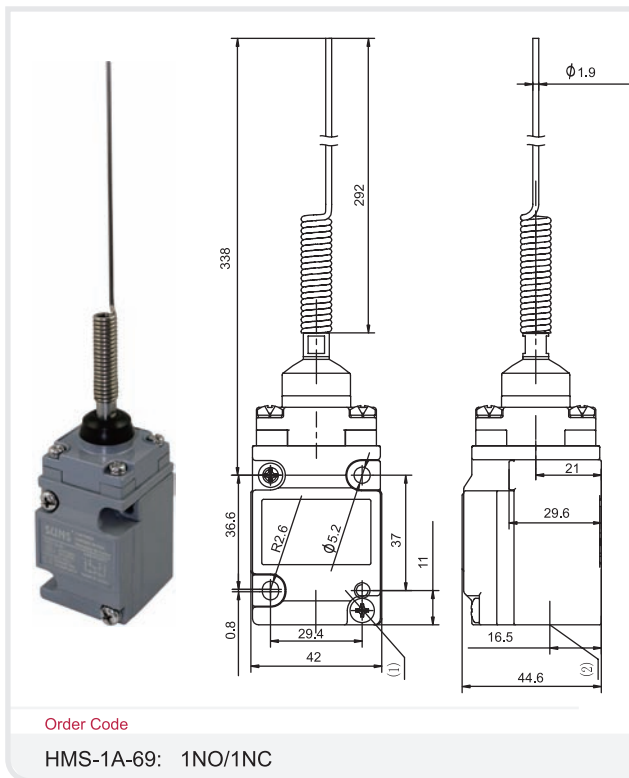
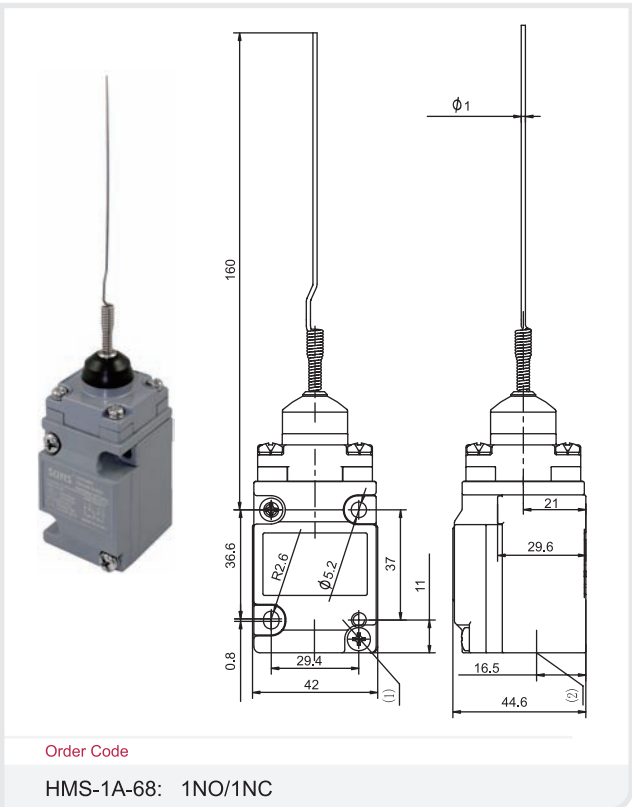
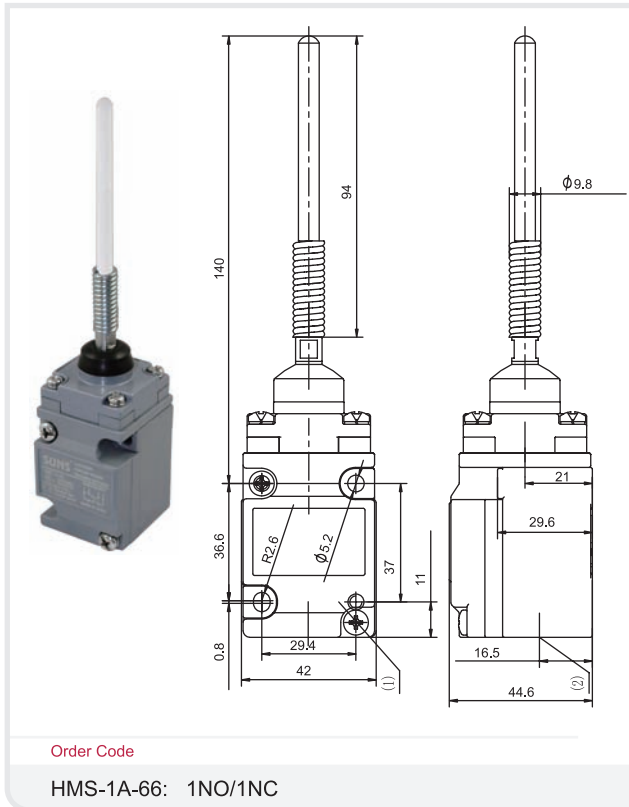
Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.



Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

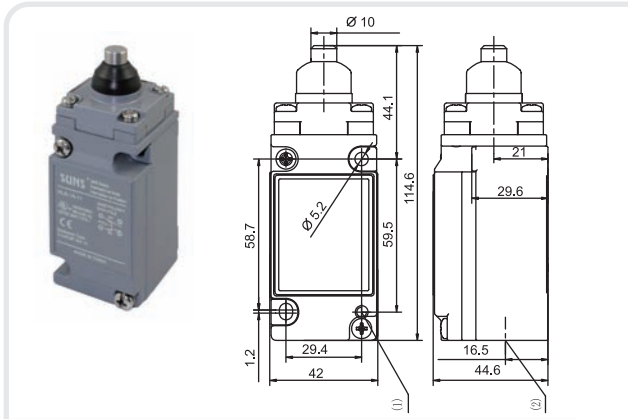
(2) Conduit opening type: 1/2NPT

HMS Series Heavy Duty Limit Switches



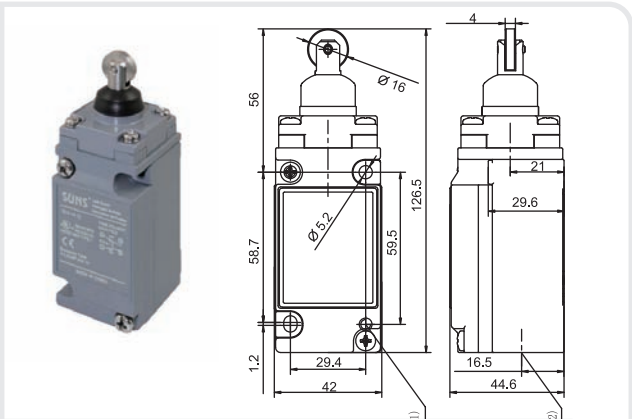
Note. (1) 2 x 10-24 UNC hole on the back for back side mounting. (2) Conduit opening type: 1/2NPT

HLS Series Heavy Duty Limit Switches



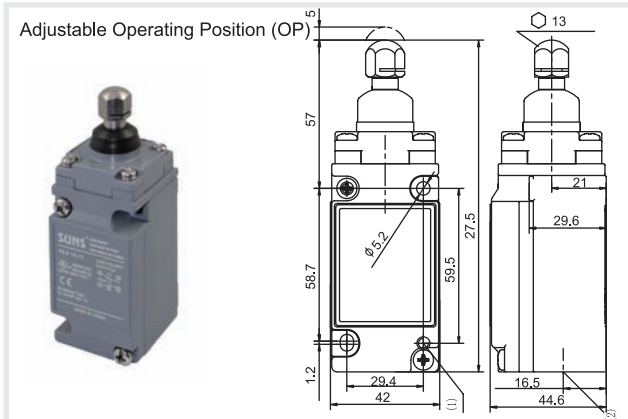
Order Code

- HLS-1A-11: 1NO/1NC
- HLS-2A-11: 2NO/2NC
- HLS-3A-11: 2NO/2NC (2-stage)



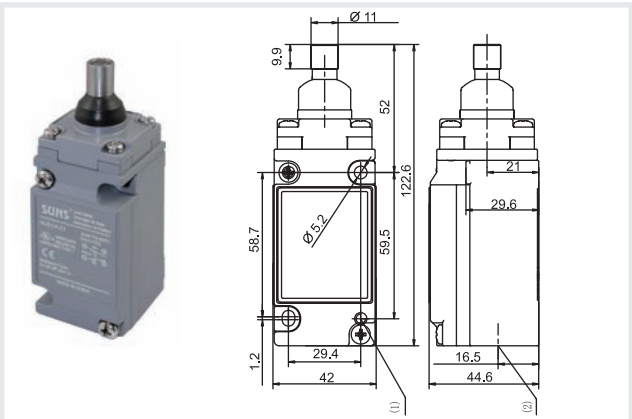
Order Code

- HLS-1A-12: 1NO/1NC
- HLS-2A-12: 2NO/2NC
- HLS-3A-12: 2NO/2NC (2-stage)



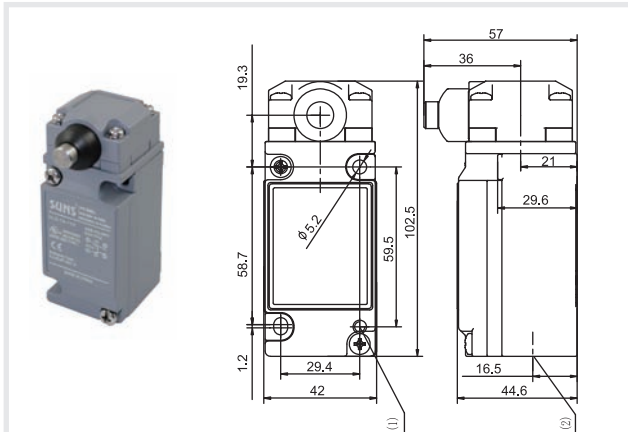
Order Code

- HLS-1A-13: 1NO/1NC
- HLS-2A-13: 2NO/2NC
- HLS-3A-13: 2NO/2NC (2-stage)



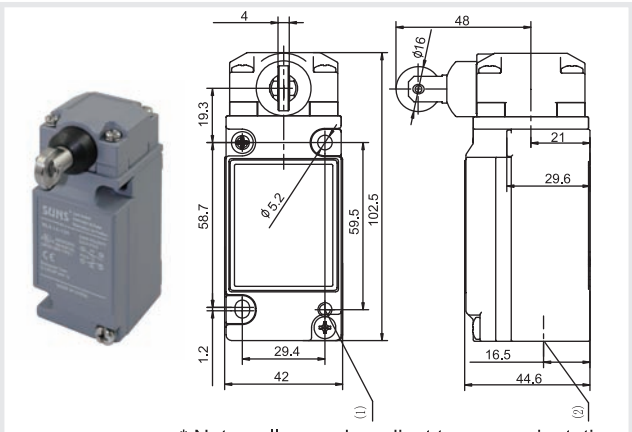
Order Code

- HLS-1A-01: 1NO/1NC
- HLS-2A-01: 2NO/2NC
- HLS-3A-01: 2NO/2NC (2-stage)



Order Code

- HLS-1A-11H: 1NO/1NC
- HLS-2A-11H: 2NO/2NC
- HLS-3A-11H: 2NO/2NC (2-stage)



* Note: roller can be adjust to cross orientation

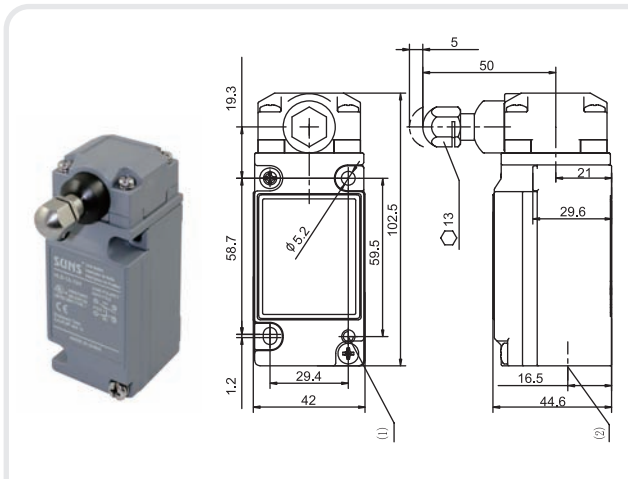
Order Code

- HLS-1A-12H: 1NO/1NC
- HLS-2A-12H: 2NO/2NC
- HLS-3A-12H: 2NO/2NC (2-stage)

Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

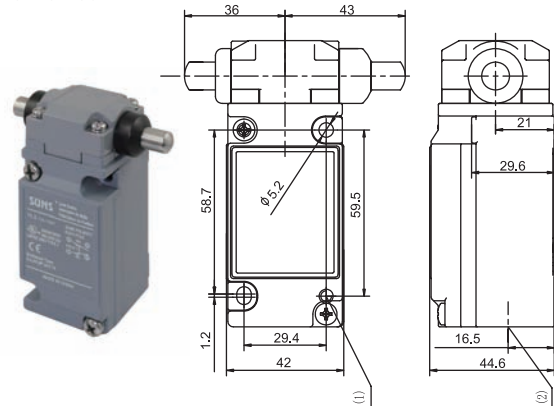
HLS Series Heavy Duty Limit Switches



Order Code

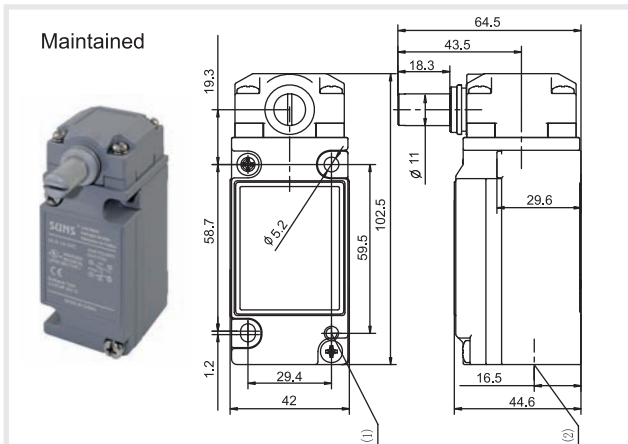
HLS-1A-13H: 1NO/1NC
 HLS-2A-13H: 2NO/2NC
 HLS-3A-13H: 2NO/2NC (2-stage)

Maintained



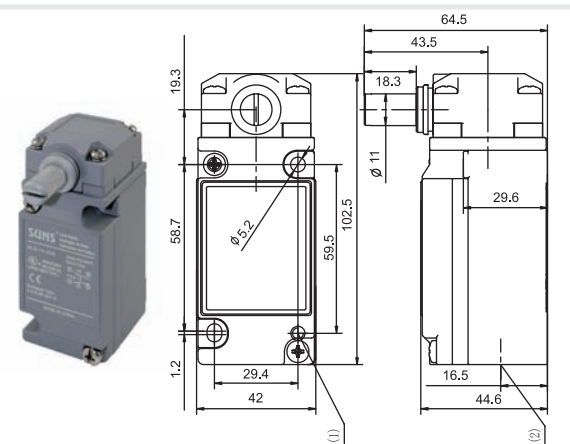
Order Code

HLS-1A-10H: 1NO/1NC
 HLS-2A-10H: 2NO/2NC



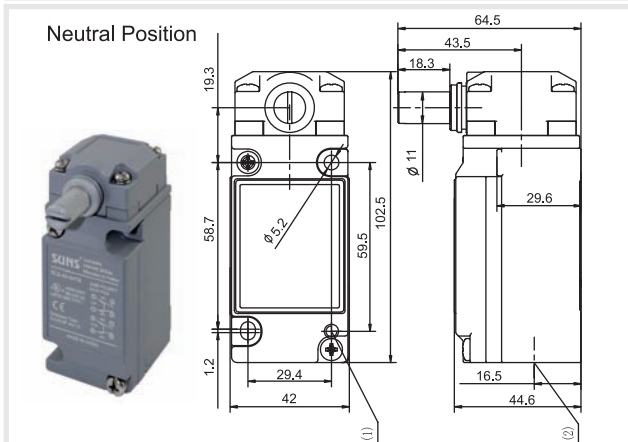
Order Code

HLS-1A-04C: 1NO/1NC
 HLS-2A-04C: 2NO/2NC



Order Code

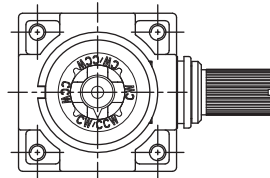
HLS-1A-04B: 1NO/1NC Standard Pretravel
 HLS-1A-04A: 1NO/1NC Low Pretravel
 HLS-1A-04N: 1NO/1NC Low Torque
 HLS-1A-04D: 1NO/1NC Low Torque, Low Pretravel
 HLS-2A-04B: 2NO/2NC Standard Pretravel
 HLS-2A-04A: 2NO/2NC Low Differential Travel
 HLS-2A-04N: 2NO/2NC Low Torque
 HLS-2A-04D: 2NO/2NC Low Torque, Low Pretravel
 HLS-3A-04B: 2NO/2NC (2-stage) Standard Pretravel
 HLS-3A-04A: 2NO/2NC (2-stage) Low Pretravel
 HLS-3A-04N: 2NO/2NC (2-stage) Low Torque
 HLS-3A-04D: 2NO/2NC (2-stage) Low Torque, Low Differential Travel



Order Code

HLS-4A-04TA: 2NO/2NC (Low Pretravel)
 HLS-4A-04TB: 2NO/2NC

Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.



Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

HLS Series Heavy Duty Limit Switches

Order Code

HLS-1A-66: 1NO/1NC
 HLS-2A-66: 2NO/2NC
 HLS-3A-66: 2NO/2NC (2-stage)

Order Code

HLS-1A-68: 1NO/1NC
 HLS-2A-68: 2NO/2NC
 HLS-3A-68: 2NO/2NC (2-stage)

Order Code

HLS-1A-69: 1NO/1NC
 HLS-2A-69: 2NO/2NC
 HLS-3A-69: 2NO/2NC (2-stage)

Order Code

HLS-1A-00: 1NO/1NC
 HLS-2A-00: 2NO/2NC
 HLS-3A-00: 2NO/2NC (2-stage)

Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

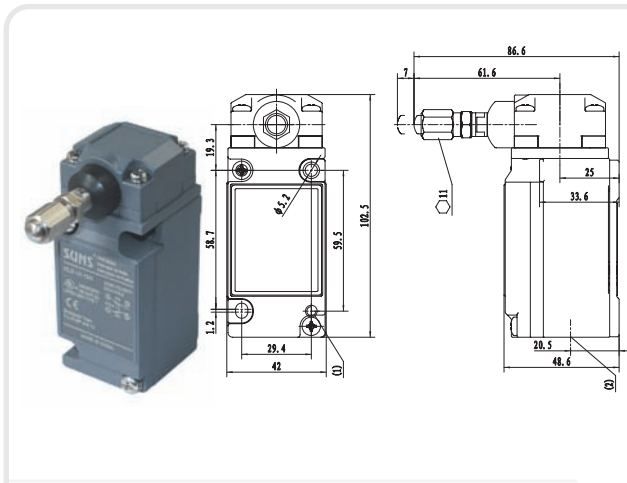
HLS (AB) Series Heavy Duty Limit Switches

<p>Order Code</p> <p>HLS-1A-11(AB): 1NO/1NC HLS-2A-11(AB): 2NO/2NC HLS-3A-11(AB): 2NO/2NC (2-stage)</p>	<p>Order Code</p> <p>HLS-1A-12(AB): 1NO/1NC HLS-2A-12(AB): 2NO/2NC HLS-3A-12(AB): 2NO/2NC (2-stage)</p>
<p>Adjustable Operating Position (OP)</p>	
<p>Order Code</p> <p>HLS-1A-13(AB): 1NO/1NC HLS-2A-13(AB): 2NO/2NC HLS-3A-13(AB): 2NO/2NC (2-stage)</p>	<p>Order Code</p> <p>HLS-1A-01(AB): 1NO/1NC HLS-2A-01(AB): 2NO/2NC HLS-3A-01(AB): 2NO/2NC (2-stage)</p>
<p>Order Code</p> <p>HLS-1A-11H(AB): 1NO/1NC HLS-2A-11H(AB): 2NO/2NC HLS-3A-11H(AB): 2NO/2NC (2-stage)</p>	<p>Order Code</p> <p>HLS-1A-12H(AB): 1NO/1NC HLS-2A-12H(AB): 2NO/2NC HLS-3A-12H(AB): 2NO/2NC (2-stage)</p>

* Note: roller can be adjust to cross orientation

Note. (1) 2 x 10-24 UNC hole on the back for back side mounting. (2) Conduit opening type: 1/2NPT

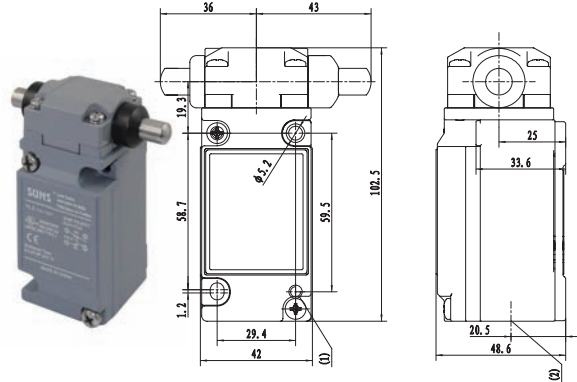
HLS(AB) Series Heavy Duty Limit Switches



Order Code

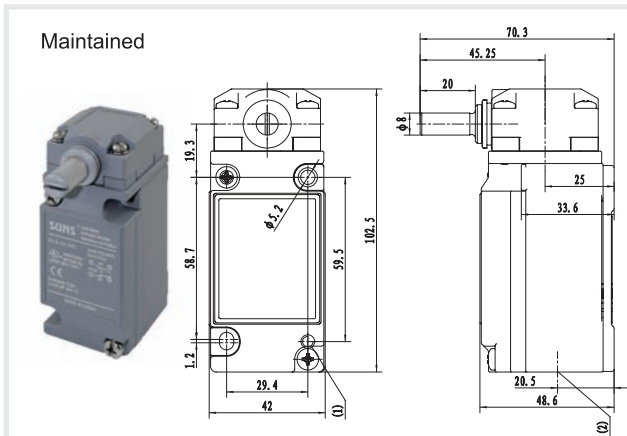
- HLS-1A-13H(AB): 1NO/1NC
- HLS-2A-13H(AB): 2NO/2NC
- HLS-3A-13H(AB): 2NO/2NC (2-stage)

Maintained



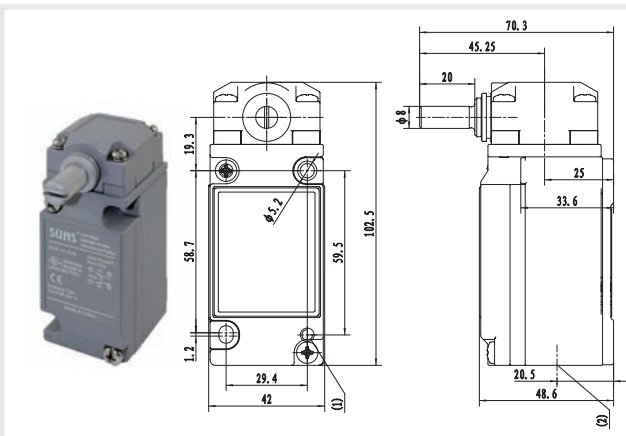
Order Code

- HLS-1A-10H(AB): 1NO/1NC
- HLS-2A-10H(AB): 2NO/2NC



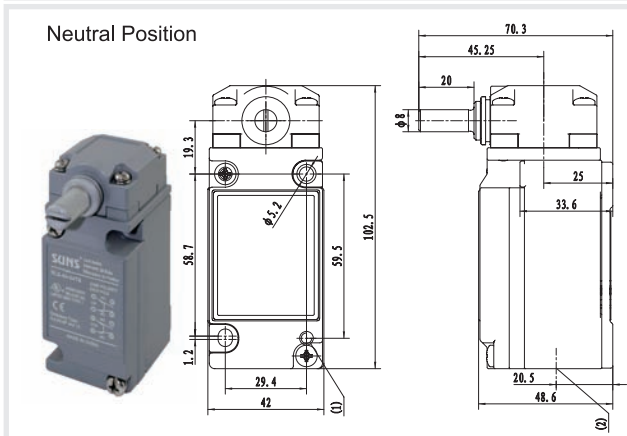
Order Code

- HLS-1A-04C(AB): 1NO/1NC
- HLS-2A-04C(AB): 2NO/2NC



Order Code

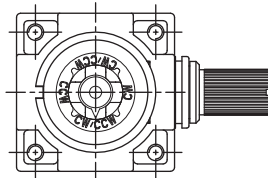
- HLS-1A-04B(AB): 1NO/1NC Standard Pretravel
- HLS-1A-04A(AB): 1NO/1NC Low Pretravel
- HLS-1A-04N(AB): 1NO/1NC Low Torque
- HLS-1A-04D(AB): 1NO/1NC Low Torque, Low Pretravel
- HLS-2A-04B(AB): 2NO/2NC Standard Pretravel
- HLS-2A-04A(AB): 2NO/2NC Low Differential Travel
- HLS-2A-04N(AB): 2NO/2NC Low Torque
- HLS-2A-04D(AB): 2NO/2NC Low Torque, Low Pretravel
- HLS-3A-04B(AB): 2NO/2NC (2-stage) Standard Pretravel
- HLS-3A-04A(AB): 2NO/2NC (2-stage) Low Pretravel
- HLS-3A-04N(AB): 2NO/2NC (2-stage) Low Torque
- HLS-3A-04D(AB): 2NO/2NC (2-stage) Low Torque, Low Differential Travel



Order Code

- HLS-4A-04TA(AB): 2NO/2NC (Low Pretravel)
- HLS-4A-04TB(AB): 2NO/2NC

Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.



Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

HLS (AB) Series Heavy Duty Limit Switches

<p>Order Code HLS-1A-66(AB): 1NO/1NC HLS-2A-66(AB): 2NO/2NC HLS-3A-66(AB): 2NO/2NC (2-stage)</p>	<p>Order Code HLS-1A-68(AB): 1NO/1NC HLS-2A-68(AB): 2NO/2NC HLS-3A-68(AB): 2NO/2NC (2-stage)</p>

<p>Order Code HLS-1A-69(AB): 1NO/1NC HLS-2A-69(AB): 2NO/2NC HLS-3A-69(AB): 2NO/2NC (2-stage)</p>	<p>Order Code HLS-1A-00(AB): 1NO/1NC HLS-2A-00(AB): 2NO/2NC HLS-3A-00(AB): 2NO/2NC (2-stage)</p>

Note. (1) 2 x 10-24 UNC hole on the back for back side mounting. (2) Conduit opening type: 1/2NPT

Levers for Rotary Heads (HMS/HLS/HES Heavy Duty Limit Switches)



Cast Aluminum Lever Arms with Roller

Add '-P' suffix for nylon roller (following part numbers are with steel roller)

Arm Length in. (mm)	Roller Diameter in. (mm)	Roller Width in. (mm)	Part Number
1.38 (35)	0.75 (19)	0.25 (6.3)	H-04B1
		0.63 (16)	H-04B2
	0.63 (16)	0.25 (6.3)	H-04B3
		0.63 (16)	H-04B4
		1 (25.4)	H-04B5
1.5 (38)	0.75 (19)	0.25 (6.3)	H-04C1
		0.63 (16)	H-04C2
	0.63 (16)	0.25 (6.3)	H-04C3
		0.63 (16)	H-04C4
2 (51)	0.75 (19)	0.25 (6.3)	H-04D1
		0.63 (16)	H-04D2
	0.63 (16)	0.25 (6.3)	H-04D3
		0.63 (16)	H-04D4
2.5 (63.5)	0.75 (19)	0.25 (6.3)	H-04E1
		0.63 (16)	H-04E2
	0.63 (16)	0.25 (6.3)	H-04E3
		0.63 (16)	H-04E4
3 (76)	0.75 (19)	0.25 (6.3)	H-04F1
		0.63 (16)	H-04F2
	0.63 (16)	0.25 (6.3)	H-04F3
		0.63 (16)	H-04F4

* Mounting hole center to roller center distance



90° Forked Cast Aluminum Lever Arms with Roller

Add '-P' suffix for nylon roller (following part numbers are with steel roller)

Arm Length in. (mm)	Roller Position	Roller		Part Number
		Diameter in. (mm)	Width in. (mm)	
1.5 (38)	Rollers on same side	0.75 (19)	0.25 (6.3)	H-05-1
		0.63 (16)	0.25 (6.3)	H-05-3
	R.H. Rollers on opposite side	0.75 (19)	0.25 (6.3)	H-05-1RH
		0.63 (16)	0.25 (6.3)	H-05-3RH
	L.H. Rollers on opposite side	0.75 (19)	0.25 (6.3)	H-05-1LH
		0.63 (16)	0.25 (6.3)	H-05-3LH

* Mounting hole center to roller center distance



Adjustable Length Lever Arm with Steel Roller

Lever Length in. (mm)	Roller Dia. in. (mm)	Roller Width in. (mm)	Part Number
Non-bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08-3
	0.63 (16)	0.63 (16)	H-08-4
Bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08B-3
	0.63 (16)	0.63 (16)	H-08B-4

Adjustable Length Lever Arm with Nylon Roller

Lever Length in. (mm)	Roller Dia. in. (mm)	Roller Width in. (mm)	Part Number
Non-bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08-3P
	1 (25.4)	0.63 (16)	H-08-5P
Bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08B-3P
	1.0 (25.4)	0.63 (16)	H-08B-5P
	2 (51)	0.25 (6.3)	H-08B-6P

* Mounting hole center to roller center distance

* For used with 11mm shaft (suffix blank); 7.0mm and 7.3mm shaft (suffix -HW); and 8.0mm shaft (suffix -AB)

Levers for Rotary Heads (HMS/HLS/HES Heavy Duty Limit Switches)

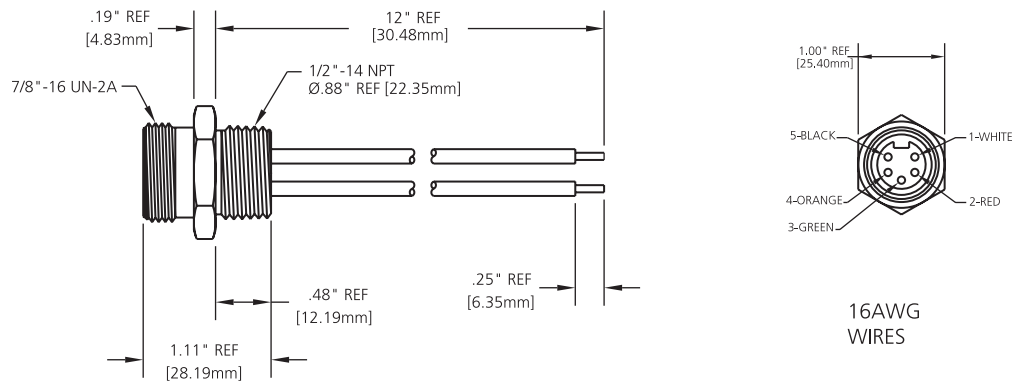


Rod Type Lever Arms

Description	Length in. (mm)	Part Number
Stainless Steel Rod	10 (254)	H-07-10
Spring Rod, Steel	12 (304)	H-07S-12
Spring Rod, Delrin	12 (304)	H-07P-12
Looped Delrin Rod Arm	-	H-06

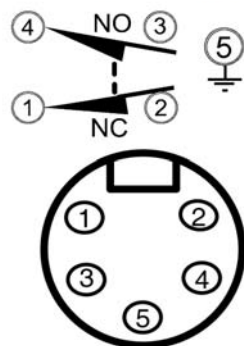
* For used with 11mm shaft (suffix blank); 7.0mm and 7.3mm shaft (suffix -HW); and 8.0mm shaft (suffix -AB)

NPT12-16-5P MALE STRAIGHT WITH 1/2" - 14NPT THREADS (5-PIN)



For prewired limit switches with NPT-12-16-5P connector, add -Q1 or -Q9 suffix

-Q1: wiring diagram



-Q9: wiring diagram

