

HMS/HLS/HNS 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 Non-plug-in

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

IEC 60947-5-1 / EN 90947-5-1						
Designation & Utilization Category	Rated operational current I _e (A) at rated operational voltage U _e					VA rating Make Break
AC15 A600	120V 6A	240V 3A	380V 1.9A	480V 1.5A	600V 1.2A	7200 720
DC13 Q300	125VDC 0.55	250VDC 0.27				69 69

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

HMS
Compact



HLS
Standard



HNS
Non-plug-in



Selection Guide:

HLS	1	A	04	A	-	F	-	UR	
Body Styles	Contact Block	1/2NPT Conduit (Contact us for other types)	Head Style	Applied on to Lever Arms Style	Rubber Seal Type	Indicator Light	Rotary Head Shaft Diameter		
HMS: Compact	1: SPDT (1NO/1NC) Snap action			B: Standard	Blank: Standard	Blank: None	Blank: 11.0mm		
HLS: Standard	2: DPDT (2NO/2NC) Snap action			A: High precision	F: Fluorite rubber	UR: Red indicator light universal voltage(12V-270V)	(AB): 8.0mm		
HNS: Non-plug-in	3: DPDT (2NO/2NC) 2 stages			N: Low torque			(CH): 7.0mm		
	4: DPDT (2NO/2NC) center neutral operation			D: High precision low torque			(HW): 7.3mm		
	5: 4NO Slow action (for HNS only)		2 digit or 2 digit + 1 letter	C: Maintained					
	6: 3NO/1NC Slow action (for HNS only)			TB: Neutral position					
	7: 2NO/2NC Slow action (for HNS only)			TA: Neutral position (high precision)					
	8: 1NO/3NC Slow action (for HNS only)			E: 360° rotation					
	9: 4NC Slow action (for HNS only)								

HMS/HLS Series Heavy Duty Limit Switches

Plunger type

01 Styles



11 Styles



12 Styles



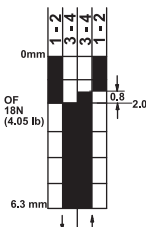
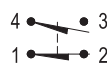
13 Styles



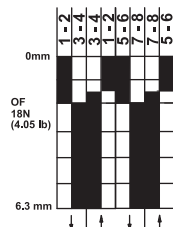
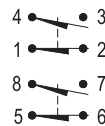
05 Styles



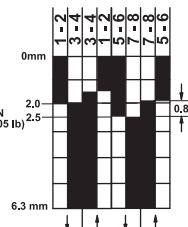
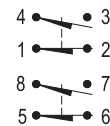
HMS-1A/
HLS-1A
1NO/1NC



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

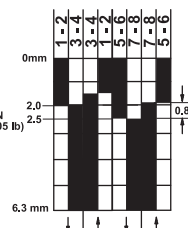
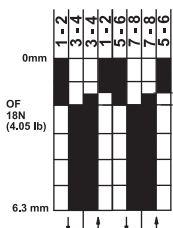
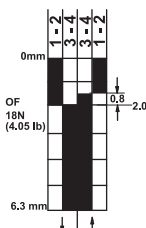
11H Styles



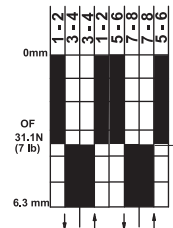
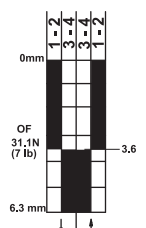
12H Styles



13H Styles



Side Plunger (Maintained) type 10H Styles



ON OFF

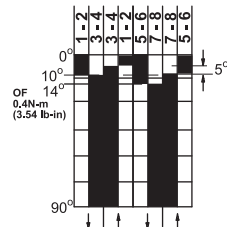
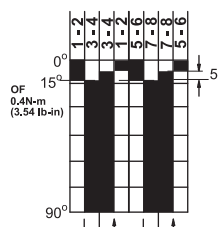
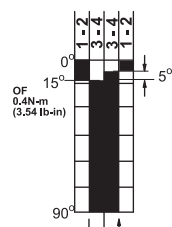
Spring coil type



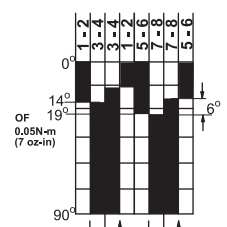
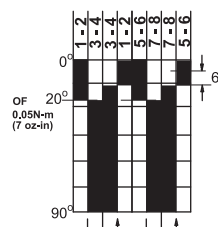
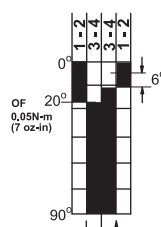
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66

69

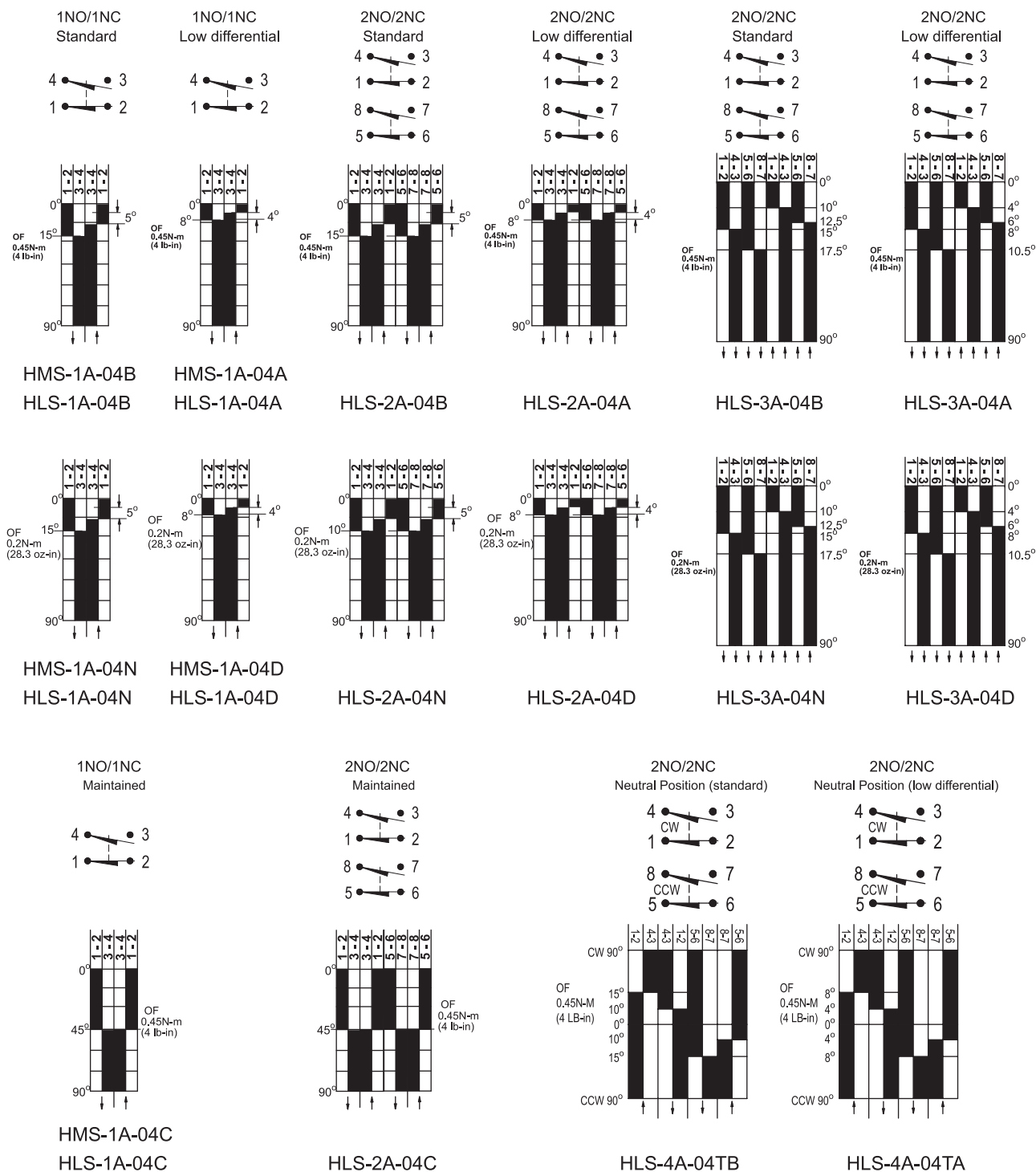


Cat Whisker type 68 Styles

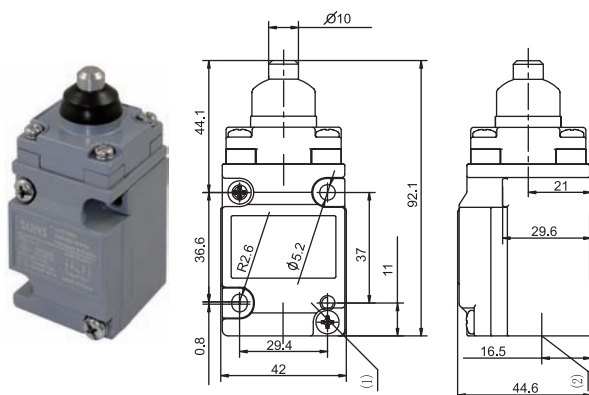


HMS/HLS Series Heavy Duty Limit Switches

Travel Diagram for Rotary Lever Styles

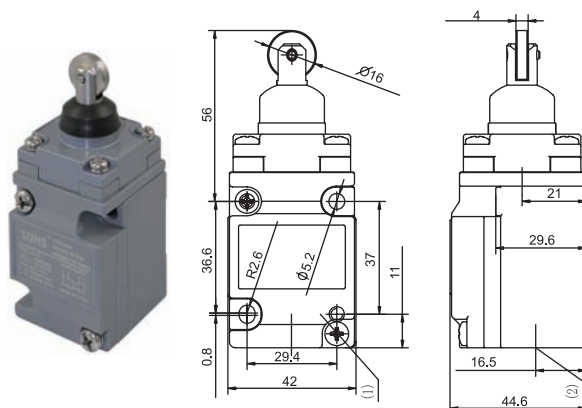


HMS Series Heavy Duty Limit Switches



Order Code

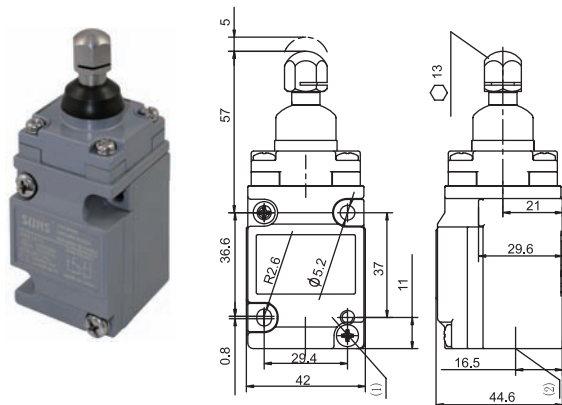
HMS-1A-11: 1NO/1NC



Order Code

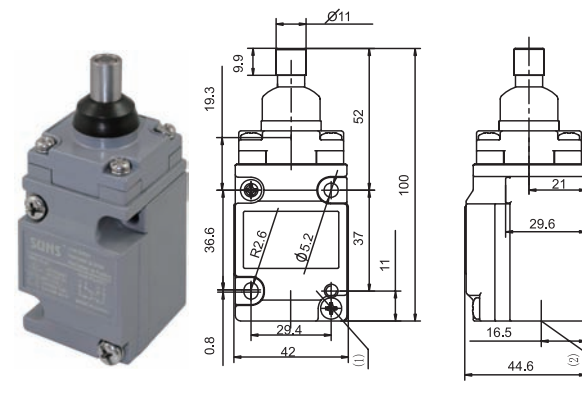
HMS-1A-12: 1NO/1NC

Adjustable Operating Position (OP)



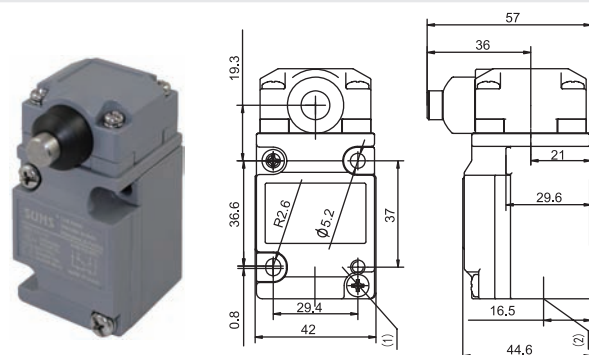
Order Code

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



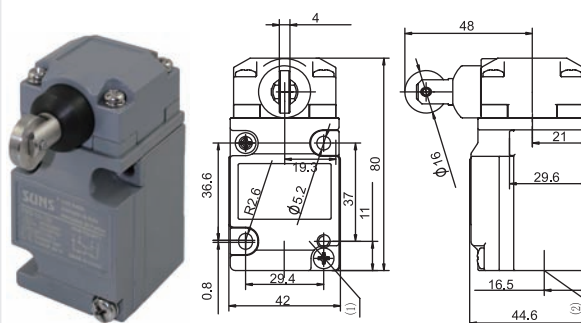
Order Code

HMS-1A-01: 1NO/1NC



Order Code

HMS-1A-11H: 1NO/1NC



Order Code

HMS-1A-12H: 1NO/1NC

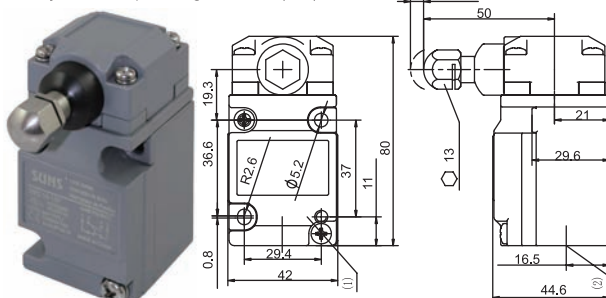
* Note: roller can be adjust to cross orientation

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

(2) Conduit opening type: 1/2NPT

HMS Series Heavy Duty Limit Switches

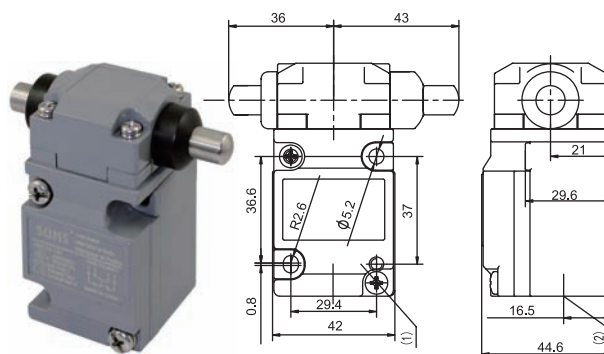
Adjustable Operating Position (OP)



Order Code

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

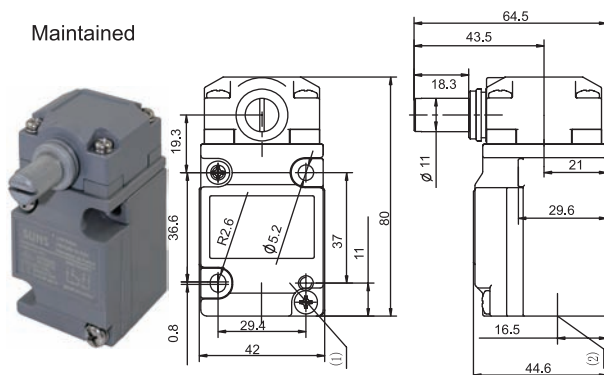
Maintained



Order Code

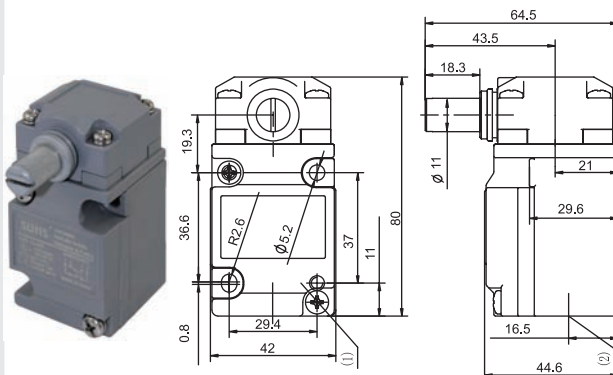
HMS-1A-10H: 1NO/1NC

Maintained



Order Code

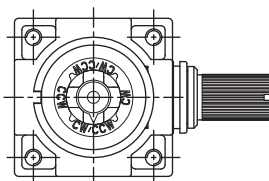
HMS-1A-04C: 1NO/1NC



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

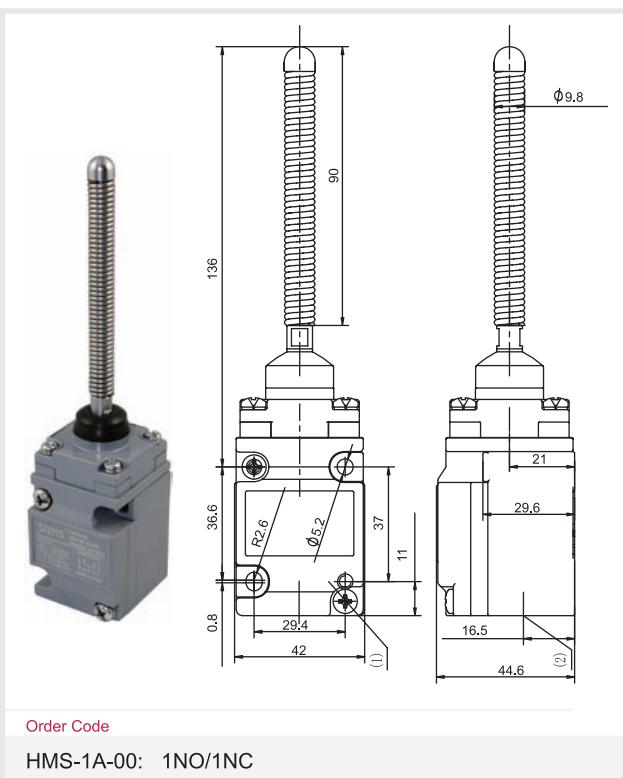
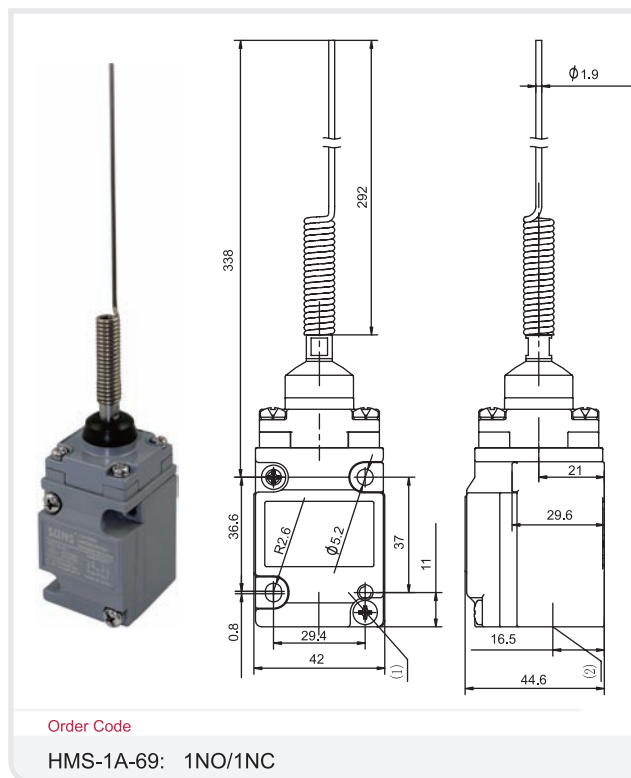
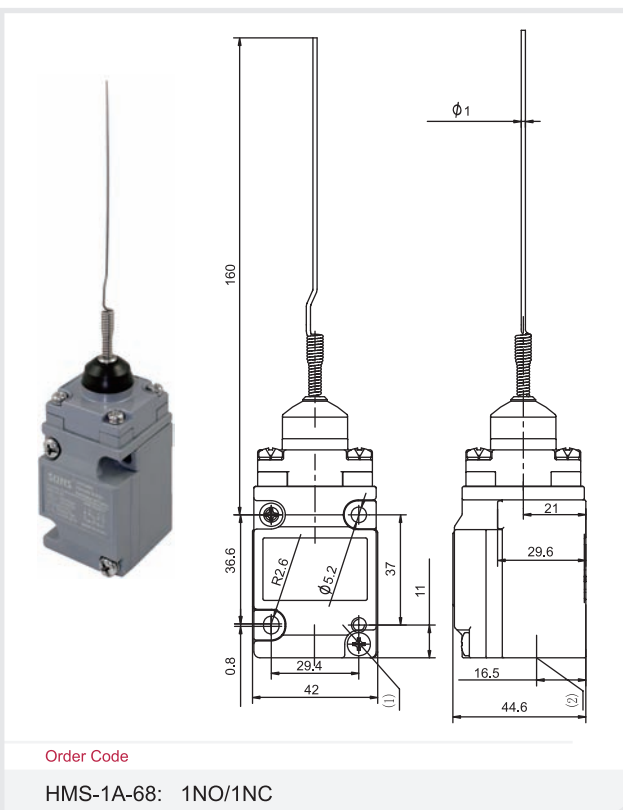
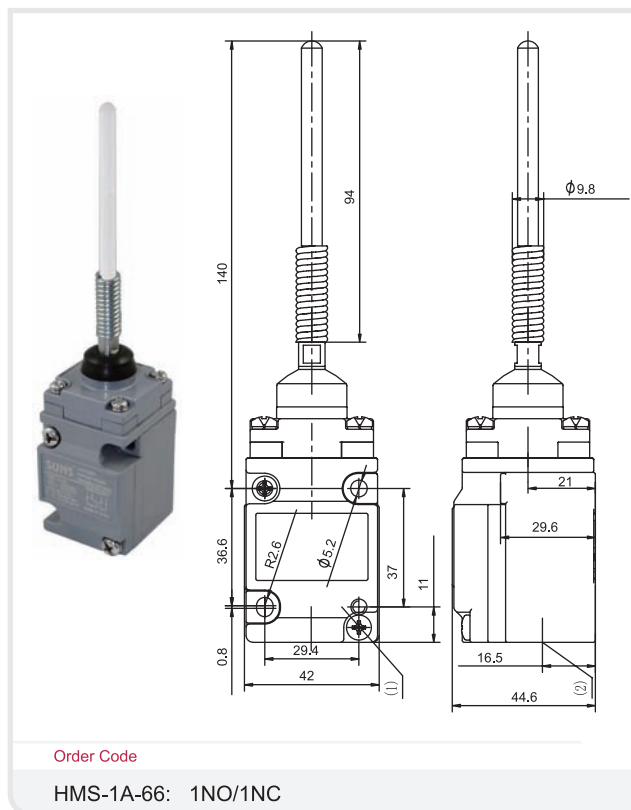
Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.



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

(2) Conduit opening type: 1/2NPT

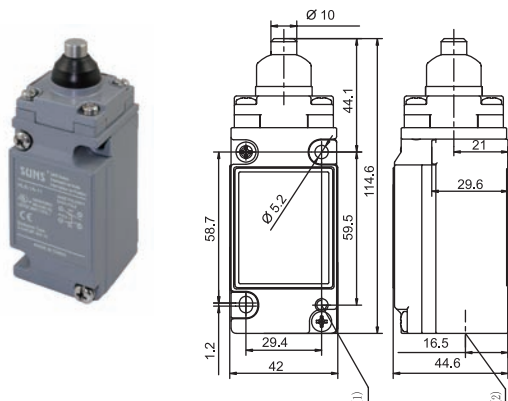
HMS Series Heavy Duty Limit Switches



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

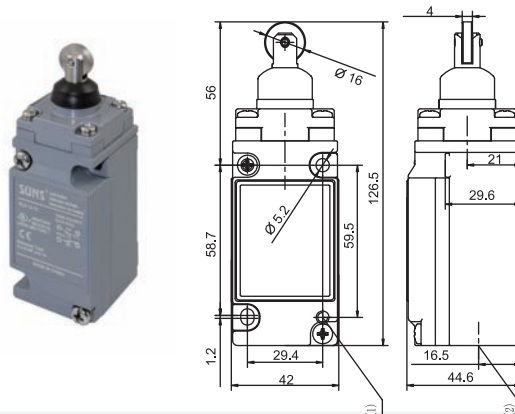
(2) Conduit opening type: 1/2NPT

HLS Series Heavy Duty Limit Switches



Order Code

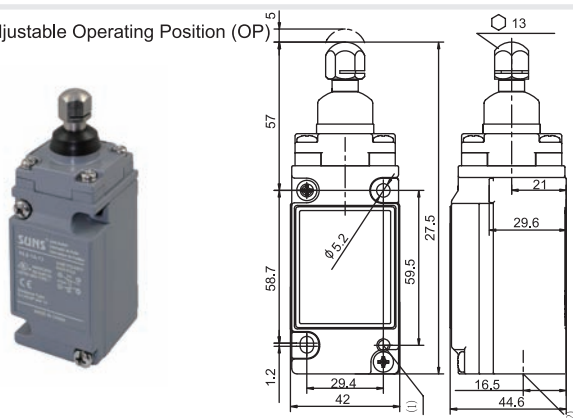
HLS-1A-11: 1NO/1NC
HLS-2A-11: 2NO/2NC
HLS-3A-11: 2NO/2NC (2-stage)



Order Code

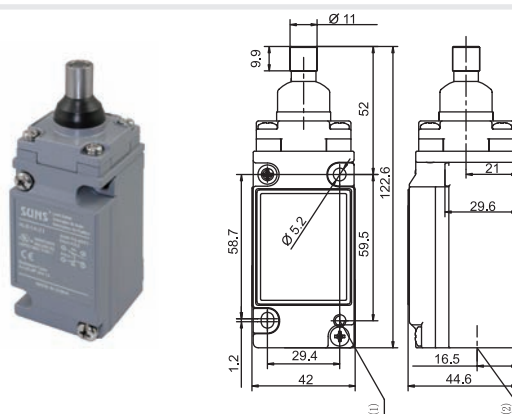
HLS-1A-12: 1NO/1NC
HLS-2A-12: 2NO/2NC
HLS-3A-12: 2NO/2NC (2-stage)

Adjustable Operating Position (OP)



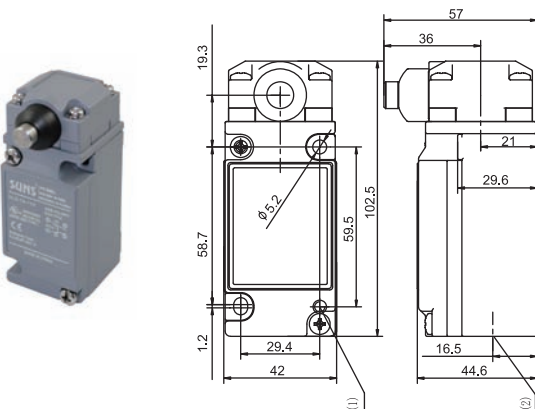
Order Code

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



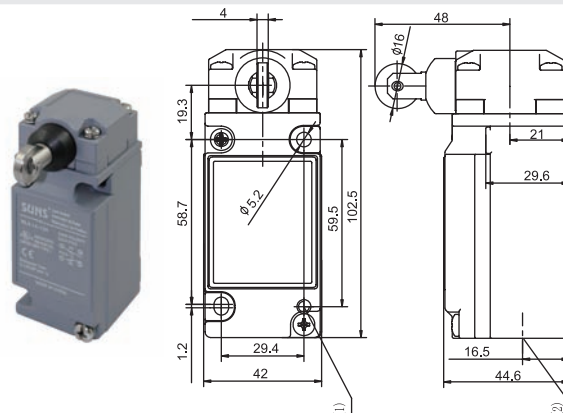
Order Code

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

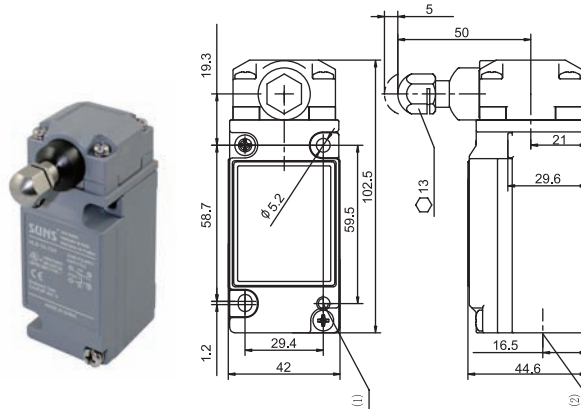
Order Code

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

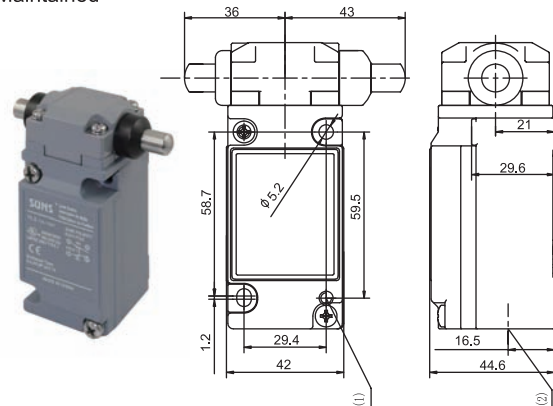
HLS Series Heavy Duty Limit Switches



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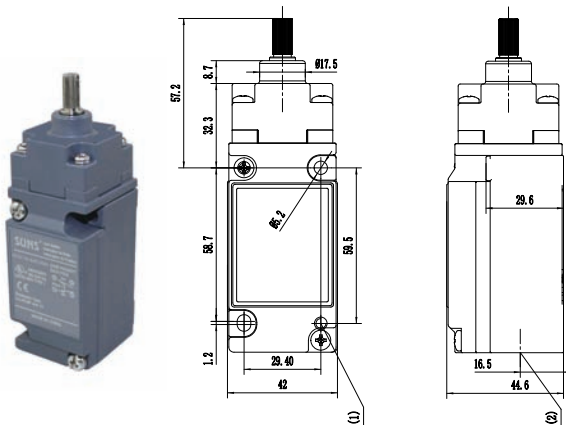
HLS-1A-13H: 1NO/1NC
HLS-2A-13H: 2NO/2NC
HLS-3A-13H: 2NO/2NC (2-stage)

Maintained



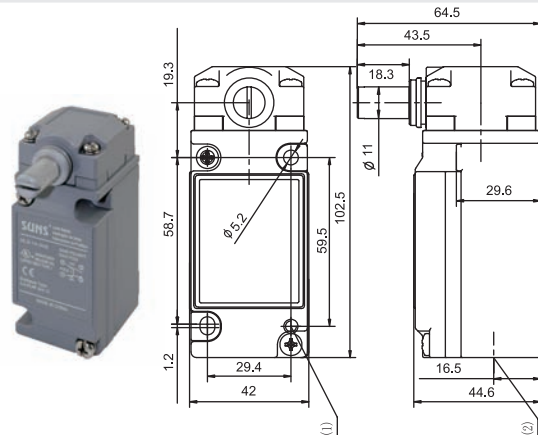
Order Code

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



Order Code

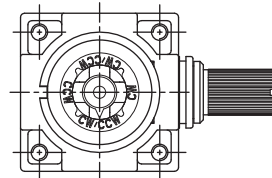
HLS-1A-05B: 1NO/1NC
HLS-2A-05B: 2NO/2NC



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

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.



Neutral Position

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

Maintained

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

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

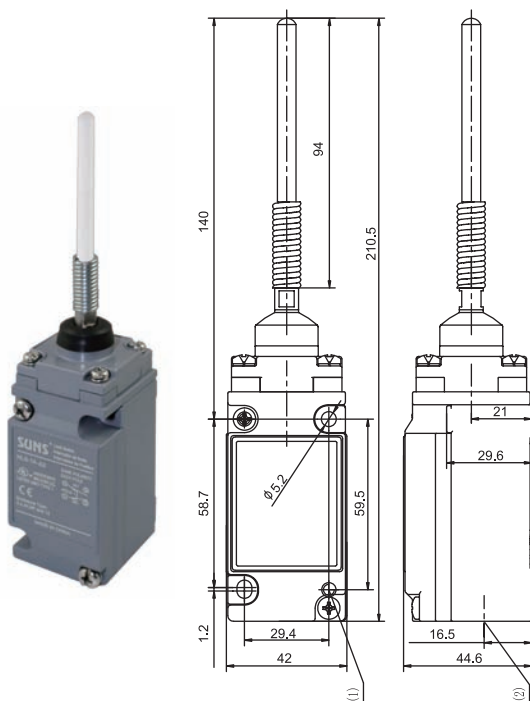
(2) Conduit opening type: 1/2NPT

HLS Series Heavy Duty Limit Switches

Order Code HLS-1A-04E: 1NO/1NC HLS-2A-04E: 2NO/2NC HLS-3A-04E: 2NO/2NC (2-stage)	Order Code HLS-1A-04E-UR(HW): 1NO/1NC HLS-2A-04E-UR(HW): 2NO/2NC

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

HLS Series Heavy Duty Limit Switches

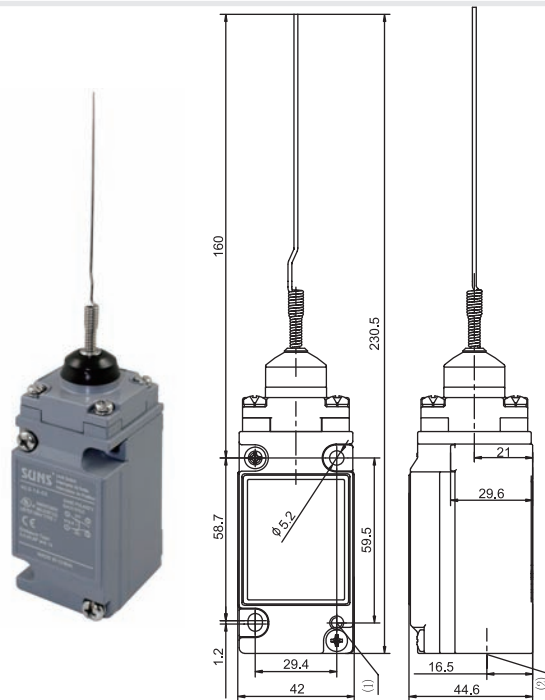


Order Code

HLS-1A-66: 1NO/1NC

HLS-2A-66: 2NO/2NC

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

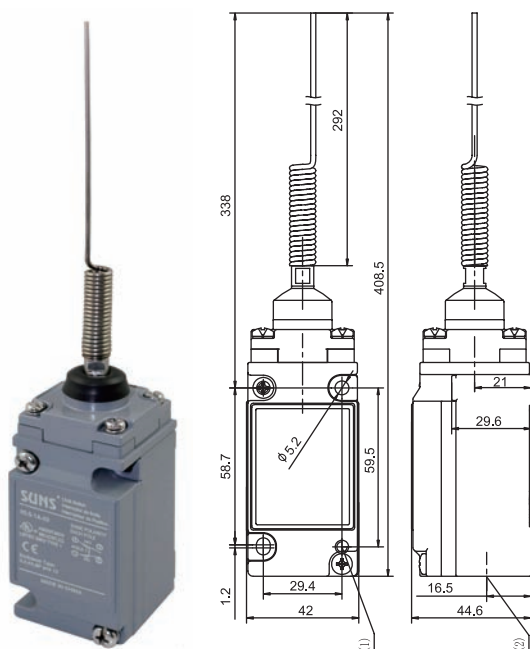


Order Code

HLS-1A-68: 1NO/1NC

HLS-2A-68: 2NO/2NC

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

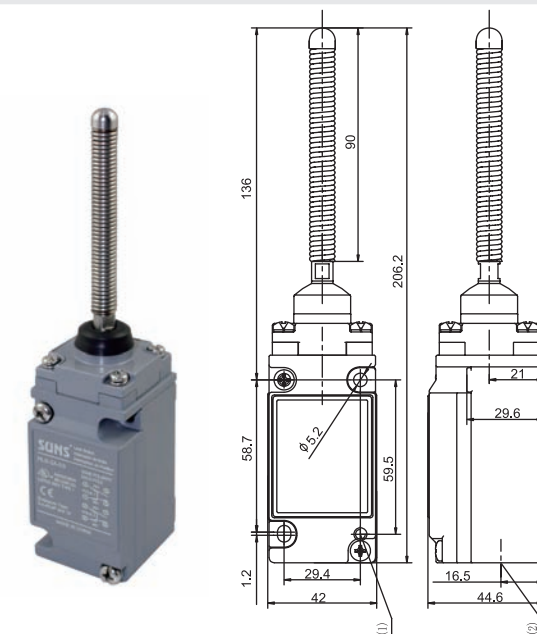


Order Code

HLS-1A-69: 1NO/1NC

HLS-2A-69: 2NO/2NC

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



Order Code

HLS-1A-00: 1NO/1NC

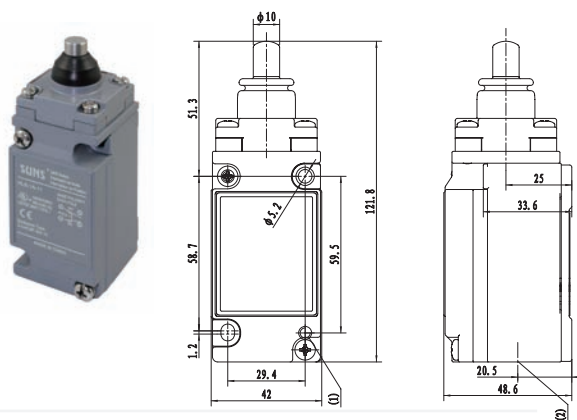
HLS-2A-00: 2NO/2NC

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

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

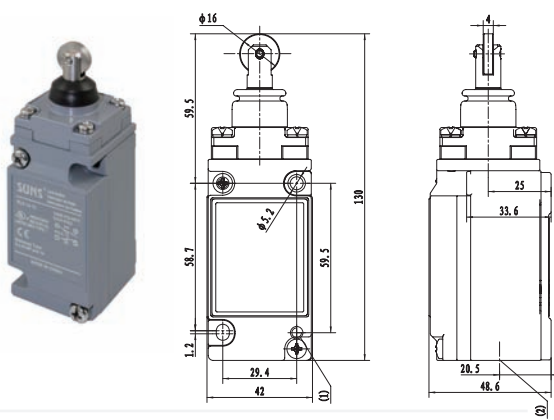
(2) Conduit opening type: 1/2NPT

HLS (AB) Series Heavy Duty Limit Switches



Order Code

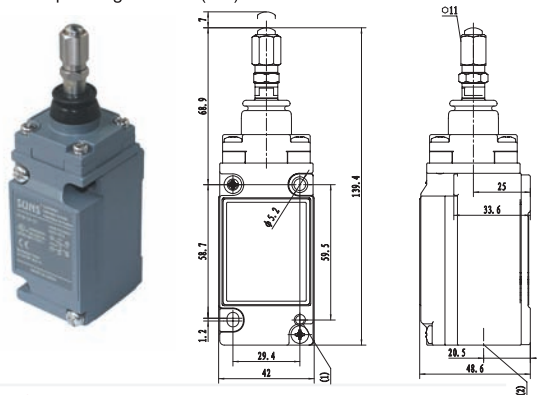
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HLS-2A-11(AB): 2NO/2NC
HLS-3A-11(AB): 2NO/2NC (2-stage)



Order Code

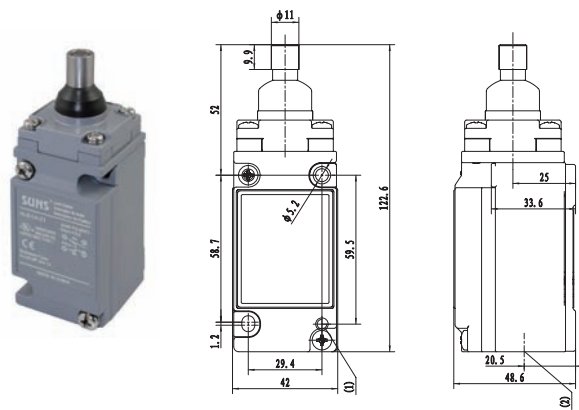
HLS-1A-12(AB): 1NO/1NC
HLS-2A-12(AB): 2NO/2NC
HLS-3A-12(AB): 2NO/2NC (2-stage)

Adjustable Operating Position (OP)



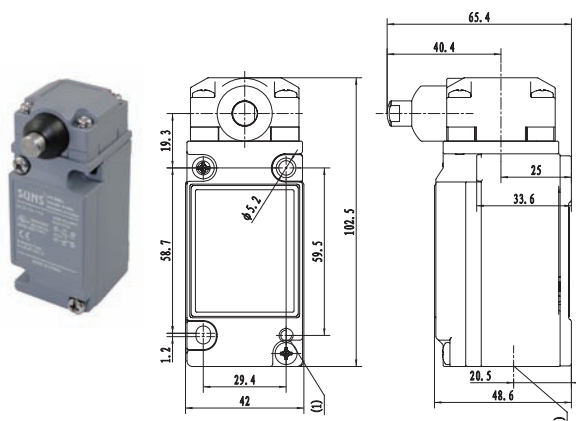
Order Code

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



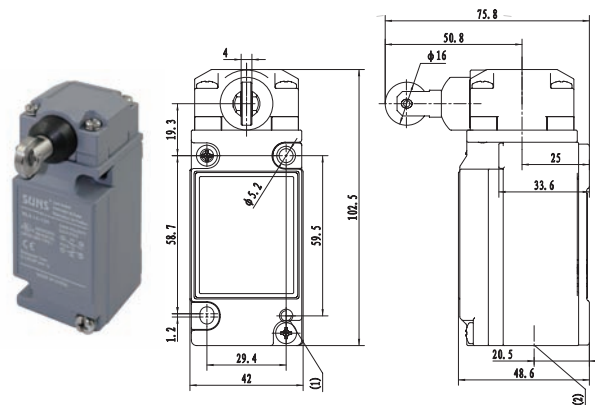
Order Code

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



Order Code

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



* Note: roller can be adjust to cross orientation

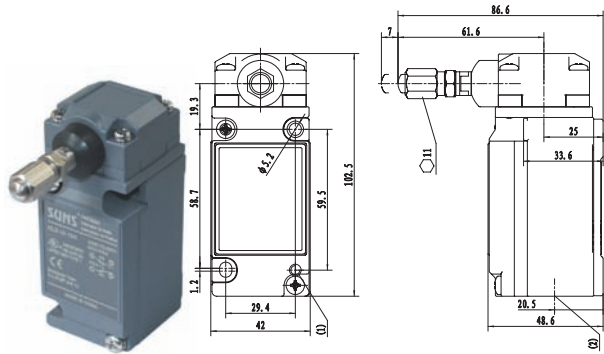
Order Code

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

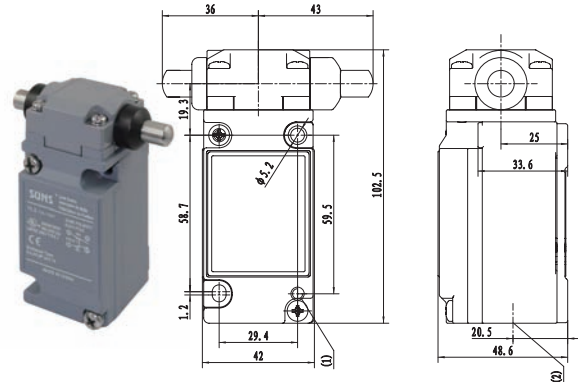
HLS(AB) Series Heavy Duty Limit Switches



Order Code

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

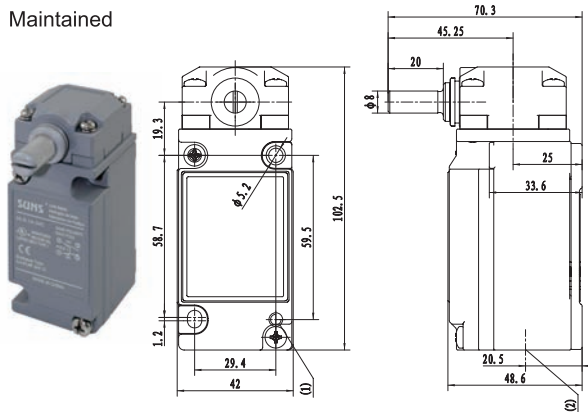
Maintained



Order Code

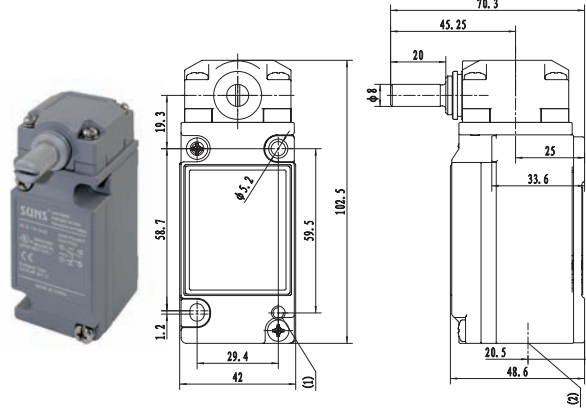
HLS-1A-10H(AB): 1NO/1NC
HLS-2A-10H(AB): 2NO/2NC

Maintained



Order Code

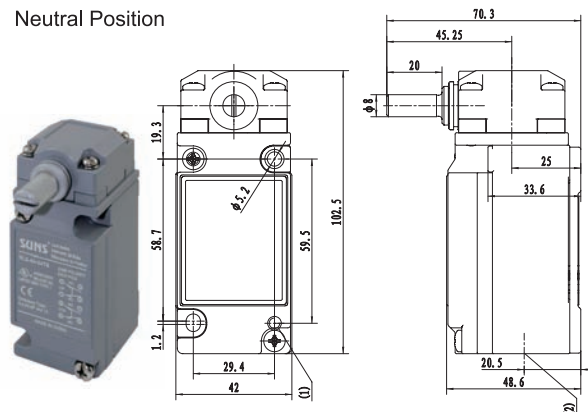
HLS-1A-04C(AB): 1NO/1NC
HLS-2A-04C(AB): 2NO/2NC



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

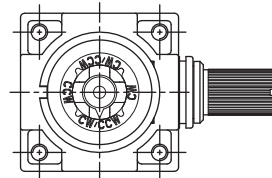
Neutral Position



Order Code

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

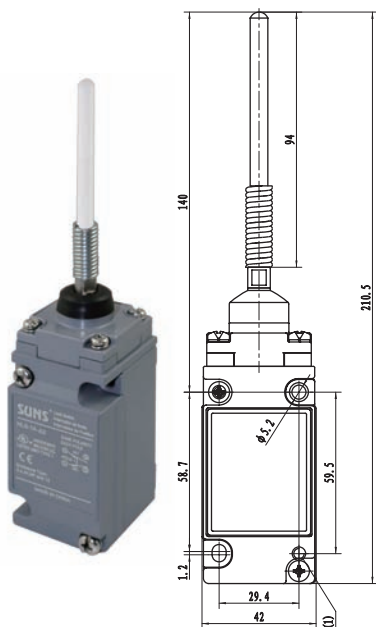
Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.



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

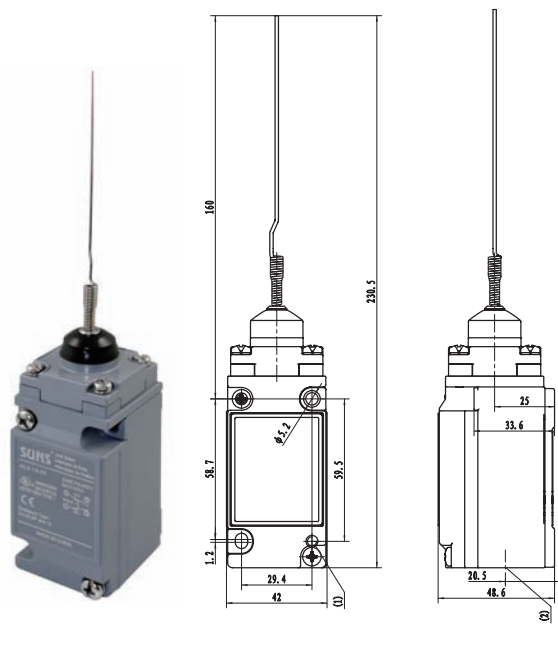
(2) Conduit opening type: 1/2NPT

HLS (AB) Series Heavy Duty Limit Switches



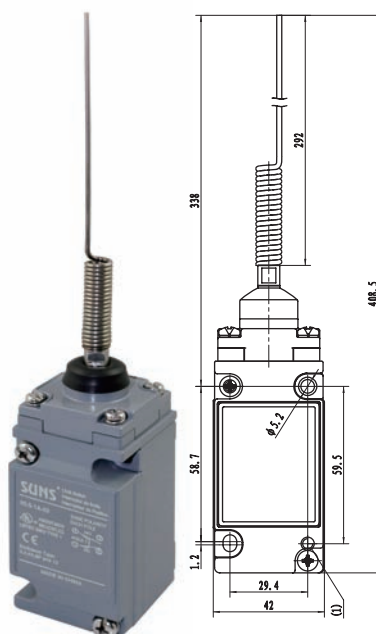
Order Code

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



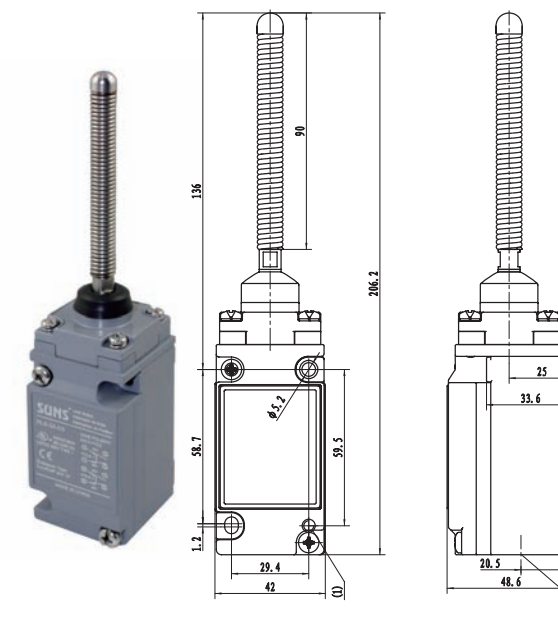
Order Code

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



Order Code

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



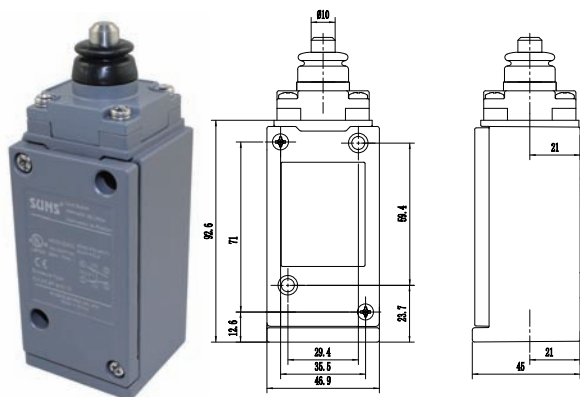
Order Code

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

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

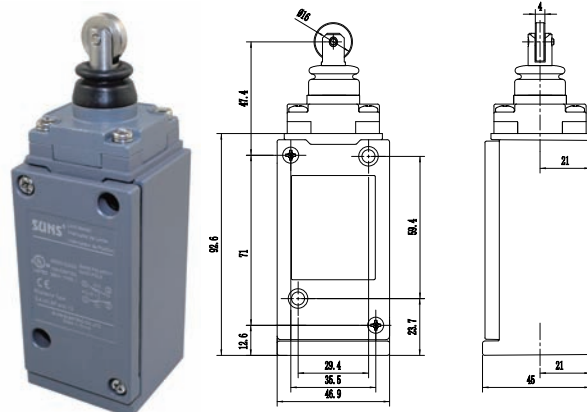
(2) Conduit opening type: 1/2NPT

HMS Series Heavy Duty Limit Switches



Order Code

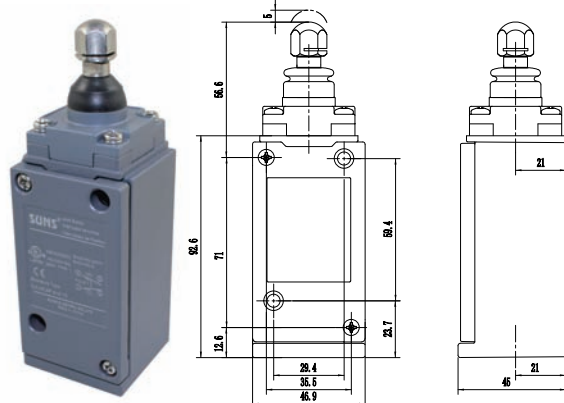
HNS-1A-11: 1NO/1NC



Order Code

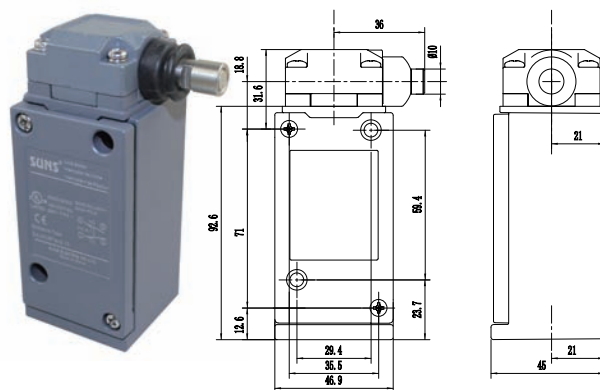
HNS-1A-12: 1NO/1NC

Adjustable Operating Position (OP)



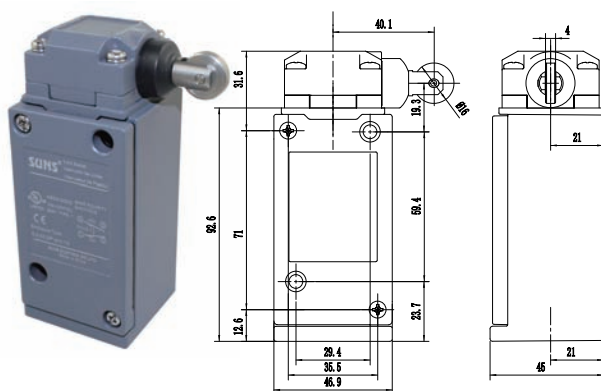
Order Code

HNS-1A-13: 1NO/1NC



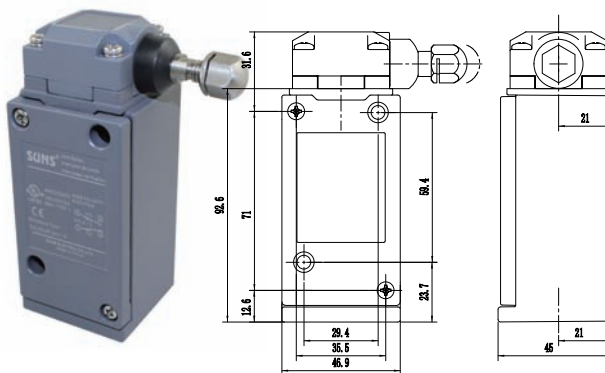
Order Code

HNS-1A-11H: 1NO/1NC



Order Code

HNS-1A-12H: 1NO/1NC



Order Code

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

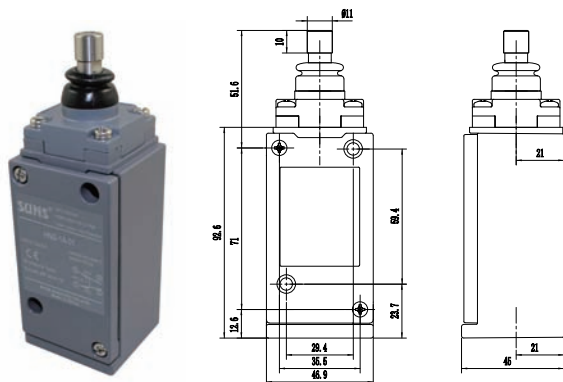
* Note: roller can be adjust to cross orientation

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

(2) Conduit opening type: 1/2NPT

HNS Series Heavy Duty Limit Switches

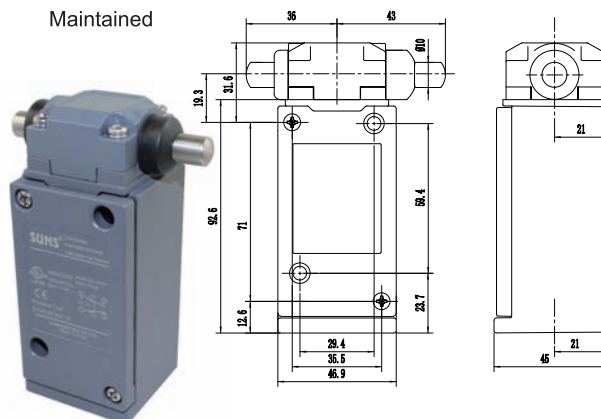
Adjustable Operating Position (OP)



Order Code

HNS-1A-01: 1NO/1NC

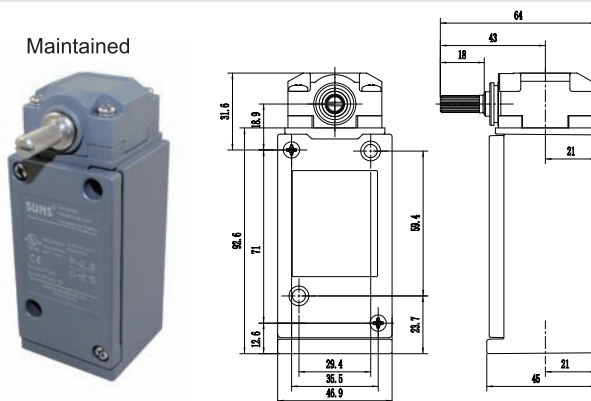
Maintained



Order Code

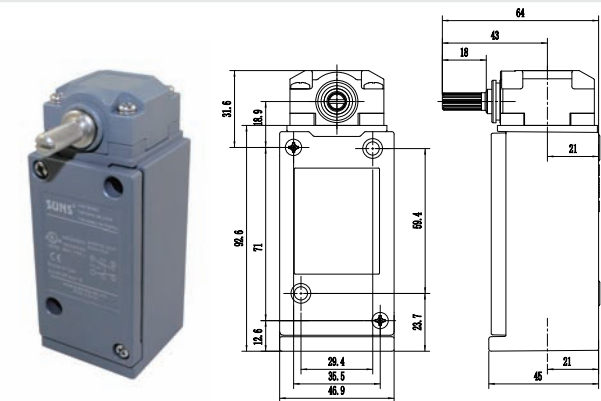
HNS-1A-10H: 1NO/1NC

Maintained



Order Code

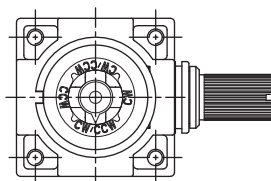
HNS-1A-04C: 1NO/1NC



Order Code

HNS-1A-04B: 1NO/1NC Standard Pretravel
HNS-1A-04A: 1NO/1NC Low Pretravel
HNS-1A-04N: 1NO/1NC Low Torque
HNS-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.

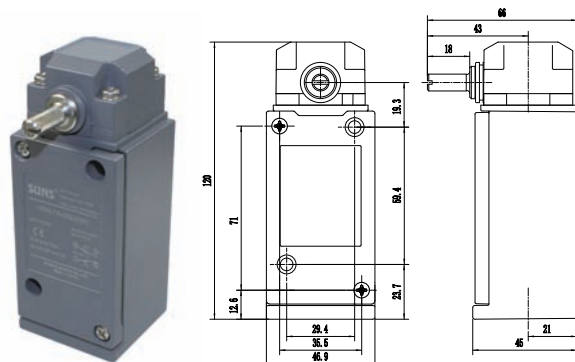


Note. (1) 2 x 10-24 UNC hole on the back for back side mounting.

(2) Conduit opening type: 1/2NPT

HNS Series Heavy Duty Limit Switches

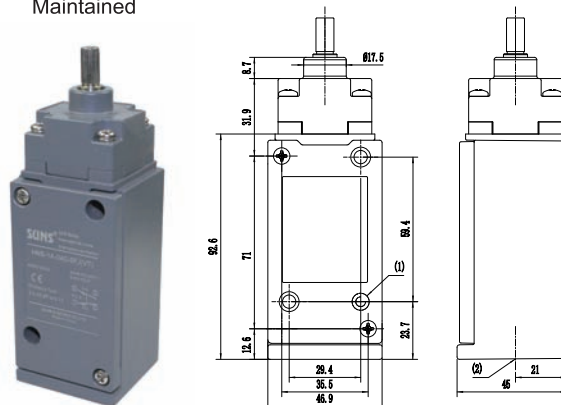
Adjustable Operating Position (OP)



Order Code

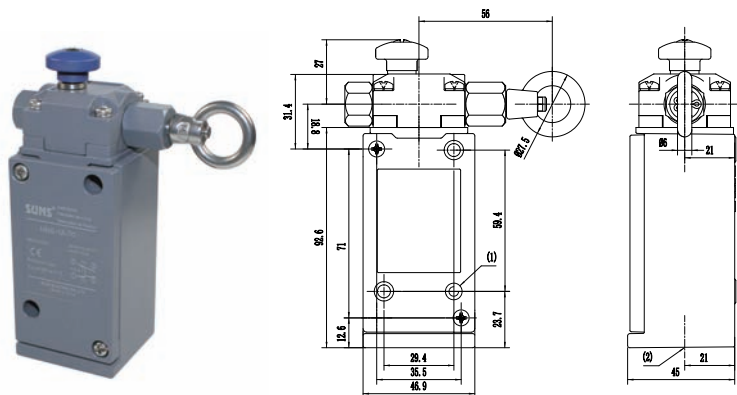
HNS-1A-04E: 1NO/1NC

Maintained



Order Code

HNS-1A-05B: 1NO/1NC



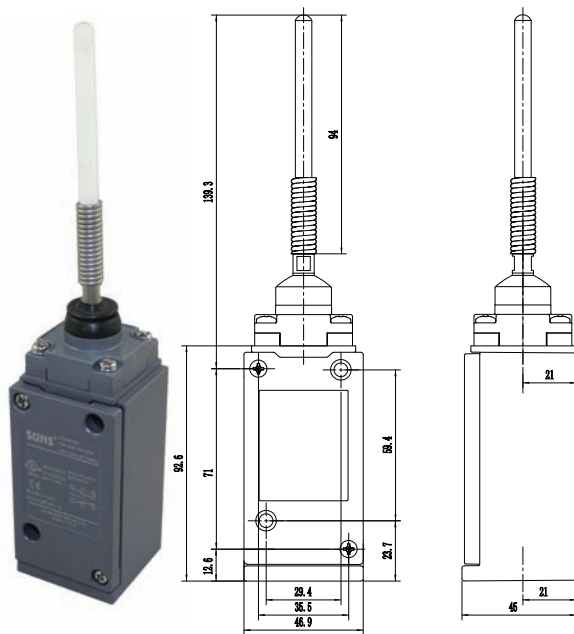
Order Code

HNS-1A-70: 1NO/1NC

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

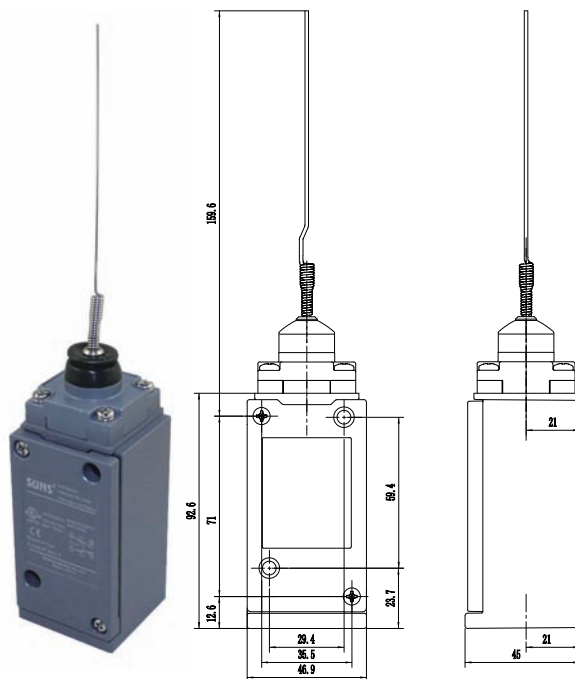
(2) Conduit opening type: 1/2NPT

HNS Series Heavy Duty Limit Switches



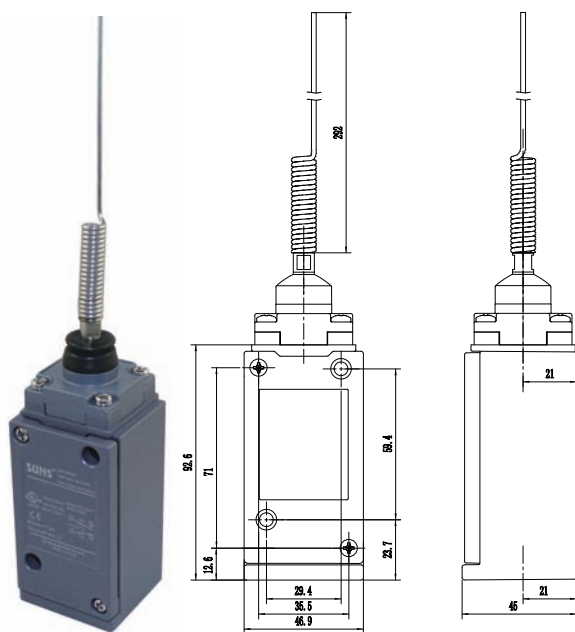
Order Code

HNS-1A-66: 1NO/1NC



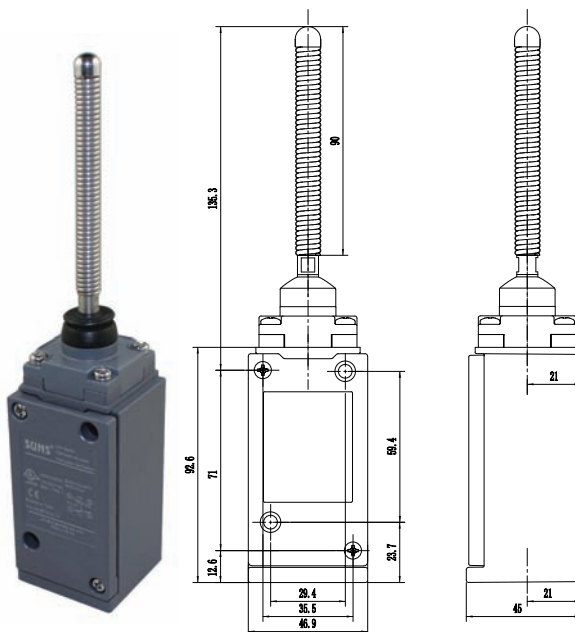
Order Code

HNS-1A-68: 1NO/1NC



Order Code

HNS-1A-69: 1NO/1NC



Order Code

HNS-1A-00: 1NO/1NC

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/HNS/HES/HCX 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
1.5 (38)	0.75 (19)	0.25 (6.3)	H-04B5
		0.63 (16)	H-04C1
	0.63 (16)	0.25 (6.3)	H-04C2
		0.63 (16)	H-04C3
		1 (25.4)	H-04C4
		1.97 (50)	H-04C5
2 (51)	0.75 (19)	0.25 (6.3)	H-4C5
		0.63 (16)	H-04D1
	0.63 (16)	0.25 (6.3)	H-04D2
		0.63 (16)	H-04D3
2.5 (63.5)	0.75 (19)	0.25 (6.3)	H-04D4
		0.63 (16)	H-04E1
	0.63 (16)	0.25 (6.3)	H-04E2
		0.63 (16)	H-04E3
3 (76)	0.75 (19)	0.25 (6.3)	H-04E4
		0.63 (16)	H-04F1
	0.63 (16)	0.25 (6.3)	H-04F2
		0.63 (16)	H-04F3
			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

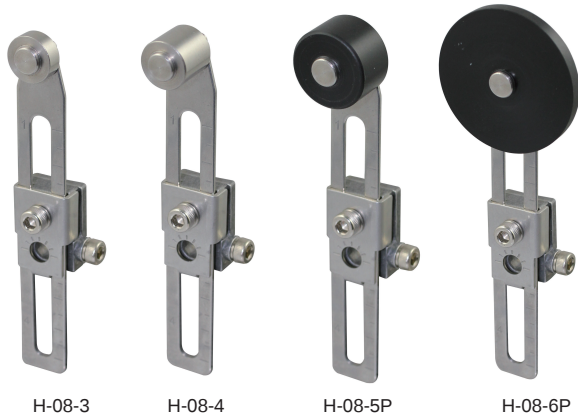
Lever Length in. (mm)	Roller Dia. in. (mm)	Roller Width in. (mm)	Part Number
Non-bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08-3
	0.63 (16)	0.63 (16)	H-08-4
	0.75 (19)	0.25 (6.3)	H-08-5
Bendable, adjustable from 22-101mm	0.63 (16)	0.25 (6.3)	H-08B-3
	0.63 (16)	0.63 (16)	H-08B-4
	0.75 (19)	0.25 (6.3)	H-08B-5

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
	0.75 (19)	0.25 (6.3)	H-08-7P
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/HNS/HES/HCX Heavy Duty Limit Switches)

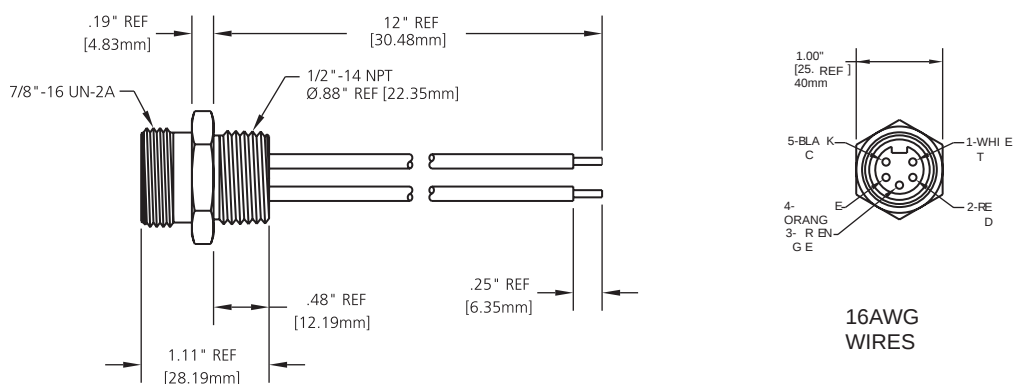


Rod Type Lever Arms

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	160MM(6.3IN.)	H-06
Looped Delrin Rod Arm	228MM(9IN.)	H-09

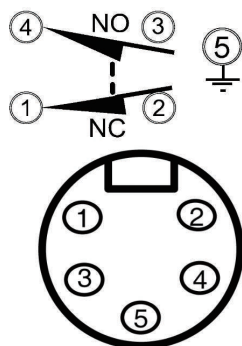
* For used with 11mm shaft (suffix blank); 7.0mm shaft (suffix -CH); 7.3mm shaft (suffix -HW) and 8.0mm shaft (suffix -AB)

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

