



MICRO SWITCH™

Heavy-Duty Limit Switches

HDLS Series



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Honeywell Sensing and Control's MICRO SWITCH™ heavy-duty limit switches' modular construction allows for a wide variety of actuator styles, operating heads, and electrical circuitry options. The plug-in versions greatly reduce downtime on production lines with high actuation rates as replacement of the switch is accomplished in seconds. The base receptacle contains all the wiring and conduit connection while the switching component with operating head easily assembles to the base and is attached with two screws.

What makes our switches better?

- Industry-leading breadth-of-product offering: HDLS standard, HDLS harsh-duty epoxy sealed, or the HDLS stainless steel
- NEMA 1, 3, 4, 4X, 6, 6P, 12, 13 and IP65/66/67 environmental sealing for demanding applications
- UL, CSA, CE, and CCC approvals for global use
- Sintered bronze bearing on 303 stainless steel operating shaft for enhanced mechanical life (50 million actuation cycles) and operational reliability
- All-metal drive train for consistent operating characteristics, even at high temperature. Lasts longer (without need for frequent adjustment) than drive trains with plastic parts
- Exclusive teller tab ensures proper torque. When it cannot be moved, the lever is tight enough to prevent slippage



RELIABILITY • DURABILITY
MODULAR • GLOBAL

Features and Benefits

SEALED TO NEMA 1, 3, 4, 4X, 6, 6P, 12, 13; IP 65/66/67

MICRO SWITCH™ HDLS limit switch **NEMA/IP sealing** features twin shaft seals for an extra measure of protection. They are ideal for many applications with **demanding indoor and/or outdoor environments**, where they may be subjected to shock or vibration from equipment, temperature extremes, dust, splashing water, coolant, and/or hose-directed water.

Works the first time – every time

WITHSTANDS MANY TOUGH ENVIRONMENTS

Rugged, **corrosion-resistant zinc head and body** are phosphate treated and epoxy coated for indoor and outdoor applications. **Diaphragm seal** between head and body provides an extra measure of protection. Functions with exposure to severe temperatures, dust, dirt, grime, and caustic chemicals.

Rapid customization and design-in time

USED GLOBALLY

Multiple connectivity options for international applications, as well as global approvals. Large, existing installation base and channel allows for quick delivery worldwide. **UL, CSA, CE, and CCC** approvals.

OPTIONAL SEALS

Fluorosilicone seals available for low temperature applications, and **fluorocarbon seals** available for chemically harsh environments and higher temperature applications.

UNIQUE DESIGN FEATURES

Keyed head design for **secure head-to-body retention** with the head in any one of four positions 90° apart. Self-lifting pressure plate terminals **saves wiring time**.

DESIGN FLEXIBILITY

Wide variety of actuators, switch options, and head styles for design flexibility. Rotary actuated heads are **field adjustable** for CW actuation, CCW actuation, or both to reduce inventory.

EASILY CONTROLS LOW-VOLTAGE DC APPLICATIONS

Limit switches available with a choice of **silver or gold-plated contacts** to handle a variety of electrical load requirements.

INTERCHANGEABLE

Plug-in and non plug-in bodies have identical operating characteristics and are **dimensionally interchangeable to reduce complexity**. Actuating levers for single and double pole, plug-in and non plug-in bodies provide same tracking and minimize inventory.

Potential Applications



MACHINE TOOLS

Determines part presence, machine slide position/stops, gates and doors

AUTOMOTIVE MACHINE TOOLS

Provides presence sensing on transfer machines, horizontal and vertical boring machines, stamping and forming equipment and automotive assembly line equipment

MATERIAL HANDLING

Used to position automated vehicle wash systems, overhead doors, garbage truck bodies, cranes, intermodal container handlers, gantry cranes, commercial aircraft boarding bridge



OUTDOOR ELECTROMECHANICAL STRUCTURES

End of travel indicator for equipment with moving components in harsh environments and remote locations, such as satellite and weather station arrays and solar energy harvesters

BALERS/COMPACTORS

Used as door interlocks for indoor and outdoor applications

CONVEYORS

Used for alignment/tracking, tensioning, and product/material presence

FOOD AND BEVERAGE

Used for process control, and packaging

POWER PLANTS

Used on conveyors, doors and gates

OFF-ROAD EQUIPMENT

Senses position of large components on wheeled or track equipment, motorized railroad switch, and rail locomotives

AGRICULTURAL EQUIPMENT

Grain handling and livestock equipment

VALVES

Indicates closed and/or open position

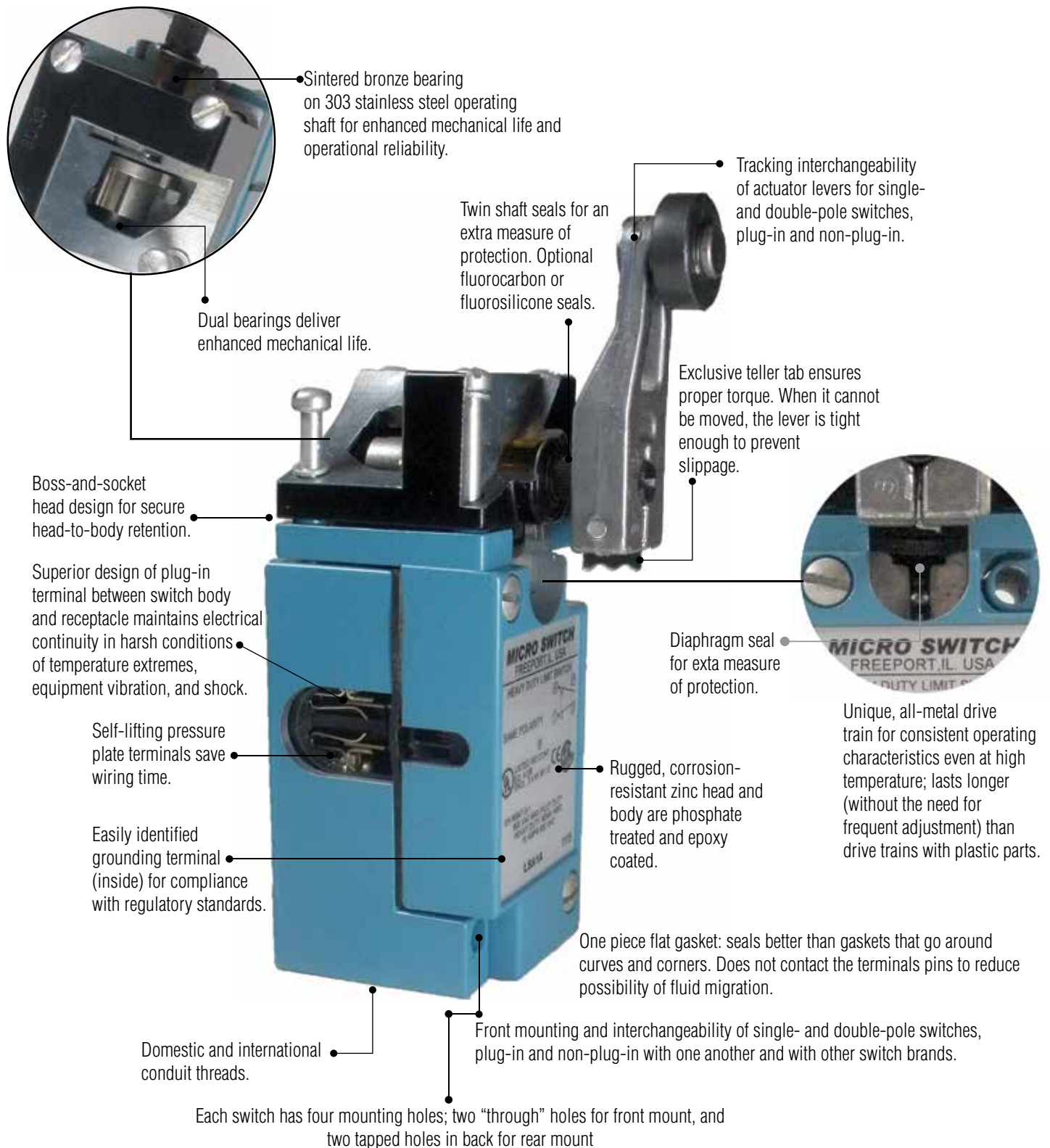
TRANSPORTATION HUBS

Commercial aircraft boarding bridge, commercial aircraft ground support equipment, intermodal container handlers, gantry cranes, shipboard conveyors, door/hatch position & valve position, railroad locomotives and rail maintenance equipment



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 1. MICRO SWITCH™ HDLS SERIES FEATURES AND OPTIONS



HDLS Series

Table 1. Specifications

Characteristic	Parameter		
Product type	MICRO SWITCH™ heavy-duty limit switches		
Actuators	Side plunger - adjustable	Side plunger - pin	Side plunger maintained - pin
	Side roller plunger	Side rotary	Side rotary maintained
	Top plunger - adjustable	Top plunger - pin	Top roller plunger
	Top rotary	Wobble - cable	Wobble - cat whisker
	Wobble - coil spring	Wobble - plastic rod	Wobble - spring wire
Circuitry	1NC 1NO SPDT snap action, double break		
	2NC 2NO DPDT center neutral, snap action, double break		
	2NC 2NO DPDT snap action, double break		
	2NC 2NO DPDT sequential, snap action, double break		
Electrical	10 A thermal		
	Single and double pole: AC15 A600; DC13 R300 (see table on page 7)		
Housing material	Zinc die-cast with an electrostatic epoxy coating		
Termination types	0.5 in - 14NPT conduit	0.75 in - 14NPT conduit	12 ft cable
	PG 13,5 conduit	20 mm conduit	4-pin micro-style connector
	4-pin mini-style connector	5-pin mini-style connector	9-pin mini-style connector
	6 ft cable	Manifold mounting	
Housing type	HDLS Plug-in, HDLS Non-Plug-in		
Sealing	IP65/66/67; NEMA 1, 3, 4, 4X, 6, 6P, 12, 13		
Operating temperature	-12 °C to 121 °C [10 °F to 250 °F];		
	optional: -40 °C to 121 °C [-40 °F to 250 °F]		
Agency approvals and standards	UL, CE, CSA, CCC		
UNSPSC code	302119		
UNSPSC commodity	302119 Switches and controls and relays		
Sealed	Industrial		

MICRO SWITCH™ Heavy-Duty Limit Switches

ASSEMBLY MODIFICATIONS • ROTARY

Momentary action rotary switches can be furnished in other than the normal assembled conditions. To specify modifications, add the numbers shown below to the catalog listings. Modification number suffixes are:

- 1** Clockwise actuation only
- 2** Counterclockwise actuation only
- 3** Shaft to right of switch front
- 4** Shaft to left of switch front
- 5** Shaft to back of switch
- 7** Indicator light wired to NC circuit

For example,

Catalog listing LSA1A**23** is an LSA1A switch adjusted for counterclockwise actuation only. The operating shaft is to the right side of the switch when viewing it from the front (label side). No lever.

Catalog listing LSA8A**7** is an LSA8A switch with the 240 volt indicator light wired to the NC circuit. No lever.

PLUNGER ASSEMBLY MODIFICATIONS

Add the following modification numbers to the catalog listing in the plunger switch:

- 3** Side plunger to right of switch front
- 4** Side plunger to left of switch front
- 5** Side plunger to back of switch
- 6** Roller on top plungers perpendicular to mounting surface
- 7** Light on indicator versions wired to NC circuit
- 8** Roller on side plungers in vertical position

For example,

Catalog listing LSF1A**3** is an LSF1A switch with the side roller plunger to the right side.

PLUG-IN VS. NON-PLUG-IN MODELS

Honeywell HDLS limit switches are offered in two styles: non-plug-in design and plug-in design. With plug-in construction, the wiring and conduit connection is made to the base receptacle. This feature reduces downtime as the plug-in unit can be removed and replaced without disconnecting the wiring or conduit connections to the switch.

MICRO SWITCH™ HDLS SERIES ELECTRICAL RATINGS:

10 A CONTINUOUS CARRY

AC VOLTS; PILOT DUTY: AC15, A600/B600

Electrical Rating	Circuitry	Vac	Amps at 0.35 Power Factor Make	Amps at 0.35 Power Factor Break
A* AC15, A600	SPDT DPDT	120	60	6
		240	30	3
		480	15	1.5
		600	12	1.2
B AC15, B600	Δ	120	30	3
		240	15	1.5
		480	7.5	0.75
		600	6	0.60

Δ Gravity return (Model LSS..) and extra-low torque (Model LST..)

MICRO SWITCH™ HDLS SERIES ELECTRICAL RATINGS:

DC VOLTS; PILOT DUTY: DC13, R300

Electrical Rating	Circuitry	Vdc	Make & Break Amps Inductive	Make & Break Amps Resistive
A, B*	SPDT DPDT	120	0.25	0.8
		240	0.15	0.4

* For switches with an indicator light, use only at voltage stated for indicator light.

MICRO SWITCH™ HDLS limit switches are capable of the following low voltage dc loads

Circuitry	Vdc	Amps Inductive	Amps Resistive
SPDT	24	10	10
DPDT	24	10	10



HDLS Series

MICRO SWITCH™ HDLS SERIES OPERATING HEADS

SIDE ROTARY: Available levers provide greater versatility. Heads may be positioned with shaft on any side. All are momentary action except maintained head (LSN Series).



LSA - Standard: 60° minimum overtravel, 15° maximum pretravel, 5° (single pole) and 7° (double pole) maximum differential travel. Operating temperature range from -12 °C to 121 °C [10 °F to 250 °F].*

LSR - Low operating torque: 60° minimum overtravel, 15° maximum pretravel, 0.19 Nm [1.7 in lb] maximum operating torque. Operating temperature range from -1 °C to 121 °C [250 °F to 250 °F].*

LSN - Maintained contact: Maintained on counterclockwise rotation and reset on clockwise rotation, and vice versa. Operating temperature range from -1 °C to 121 °C [30 °F to 250 °F].

LSP - Low differential: 68° minimum overtravel, 7° maximum pretravel, 3° (single pole) and 4° (double pole) maximum differential travel. Operating temperature range from -12 °C to 121 °C [10 °F to 250 °F].*

LSH - Low torque, low differential travel: 68° minimum overtravel. Features low operating torque and narrow differential travel. Operating temperature range from -1 °C to 121 °C [30 °F to 250 °F].*

LSU - Low pretravel: 5° max. pretravel, 70° min. overtravel, and a second step of 18° max. Operating temperature range from -12 °C to 121 °C [10 °F to 250 °F].*

LSL - Sequence action: 48° minimum overtravel. Delayed action between operation of two poles. Operating temperature range from -12 °C to 121 °C [10 °F to 250 °F].*

LSM - Center neutral: 53° minimum overtravel. One set of contacts operates on the clockwise rotation, and another set on the counterclockwise rotation. Operating temperature range from -1 °C to 121 °C [30 °F to 250 °F].*

LST - Momentary action with extra low torque: 12 in oz of operating and full travel torque with momentary action. Operating temperature range from -12 °C to 121 °C [10 °F to 250 °F].*

LSS - Gravity return: Has no return spring mechanism so weight of the lever must provide the return force. Extremely light operating torque (5 in oz max.) is useful in conveyor applications and can be operated by small or lightweight objects. Operating temperature range from -1 °C to 121 °C [30 °F to 250 °F].*

TOP ROTARY: Available levers provide greater versatility. Heads may be positioned with shaft on any side. All are momentary action except maintained head.



LSB: With 100° minimum overtravel. Various levers that fit side rotary shafts may be used on the top rotary shaft. Switch is ideal when increased overtravel is required. Momentary action. Standard operating temperature range from -1 °C to 121 °C [30 °F to 250 °F].*

TOP PLUNGERS: Available with 4,83 mm [0.19 in] minimum overtravel. Top pin plungers are offered in pin plunger, an adjustable plunger, and a roller plunger. Standard temperature range of -12 °C to 93 °C [10 °F to 200 °F].



LSC - Top pin plunger: A corrosion-resistant steel plunger for in-line actuating motion. Oil-tight seals on plunger and between the operating head and housing keep out coolant, dust, and chips. Momentary action.



LSD - Top roller plunger: A corrosion-resistant steel roller and plunger that is adjustable to 90° angles to accept cam or slide operation from any of two directions. Boot seal on the plunger. Momentary action.



LSV - Adjustable top pin plunger: Provides easy application and saves on installation time. The operating points of the switch can be adjusted from 52,8 mm to 59,3 mm [2.085 in to 2.335 in]. Seals are the same as the pin plunger. Momentary action.

*(Fluorocarbon seals are preferred for temperatures above 93 °C [200 °F]).

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MICRO SWITCH™ HDLS SERIES OPERATING HEADS

SIDE PLUNGERS: Available with 4,83 mm [0.19 in] minimum overtravel. Side plungers are offered in plain plunger, an adjustable plain plunger, a roller plunger, and a maintained plunger. Standard temperature range of -12 °C to 93 °C [10 °F to 200 °F].

	LSE - Side pin plunger: For actuating motion inline with the plunger travel. Actuating head may be faced in any of four positions, 90° apart. A boot seal on the plunger and a gasket seal between the head and housing keep out coolant, dust, and chips. Momentary action.		LSW - Adjustable side pin plunger: Has the same features of the side plain plunger plus the means to adjust the operating points of the switch from 41 mm to 47,4 mm [1.615 in to 1.865 in]. Momentary action.
	LSF - Side roller plunger: Fits close quarters under cams and slides. The head may be faced in any of four positions, 90° apart. <u>The roller can be turned vertical or horizontal to the switch.</u> Boot seal on plunger. Momentary action.		LSG - Maintained contact side pin plunger: Offers a maintained contact on actuation of the switch. A reverse motion of the plunger resets the switch. Sealing is the same as other side plunger actuation heads. Operating temperature range is -1 °C to 93 °C [30 °F to 200 °F].

WOBBLE LEVER ACTUATING HEADS: Heads come with either a spring wire, Delrin® plastic rod, or steel cat whisker. Any movement of the lever (except pull) will actuate the switch. Standard temperature range of -12 °C to 93 °C [10 °F to 200 °F].

				
LSJ1A-7M - Spring wire: 300 Series SST wire may be formed for special applications.	LSJ1A-7N - Flexible actuator: Designed with a tin-plated cable.	LSK1A-8C - Coil spring: Designed with a 300 Series SST coil spring.	LSJ1A-7A - Plastic rod: Recommended where possible scratching or marring by the actuator is to be avoided.	LSK1A-8A - Cat whisker: 300 Series SST actuator designed for low operating force applications.

*(Fluorocarbon seals are preferred for temperatures above 93 °C [200 °F]).

HDLS Series

SPECIAL OPTIONS

HIGH TEMPERATURE/CHEMICAL RESISTANT SWITCHES

Completely fluorocarbon (FC)-sealed switches have a full FC body gasket coving the switch cavity. Rotary types have an extra FC seal on the operating shaft, while plunger versions have FC boot seals. They are for use in many applications where the environment includes fire-resistant synthetic fluids. In addition to most all fluids, the FC-sealed switches may be used with such industrial fluids such as Cellulube, Fyrquell, Houghto-Safe, Pydraul, and other special cutting and hydraulic fluids. The additional FC seals also promote longer operating life for rotary-actuated HDLS switches in applications where the temperatures are normally -12 °C to 121 °C [10 °F to 250 °F]. If pre-wired with cable, then temperature limits are 105 °C [221 °F] dry and 60 °C [140 °F] wet.

To order, insert the additional letters **Y** and **C** in the appropriate places in the standard catalog listing, as shown below:

LSA1A	standard, side-rotary plug-in switch
LSYAC1A	completely FC-sealed version of LSA1A

LOW TEMPERATURE SWITCHES

All forms of HDLS limit switches are also available in low-temperature construction. Design features include fluorosilicone diaphragm, shaft seals, and external booth seal (where applicable). If pre-wired with a cable, low temperature limits are -10 °C [14 °F] flex and -30 °C [-22 °F] non-flex.

To order, insert the additional letters **Y** and **B** in the appropriate places in the standard catalog listing, as shown below:

LSA1A	standard, side-rotary plug-in switch
LSYAB1A	low-temperature version of LSA1A

CONDUIT OPENINGS

For conduit openings other than 1/2-NPT and 3/4-NPT, substitute the following after LS in the catalog listing:

LS3 PG13,5

LS4 20 mm

LSA1A	side rotary with 1/2-14 NPT conduit
LS4A1A	side rotary with 20 mm conduit

TEMPERATURE LIMITS

	Standard HDLS				Low Temperature HDLS (Fluorosilicone Sealed): Y B				High Temperature HDLS (Fluorocarbon Sealed)*: Y C		
	Low Limit		High Limit		Low Limit		High Limit		Low Limit		High Limit
	-12 °C [10 °F]	-1 °C [30 °F]	93 °C [200 °F]	121 °C [250 °F]	-40 °C [-40 °F]	-29 °C [-20 °F]	93 °C [200 °F]	121 °C [250 °F]	-12 °C [10 °F]	-1 °C [30 °F]	121 °C [250 °F]
LSA - Side Rotary Momentary	X			X	X			X	X		X
LSB - Top Rotary		X		X		X		X		X	X
LSC - Top Plain Plunger	X		X		X		X		X		X
LSD - Top Roller Plunger	X		X		X		X		X		X
LSE - Side Plain Plunger	X		X		X		X		X		X
LSF - Side Roller Plunger	X		X		X		X		X		X
LSG - Side Plunger, Maintained		X	X			X	X			X	X
LSH - Side Rotary, Low PT, Low Torque		X		X		X		X		X	X
LSJ - Wobble Stick	X		X		X			X	X		X
LSK - Cat Whisker	X		X			X		X	X		X
LSL - Side Rotary, Sequence	X			X	X			X	X		X
LSM - Side Rotary, Center Neutral		X		X	X			X		X	X
LSN - Side Rotary, Maintained		X		X		X		X		X	X
LSP - Side Rotary, Low Pretravel	X			X	X			X	X		X
LSR - Side Rotary, Low Torque		X		X		X		X		X	X
LSU - 5° Low Pretravel	X			X	X			X	X		X
LSV - Top Adjustable Plunger	X		X		X		X		X		X
LSW - Side Adjustable Plunger	X		X		X		X		X		X

* For HDLS application wherein the upper temperature limit is normally above 93 °C [200 °F], much longer switch life can be obtained by using completely fluorocarbon-sealed switches rather than standard HDLS.

MICRO SWITCH™ Heavy-Duty Limit Switches

FACTORY SEALED PRE-WIRED LIMIT SWITCHES

Features

- Pre-wired with 6 ft STOW-A cable or other 4, 5, or 9-pin connectors (other lengths available)
- Wire entry area completely factory sealed
- (Cable version) NEMA 1, 6, 6P, 12; IP67
- (Connector version) NEMA 1, 6, 6P, 12, 13; IP67

How to order:

To order factory sealed switches, add the modification codes shown below to the standard HDLS listings:

Circuitry	Cable	1/2 in connector style
SPDT	C	A (4-pin mini-style) B (5-pin mini-style) DD (4-pin micro-style)
DPDT	M	R (9-pin mini-style)

Examples:

LSA1A**C** = LSA1A with 6 feet of 5-conductor STOW-A cable

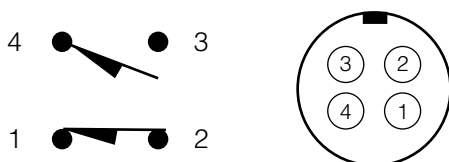
LSJ2B**M**-7N = LSJ2B-7N with 6 feet of 9-conductor STOW-A cable

LSA1A**B** = LSA1A with a 5-pin mini-style connector

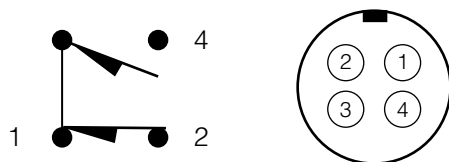
LSA1A**DD** = LSA1A with a 4-pin micro-style connector

NOTE: Connector versions available with 1/2 in conduit only.

WIRING DIAGRAM (STYLE A)



WIRING DIAGRAM (STYLE DD)

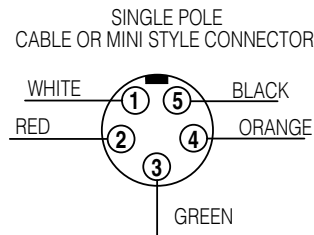


Pin 3 not connected

WIRING DIAGRAMS (STYLES B&G)

Connectors = Numbers (mini-style)

Cables = Colors



Single-Pole Circuitry

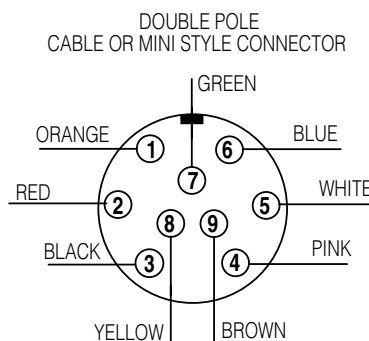


3 = Ground

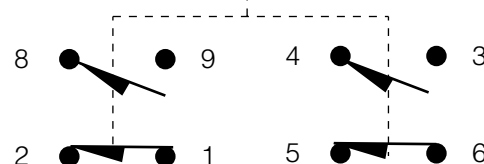
Electrical Ratings: Connector Versions

Mini	600 VAC, 7A
Micro	300 VAC, 3A

WIRING DIAGRAMS (STYLES M&R)



Double-Pole Circuitry



7 = Ground

SIDE ROTARY • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS



	Standard (LSA)		Low Differential (LSP)		5° Pretravel (LSU)	
Description	Standard		Low pretravel & low differential travel		Low pretravel	
	SPDT	DPDT	SPDT	DPDT	SPDT	DPDT
	Snap Action 1NO/1NC 0° 15° 75° ↓ ↑	Snap Action 2NO/2NC 0° 15° 75° ↓ ↑	Snap Action 1NO/1NC 0° 9° 75° ↓ ↑	Snap Action 2NO/2NC 0° 9° 75° ↓ ↑	Snap Action 1NO/1NC 0° 5° 75° ↓ ↑	Snap Action 2NO/2NC 0° 5° 75° ↓ ↑
Pretravel	15° max.	15° max.	9° max.	9° max.	5° max.	5° max.
Different. travel	5° max.	7° max.	3° max.	4° max.	3° max.	4° max.
Overtravel	60° min.	60° min.	66° min.	66° min.	70° min.	70° min.
Oper. torque	0,45 Nm [4 in-lb] max.		0,45 Nm [4 in-lb] max.		0,45 Nm [4 in-lb] max.	
Action	CW & CCW (Spring return)					
Op. temp range ³	-12 °C to 121 °C [10 °F to 250 °F] (for low temp, high temp, or preleaded versions, see page 10)					

Contact closed ■
 Contact open □

Circuitry	Contacts	Body Style ²	Conduit (NPT)	Options			
SPDT 	Silver	Plug-in	0.5 in		LSA1A	LSP1A	LSU1A
	Gold ⁴	Plug-in	0.5 in		LSA1E	LSP1E	LSU1E
	Silver	Plug-in	0.5 in	120 V Ind. lite*	LSA5A	LSP5A	LSU5A
	Silver	Plug-in	0.5 in	240 V Ind. lite*	LSA8A	LSP8A	LSU8A
	Silver	Plug-in	0.5 in	24 V LED lit 1.5 mA max. auto polarity	LSA9A	LSP9A	LSU9A
	Silver	Non-plug-in	0.5 in		LSA3K	LSP3K	LSU3K
DPDT 	Silver	Plug-in	0.75 in		LSA2B	LSP2B	LSU2B
	Gold ⁴	Plug-in	0.75 in		LSA2S	-	-
	Silver	Plug-in	0.5 in		LSA6B	LSP6B	LSU6B
	Gold ⁴	Plug-in	0.5 in		LSA6S	-	-
	Silver	Plug-in	0.75 in	120 V Ind. lite*	LSA2R	LSP2R	LSU2R
	Silver	Non-plug-in	0.75 in		LSA4L	LSP4L	LSU4L
	Silver	Non-plug-in	0.5 in		LSA7L	LSP7L	LSU7L

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93 °C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

⁴ Gold-plated contacts

To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSYAC1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSYAB1A limit switch.

MICRO SWITCH™ Heavy-Duty Limit Switches

SIDE ROTARY • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS



	Low Torque (LSR)		Low Diff., Low Torque (LSH)		
Description	Low operating torque		Momentary, low pretravel and low torque		
	SPDT	DPDT	SPDT	DPDT	
	Snap Action 1NO/1NC 15° 10°	Snap Action 2NO/2NC 15° 8°	Snap Action 1NO/1NC 9° 6°	Snap Action 2NO/2NC 9° 5°	
	Pretravel	15° max.	15° max.	9° max.	9° max.
	Different. travel	5° max.	7° max.	3° max.	4° max.
	Overtravel	60° min.	60° min.	66° min.	66° min.
Oper. torque	0,19 Nm [1.7 in-lb] max.		0,19 Nm [1.7 in-lb] max.		
Action	CW & CCW (Spring return)				
Op. temp range ³	-1 °C to 121 °C [30 °F to 250°F] (for low temp, high temp, or preloaded versions, see page 10)				

Circuitry	Contacts	Body Style ²	Conduit (NPT)	Options		
SPDT 	Silver	Plug-in	0.5 in		LSR1A	LSH1A
	Gold ⁴	Plug-in	0.5 in		LSR1E	LSH1E
	Silver	Plug-in	0.5 in	120 V Ind. lite*	LSR5A	LSH5A
	Silver	Plug-in	0.5 in	240 V Ind. lite*	LSR8A	LSH8A
	Silver	Plug-in	0.5 in	24 V LED lit 1.5 mA max. auto polarity	LSR9A	LSH9S
	Silver	Non-plug-in	0.5 in		LSR3K	LSH3K
DPDT 	Silver	Plug-in	0.75 in		LSR3B	LSH2B
	Silver	Plug-in	0.5 in		LSR6B	LSH6B
	Silver	Plug-in	0.75 in	120 V Ind. lite*	LSR2R	LSH2R
	Silver	Non-plug-in	0.75 in		LSR4L	LSH4L
	Silver	Non-plug-in	0.5 in		LSR7L	LSHJ7L

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93°C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

⁴ Gold-plated contacts

To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AC**1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AB**1A limit switch.

SIDE ROTARY • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS



	Maint. Contact (LSQ)	Maint. Contact (LSN)	Center Neutral (LSM)	Sequence Action (LSL)
Description	Maint. 360° Alt. Action	Maintained, 2-pos ^{1,2} . Std.	Center Neutral (Pole 1 operates CCW; Pole 2 operates CW)	Sequential (Pole 1 operates before Pole 2, either CW, CCW, or both)
	SPDT	SPDT DPDT	DPDT	DPDT
Contact closed ■ Contact open □				
Pretravel	65° max.	65° max.	18° max.	Pole 1: 15° Pole 2: add'l 10°
Different. travel	40° max.	40° max.	10° max.	each pole: 5°
Overtravel	20° min.	20° min.	57° min.	48° min.
Oper. torque	0,45 Nm [4 in-lb]		0,45 Nm [4 in-lb]	0,45 Nm [4 in-lb]
Action	Maintained		CW & CCW (Spring return)	
Op. temp range³	-1 °C to 121 °C [30 °F to 250°F] (for low temp, high temp, or preloaded versions, see page 10)			-12 °C to 121 °C [10 °F to 250°F]

Circuitry	Contacts	Body Style ²	Conduit (NPT)	Options				
SPDT 	Silver	Plug-in	0.5 in		LSQ300	LSN1A		
	Gold ³	Plug-in	0.5 in		—	LSN1E		
	Silver	Plug-in	0.5 in	120 V Ind. lite*	—	LSN5A		
	Silver	Plug-in	0.5 in	240 V Ind. lite*	—	LSN8A		
	Silver	Non-plug-in	0.5 in		—	LSN3K		
DPDT 	Silver	Plug-in	0.75 in		—	LSN2B	LSM2D	LSL2C
	Silver	Plug-in	0.5 in		—	LSN6B	LSM6D	LSL6C
	Gold ³	Plug-in	0.5 in		—	—	LSM6U	—
	Silver	Non-plug-in	0.75 in		—	LSN4L	LSM4N	LSL4M
	Silver	Non-plug-in	0.5 in		—	LSN7L	LSM7N	LSL7M

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93°C [200 °F].

** Plug-in listings include base receptacle

*** Completely fluorocarbon-sealed switches are preferred for temperatures above 93 °C [200 °F].

¹ Mechanical trip before electrical trip.

² Total travel is approximately 80° max. Maintained contact switch normally used with LSZ53 yoke actuator.

³ Gold-plated contacts

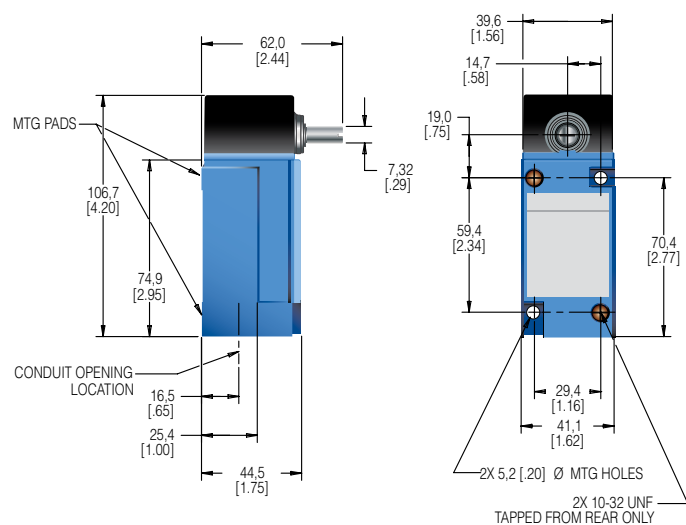
To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSYAC1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSYAB1A limit switch.

MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 2. MICRO SWITCH™ HDLS side rotary (single pole) dimensions

SPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])

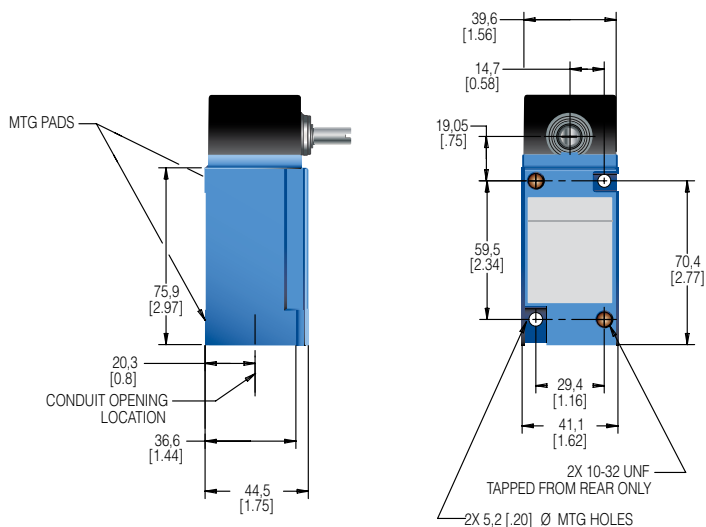
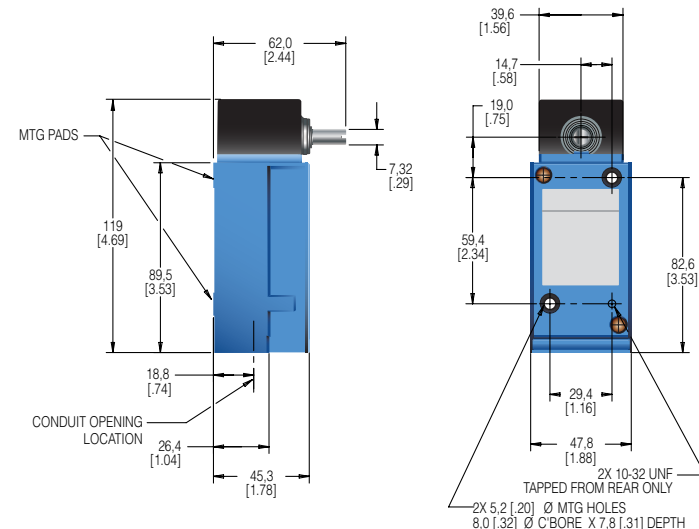
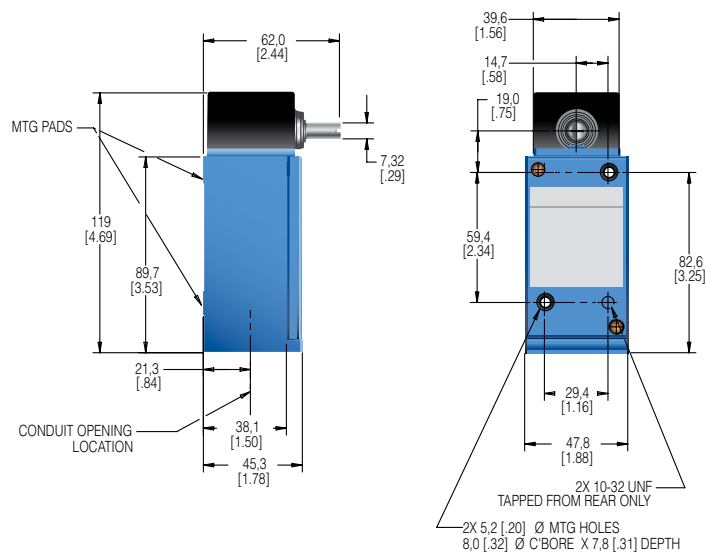


Figure 3. MICRO SWITCH™ HDLS side rotary (double pole) dimensions

DPDT Plug-in (mm[in])



DPDT Non-plug-in (mm[in])



TOP ROTARY • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS



Top Rotary (LSB)	
Description	High overtravel – often ideal when increased overtravel is required (100° min.). Uses same levers as side rotary
	SPDT Snap Action 1NO/1NC 3 4 1 2 0° 15° 25° 135° ↓ ↑ DPDT Snap Action 2NO/2NC 3 4 1 2 7 8 5 6 0° 13° 25° 135° ↓ ↑
Pretravel	25° max.
Different. travel	10° max.
Overtravel	110° min.
Oper. torque	0,28 Nm [2.5 in lb] max.
Op. temp range³	-12 °C to 121 °C [10 °F to 250 °F] (for low temp, high temp, or preloaded versions, see page 10)

Circuitry		Contacts	Body Style ²	Conduit (NPT)	Options		
SPDT		Silver	Plug-in	0.5 in		LSB1A	—
		Gold ⁴	Plug-in	0.5 in		LSB1E	—
		Silver	Plug-in	0.5 in	120 V Ind. lite*	LSB5A	—
		Silver	Plug-in	0.5 in	240 V Ind. lite*	LSB8A	—
		Silver	Plug-in	0.5 in	24 V LED lit 1.5 mA max. auto polarity	LSB9A	—
		Silver	Non-plug-in	0.5 in		LSB3K	—
DPDT		Silver	Plug-in	0.75 in		—	LSB2B
		Silver	Plug-in	0.5 in		—	LSB6B
		Silver	Plug-in	0.75 in	120 V Ind. lite*	—	LSB2R
		Silver	Non-plug-in	0.75 in		—	LSB4L
		Silver	Non-plug-in	0.5 in		—	LSB7L

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93 °C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

⁴ Gold-plated contacts

To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a **LSYAC1A** limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSYAB1A limit switch.

MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 4. MICRO SWITCH™ HDLS top rotary (single pole) dimensions

SPDT Plug-in (mm[in])

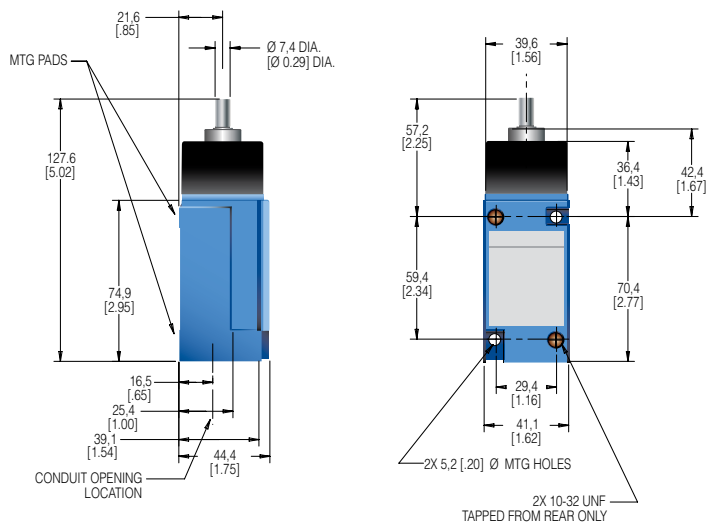
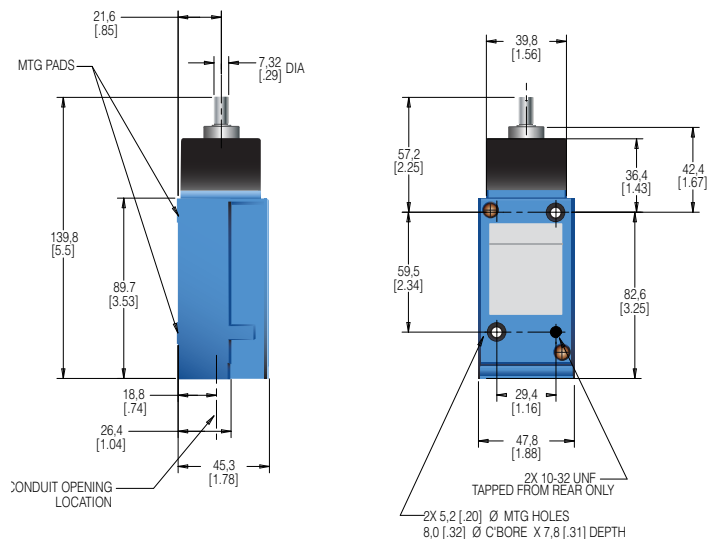
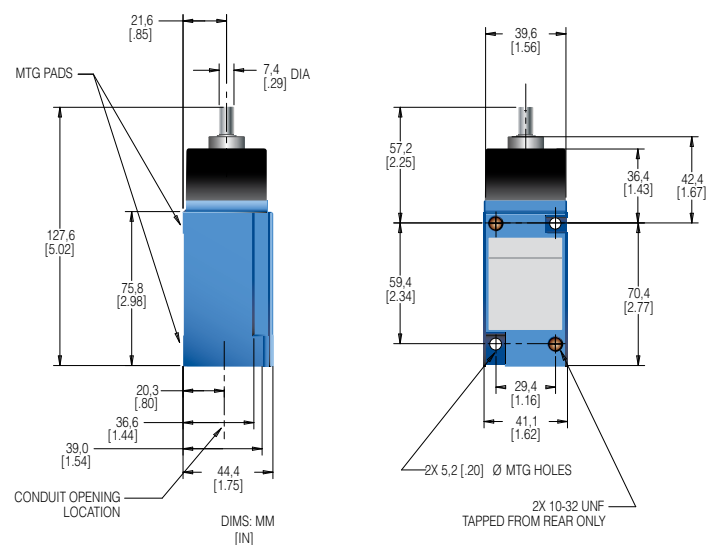


Figure 5. MICRO SWITCH™ HDLS top rotary (double pole) dimensions

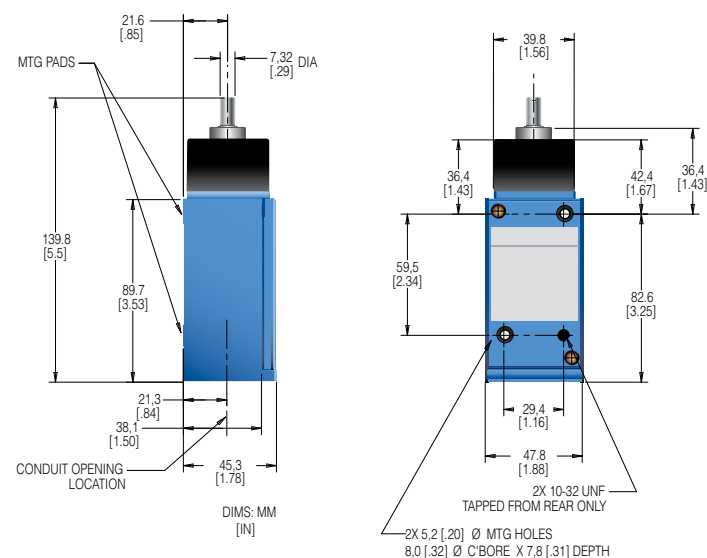
DPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])



DPDT Non-plug-in (mm[in])



HDLS Series

Table 2. Common levers for use with MICRO SWITCH™ HDLS Rotary Switches

Levers for use with side or top rotary actuated switches are available in a wide choice of sizes and materials. The most common listings are shown below. Rollers may be on either side of the lever to best match the external acutating mechanism.

				
LSZ51A&C fixed rotary lever, nylon roller, front/ backl	LSZ51B&D fixed rotary lever, steel roller, front/ back	LSZ59A,LSZ59B, LSZ59C,LSZ59D short fixed lever, front/back		LSZ69CA spoke lever - 6 inches
				
LSZ55A,LSZ55B, LSZ55C,LSZ55D offset lever, front/back	LSZ60 one-way roller lever	LSZ53A, LSZ53B, LSZ53C, LSZ53D yoke lever, nylon and steel rollers, front/back placement	LSZ54R spring wire 304,8 mm [12 in]	
				
LSZ52A, LSZ52B, LSZ52C, LSZ52D adj. lever, nylon/ steel, front/back	LSZ52J adjustable lever, nylon roller 25,4 mm [1 in]	LSZ52K adjustable lever, nylon roller 38,1 [1.5 in]	LSZ54M aluminum rod 139,7 mm [5.5 in]	LSZ61 loop 152,4 mm [6 in]
				
				
				
				LSZ67AA Plastic conveyor roller
				LSZ68 rod w/ spring 304,8 mm [12 in]
				LSZ54N stainless steel rod 330,2 mm [13 in]

MICRO SWITCH™ Heavy-Duty Limit Switches

Table 3. HDLS SERIES ACTUATOR CODE TABLE (see previous page)

	Catalog Listing	Material	Roller Dia. (in)	Roller Width (in)	Roller Mounting
Fixed 1.5 inch radius					
	–	Rollerless	n/a	n/a	n/a
	LSZ51A	Nylon	0.75	0.25	Front
	LSZ51B	Steel	0.75	0.25	Front
	LSZ51C	Nylon	0.75	0.25	Back
	LSZ51D	Steel	0.75	0.25	Back
	LSZ51F	Nylon	1.0	0.520	Front
	LSZ51G	Nylon	1.5	0.25	Front
	LSZ51J	Nylon	1.0	0.520	Back
	LSZ51L	Ball bearing	0.75	0.25	Back
	LSZ51M	Nylon	0.75	1.25	Back
	LSZ51N	Steel	0.75	1.25	Front
	LSZ51P	Nylon	0.75	0.50	Front
Adjustable 1.5 in to 3.5 in radius					
	–	Rollerless	n/a	n/a	n/a
	LSZ52A	Nylon	0.75	0.25	Back
	LSZ52B	Steel	0.75	0.25	Back
	LSZ52C	Nylon	0.75	0.25	Front
	LSZ52D	Steel	0.75	0.25	Front
	LSZ52E	Nylon	0.75	1.30	Front
	LSZ52J	Nylon	1.0	0.50	Front
	LSZ52K	Nylon	1.5	0.25	Front
	LSZ52L	Ball bearing	0.75	0.25	Front
	LSZ52M	Nylon	2.0	0.25	Front
	LSZ52N	Nylon	0.75	0.50	Front
Yoke – 1.5 in radius					
	LSZ53A	Nylon	0.75	0.25	Front/Back
	LSZ53B	Steel	0.75	0.25	Front/Back
	LSZ53D	Steel	0.75	0.25	Front/Front
	LSZ53E	Nylon	0.75	0.25	Back/Front
	LSZ53M	Nylon	0.75	1.25	Back/Front
	LSZ53P	Steel	0.75	0.25	Back/Back
	LSZ53S	Nylon	0.75	0.25	Back/Back
Rod					
	–	Hub only	n/a	n/a	n/a
	LSZ54M	Alum, 5.5 in	Ø 0.125	n/a	n/a
	LSZ54N	Stainless, 13 in	Ø 0.125	n/a	n/a
	LSZ54R	SST spring wire, 12 in	Ø 0.075	n/a	n/a
	LSZ54V	Flex cable (tin plated steel), 4.8 in	Ø 0.19	n/a	n/a
	LSZ54P	Plastic rod, 12 in	Ø 0.27	n/a	n/a
	LSZ54W	Plastic rod, 7.2 in	Ø 0.27	n/a	n/a
	LSZ59T	13 in stainless steel	Ø 0.19	n/a	n/a
Spoke					
	LSZ69CA	Stainless	6.0	n/a	n/a

	Catalog Listing	Material	Roller Dia. (in)	Roller Width (in)	Roller Mounting
Fixed 1.5 in radius					
	–	Rollerless	n/a	n/a	n/a
	LSZ55A	Nylon	0.75	0.25	Back
	LSZ55B	Steel	0.75	0.25	Back
	LSZ55C	Nylon	0.75	0.25	Front
	LSZ55D	Steel	0.75	0.25	Front
	LSZ55E	Nylon	0.75	0.50	Front
	LSZ55K	Nylon	1.5	0.25	Front
Short fixed - 1.3 in radius					
	LSZ59A	Nylon	0.75	0.25	Front
	LSZ59B	Steel	0.75	0.25	Front
	LSZ59C	Nylon	0.75	0.25	Back
	LSZ59D	Steel	0.75	0.25	Back
1.5 in radius one-way roller lever					
	LSZ60A	Nylon	0.75	0.25	Front
	LSZ60B	Steel	0.75	0.25	Front
Flexible loop					
	LSZ61	Ø 0.19 Nylon	6 inch flexible loop/cap screw		
	LSZ618	Ø 0.19 Nylon	9.5 inch flexible loop/cap screw		
	LSZ54	Hub only	n/a	n/a	n/a
Spring rod					
	LSZ68	Delrin rod, 12 in	Ø 0.25	n/a	n/a
	LSZ617	Delrin rod, 16 in	Ø 0.25	n/a	n/a
	LSZ686	Delrin rod, 6 in	Ø 0.25	n/a	n/a
Rubber roller levers					
	LSZ51Y (standard)	Rubber	2.0	0.5	front
	LSZ55Y (offset)	Rubber	2.0	0.5	front
	LSZ52Y (adjustable)	Rubber	2.0	0.5	front
Plastic roller levers					
	LSZ67AA* (conveyor)	Plastic	1.5	3.8	n/a

* may require orientation of switch and lever to enable gravity to help restore free position of switch.

HDLS Series

MICRO SWITCH™ HDLS SIDE ROTARY LEVERS' CAM TRACKING

Levers for side and top rotary switches are normally ordered as separate catalog listings. They also may be ordered by including a suffix to the switch catalog listing (see nomenclature tree in this document) and adding the lever price.

Figure 6. LSZ51 type levers cam tracking

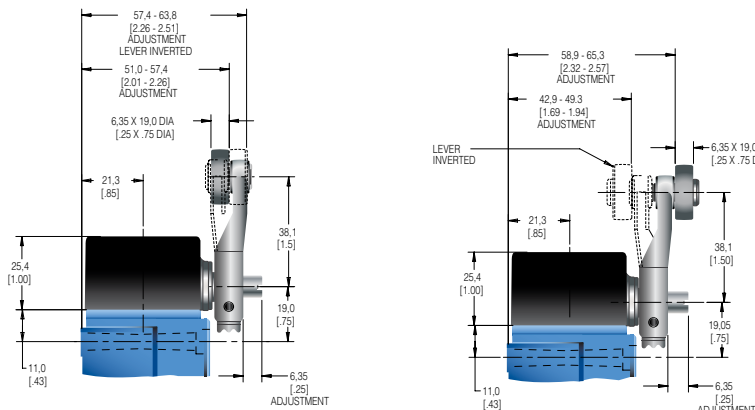


Figure 7. LSZ52 type levers cam tracking

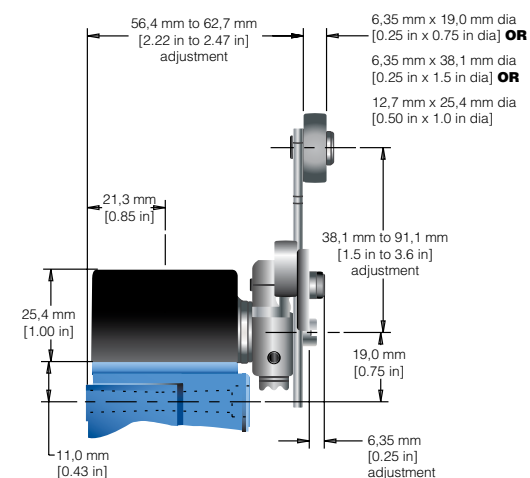


Figure 8. LSZ54 type levers cam tracking

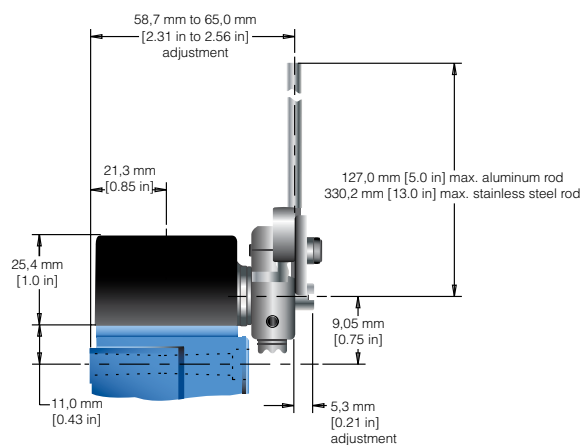
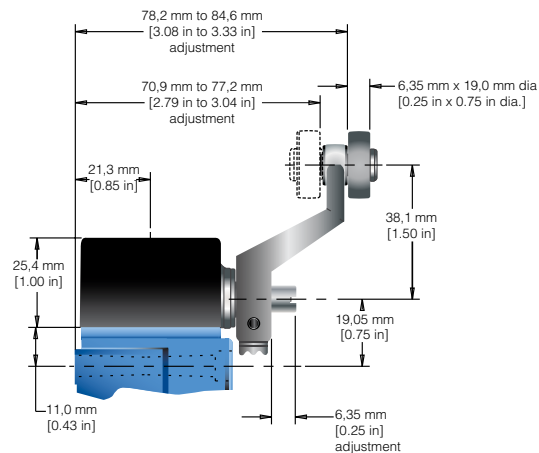


Figure 9. LSZ55 type levers cam tracking



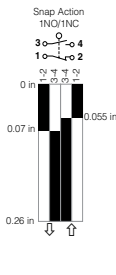
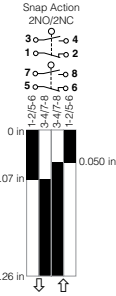
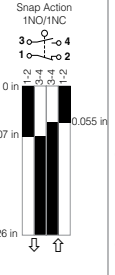
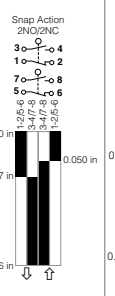
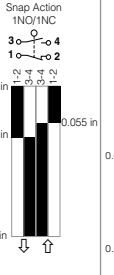
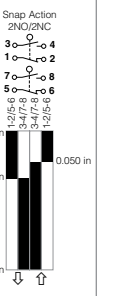
MICRO SWITCH™ Heavy-Duty Limit Switches

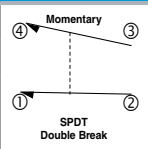
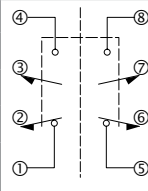
TOP PLUNGERS • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS

All top plungers are momentary action.



	Plain (LSC)	Roller (LSD)	Adjustable (LSV)
			
Description	Top plain plunger for in-line operating motion	Roller plunger – can be set at 90° increments to accept cam or slide actuation	Adjustable top plain plunger simplifies installation since operating point can be adjusted from 2.085 in to 2.335 in

	SPDT	DPDT	SPDT	DPDT	SPDT	DPDT
						
Contact closed ■ Contact open □						
Pretravel	1,78 mm [0.07 in]					
Different. travel	0,38 mm [0.015 in]	0,51 mm [0.02 in]	0,38 mm [0.015 in]	0,51 mm [0.02 in]	0,38 mm [0.015 in]	0,51 mm [0.02 in]
Overtravel	4,83 mm [0.19 in]					
Operating force	17,8 N [4 lb] max.					
Op. temp range ³	-12 °C to 93 °C [10 °F to 200 °F] (for low temp, high temp, or preloaded versions, see page 10)					

Circuitry	Contacts	Body Style ²	Conduit (NPT)	Options			
SPDT 	Silver	Plug-in	0.5 in		LSC1A	LSD1A	LSV1A
	Gold ⁴	Plug-in	0.5 in		LSC1E	LSD1E	LSV1E
	Silver	Plug-in	0.5 in	120 V Ind. lite*	LSC5A	LSD5A	LSV5A
	Silver	Plug-in	0.5 in	240 V Ind. lite*	LSC8A	LSD8A	LSV8A
	Silver	Non-plug-in	0.5 in		LSC3K	LSD3K	LSV3K
DPDT 	Silver	Plug-in	0.75 in		LSC2B	LSD2B	LSV2B
	Silver	Plug-in	0.5 in		LSC2R	LSD2R	LSV2R
	Silver	Plug-in	0.75 in	120 V Ind. lite*	LSC6B	LSD6B	LSV6B
	Silver	Non-plug-in	0.75 in		LSC4L	LSD4L	LSV4L
	Silver	Non-plug-in	0.5 in		LSC7L	LSD7L	LSV7L

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93 °C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

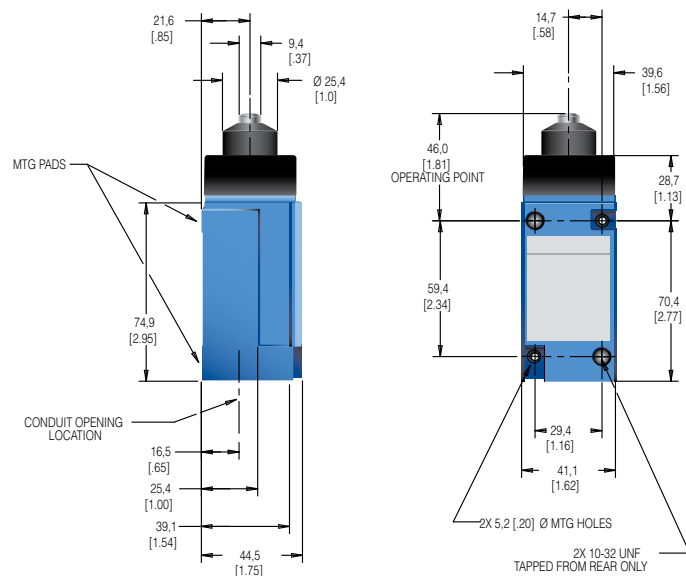
⁴ Gold-plated contacts

To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AC**1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AB**1A limit switch.

HDLS Series

Figure 10. MICRO SWITCH™ HDLS LSC Series (single pole plunger dimensions)



SPDT Non-plug-in (mm[in])

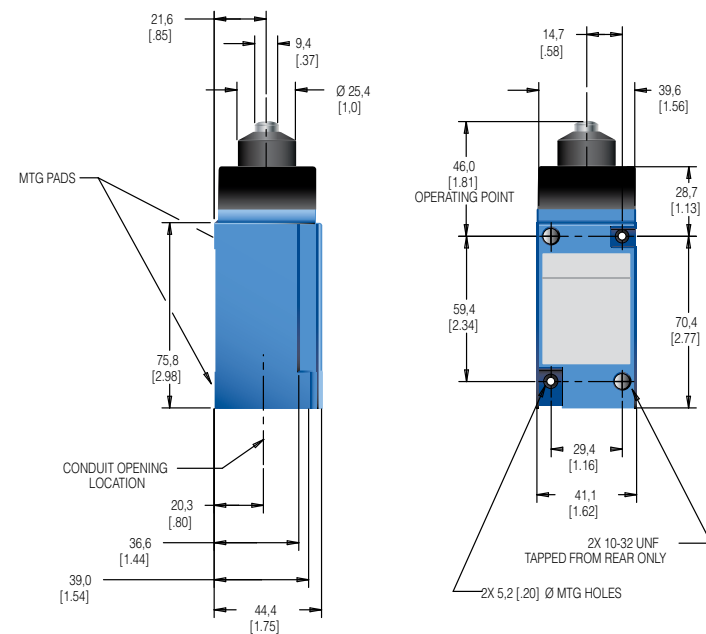
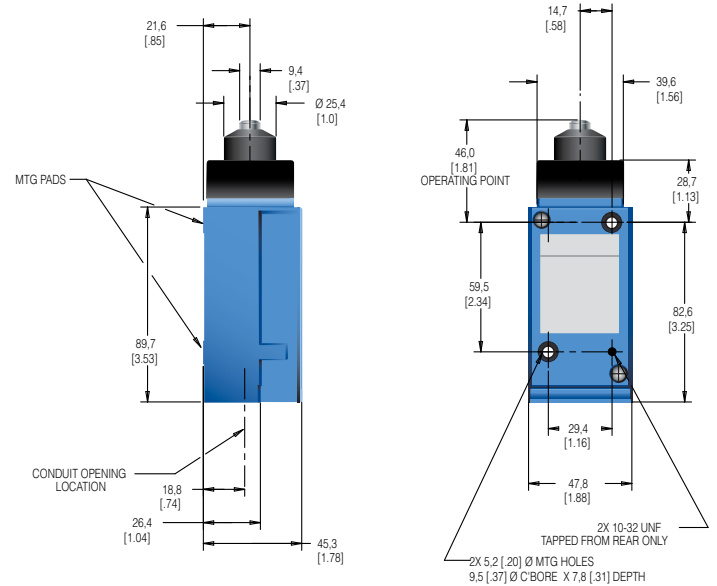
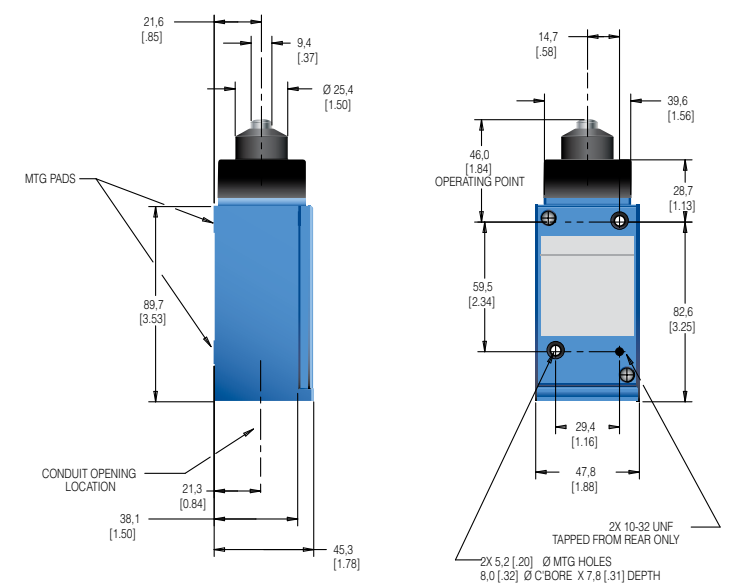


Figure 11. MICRO SWITCH™ HDLS LSC Series (double pole plunger dimensions)

DPDT Plug-in (mm[in])



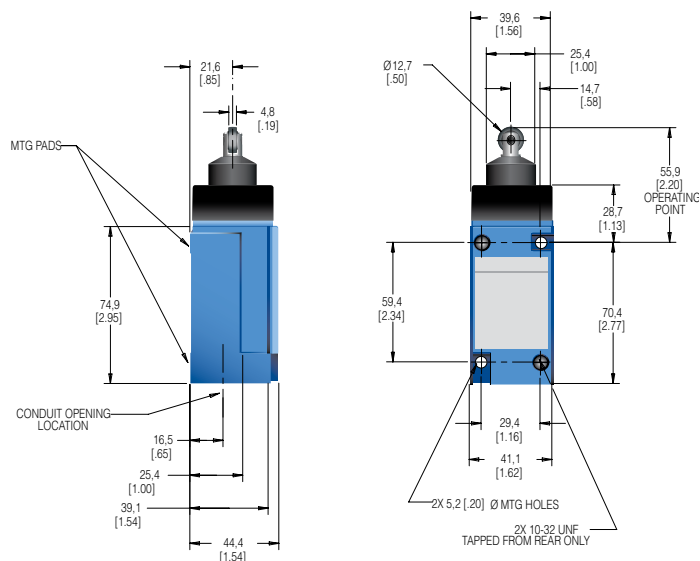
DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 12. MICRO SWITCH™ HDLS LSD Series (single pole) top roller plunger dimensions

SPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])

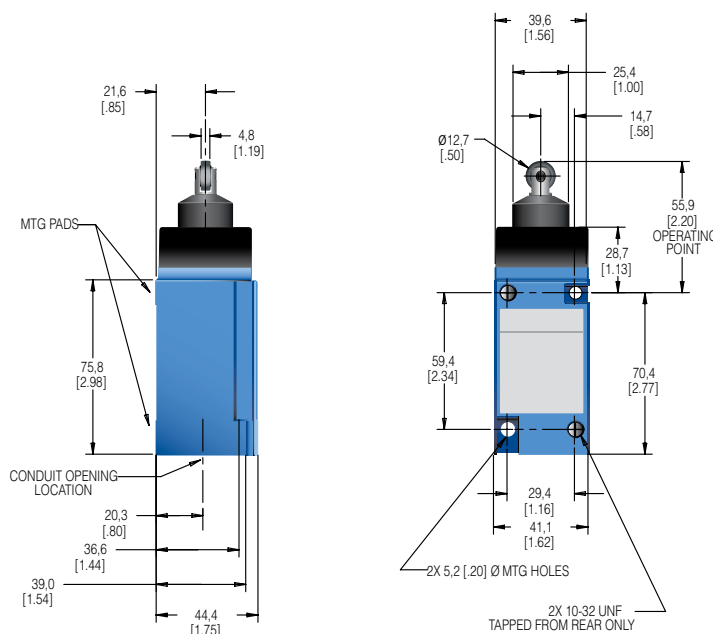
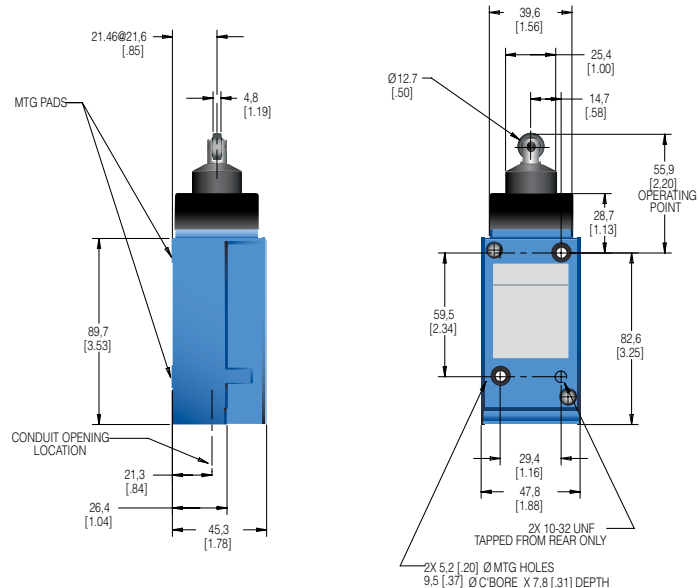
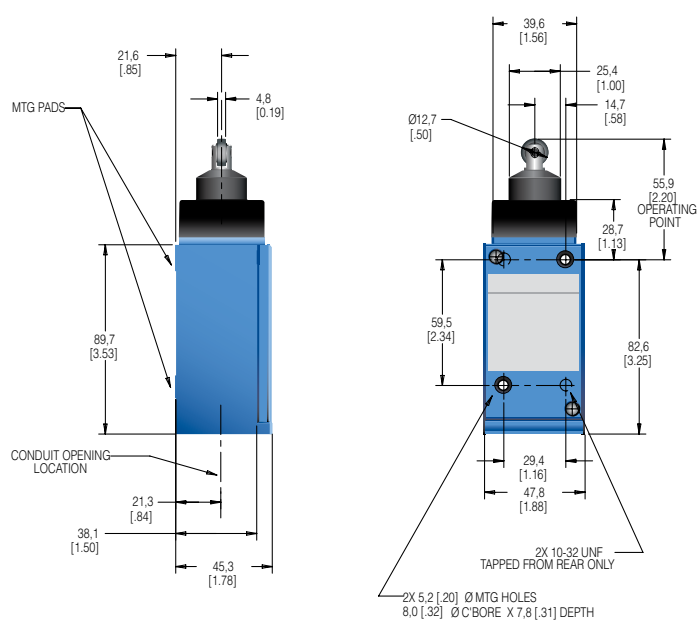


Figure 13. MICRO SWITCH™ HDLS LSD Series (double pole) top roller plunger dimensions

DPDT Plug-in (mm[in])



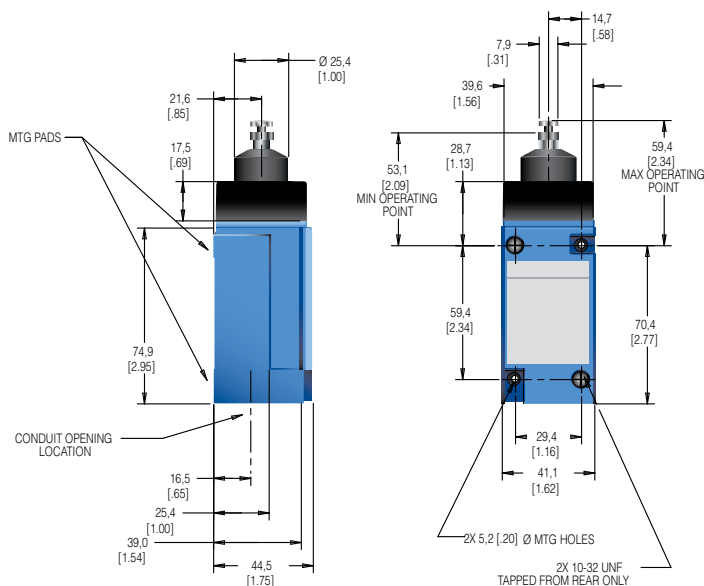
DPDT Non-plug-in (mm[in])



HDLS Series

Figure 14. MICRO SWITCH™ HDLS LSV Series top adjustable plunger (single pole) dimensions

SPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])

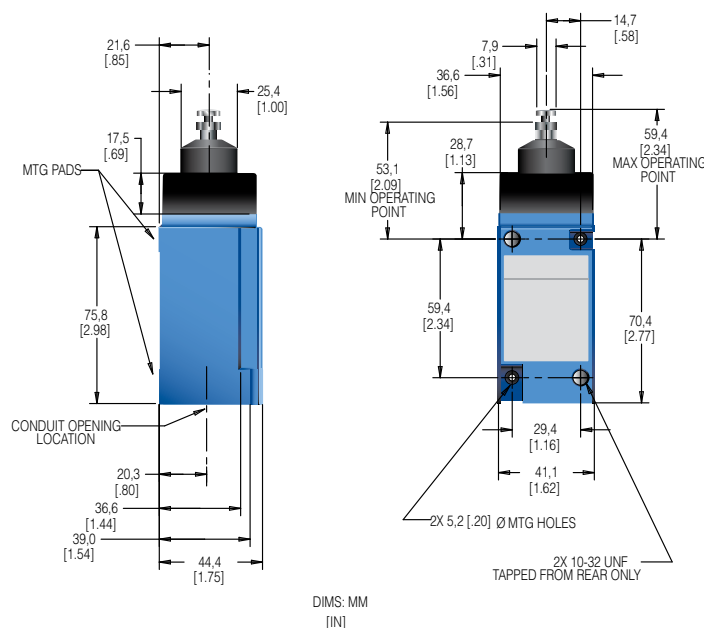
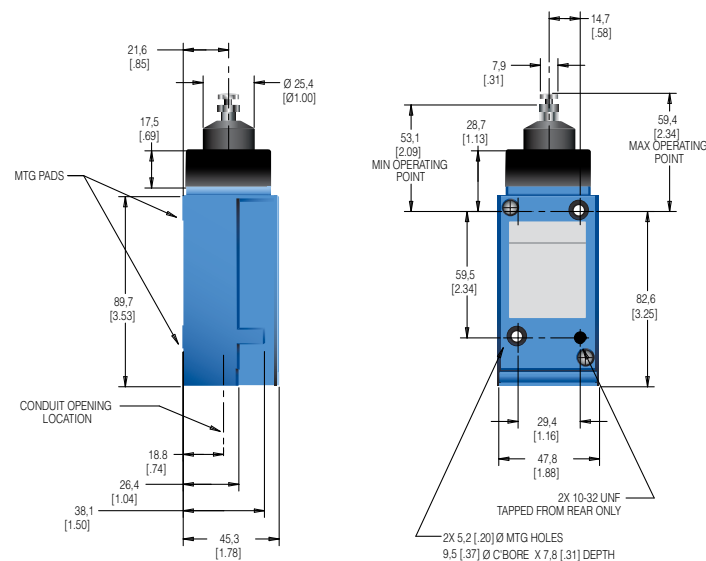
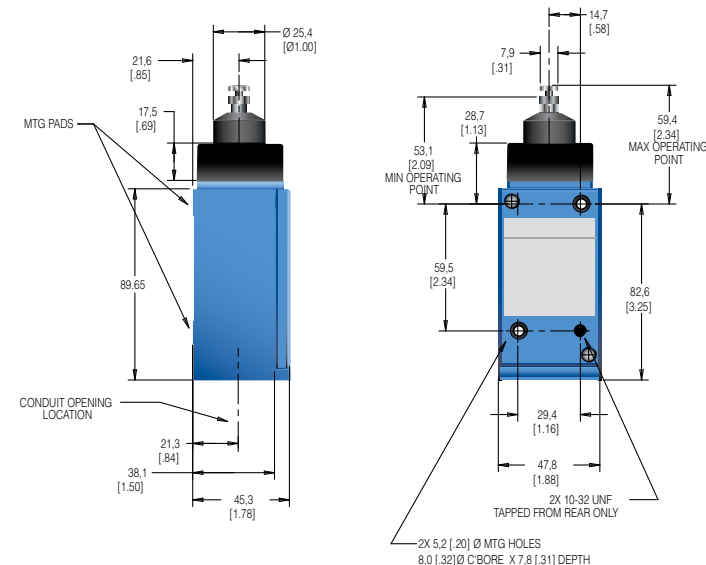


Figure 15. MICRO SWITCH™ HDLS LSV Series top adjustable plunger (double pole) dimensions

DPDT Plug-in (mm[in])



DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

SIDE PLUNGERS • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS

Heads may be positioned to accept actuation from any of four directions, 90° apart.



	Plain (LSE)	Roller (LSF)	Adjustable (LSW)	Maintained (LSG)
Description	Side plain plunger for in-line actuating (momentary)	Side roller plunger (momentary)	Adjustable side plain plunger (momentary)	Side plain plunger with maintained contact
Contact closed ■ Contact open □				
Pretravel	2,54 mm [0.10 in]			4,32 mm [0.17 in]
Different. travel	Single pole: 0,64 mm [0.025 in] Double pole: 0,89 mm [0.035 in]			2,29 mm [0.09 in]
Overtravel	4,83 mm [0.19 in]			2,0 mm [0.08 in]
Operating force	26,7 N [6 lb] max.			44,5 N [10 lb] max.
Op. temp range³	-12 °C to 93 °C [10 °F to 200°F] (for low temp, high temp, or preloaded versions, see page 10)			-1 °C to 93 °C [30 °F to 200°F]

Circuitry	Contacts	Body Style ²	Conduit (NPT)	Options				
	Silver	Plug-in	0.5 in		LSE1A	LSF1A	LSW1A	LSG1A
	Gold ⁴	Plug-in	0.5 in		LSE1E	LSF1E	LSW1E	LSG1E
	Silver	Plug-in	0.5 in	120 V Ind. lite*	LSE5A	LSF5A	LSW5A	LSG5A
	Silver	Plug-in	0.5 in	240 V Ind. lite*	LSE8A	LSF8A	LSW8A	LSG8A
	Silver	Non-plug-in	0.5 in		LSE3K	LSF3K	LSW3K	LSG3K
	Silver	Plug-in	0.75 in		LSE2B	LSF2B	LSW2B	LSG2B
	Silver	Plug-in	0.5 in		LSE2R	LSF2R	LSW2R	LSG2R
	Silver	Plug-in	0.75 in	120 V Ind. lite*	LSE6B	LSF6B	LSW6B	LSG6B
	Gold ⁴	Plug-in	0.5 in		LSE6S	-	-	-
	Silver	Non-plug-in	0.75 in		LSE4L	LSF4L	LSW4L	LSG4L
	Silver	Non-plug-in	0.5 in		LSE7L	LSF7L	LSW7L	LSG7L

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93 °C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

⁴ Gold-plated contacts

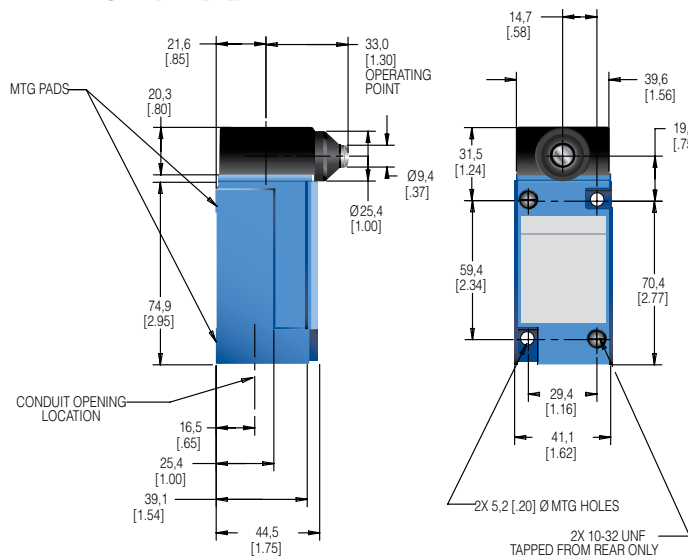
To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AC**1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AB**1A limit switch.

HDLS Series

Figure 16. MICRO SWITCH™ HDLS LSE Series side plain plunger (single pole) dimensions

SPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])

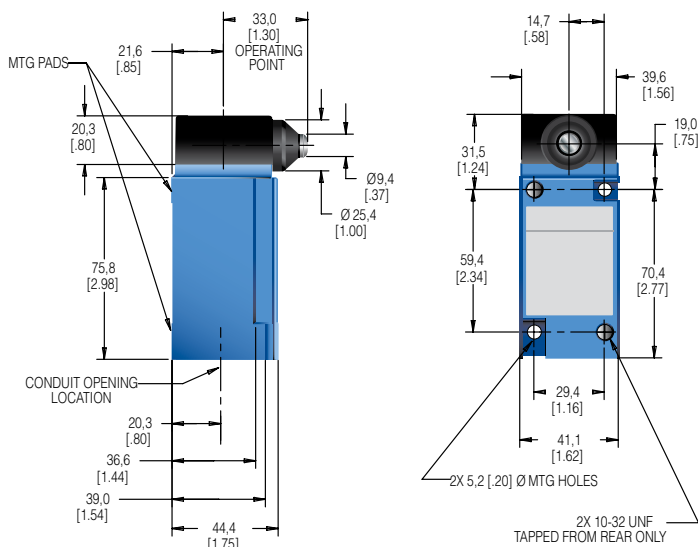
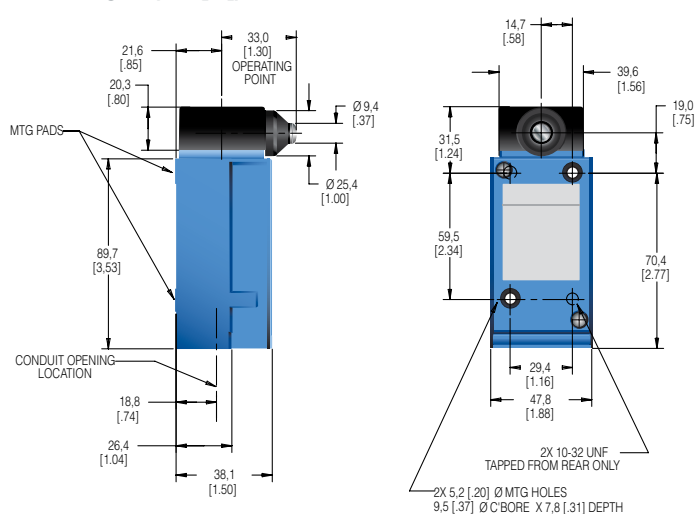
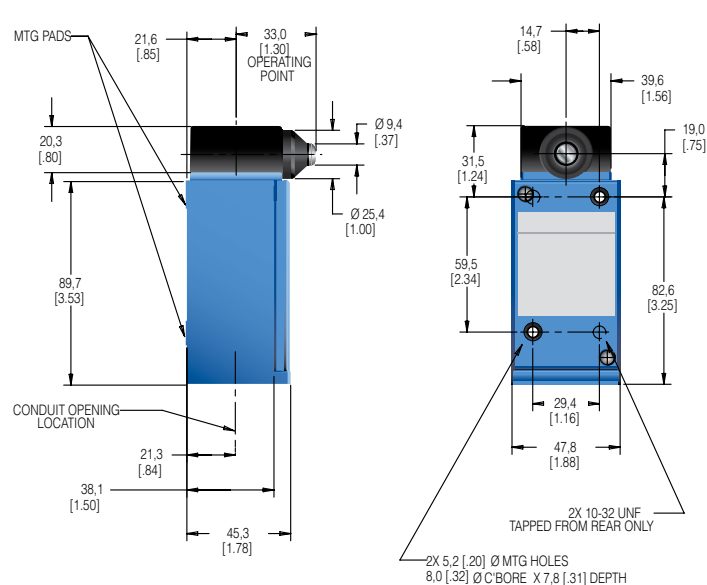


Figure 17. MICRO SWITCH™ HDLS LSE Series side plain plunger (double pole) dimensions

DPDT Plug-in (mm[in])



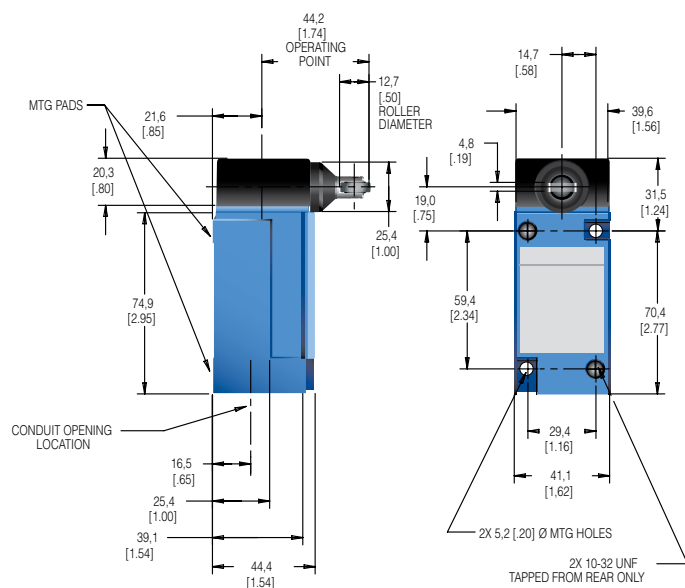
DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 18. MICRO SWITCH™ HDLS LSF Series side roller plunger (single pole) dimensions

SPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])

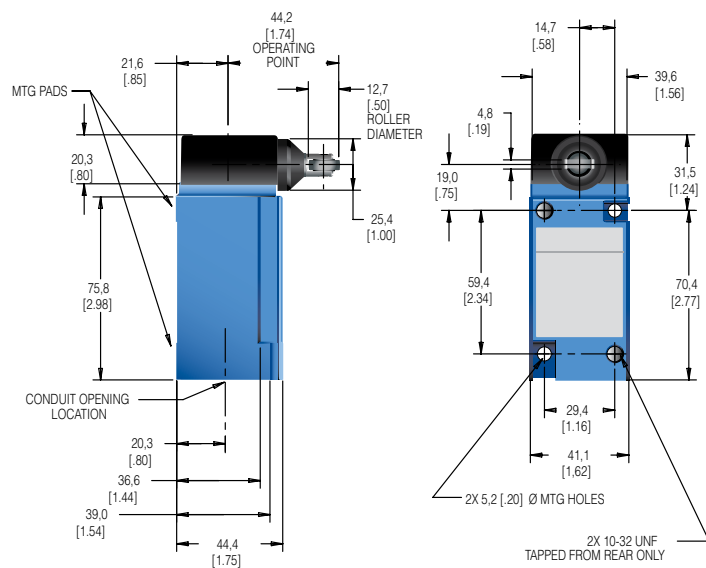
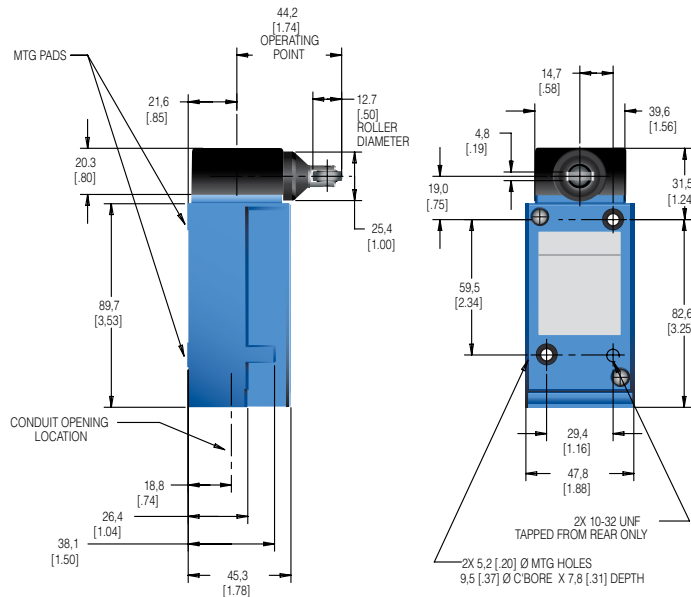
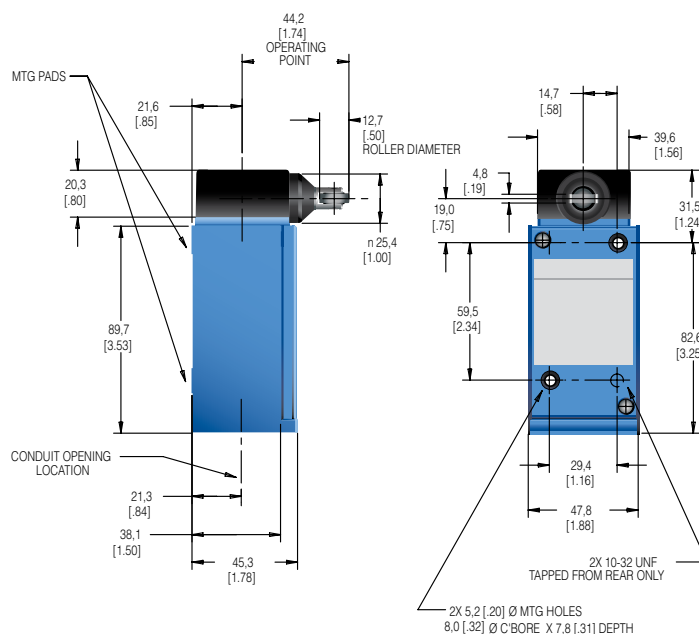


Figure 19. MICRO SWITCH™ HDLS LSF Series side roller plunger (double pole) dimensions

DPDT Plug-in (mm[in])



DPDT Non-plug-in (mm[in])



HDLS Series

Figure 20. MICRO SWITCH™ HDLS LSW Series side adjustable plunger (single pole) dimensions

SPDT Plug-in (mm[in])

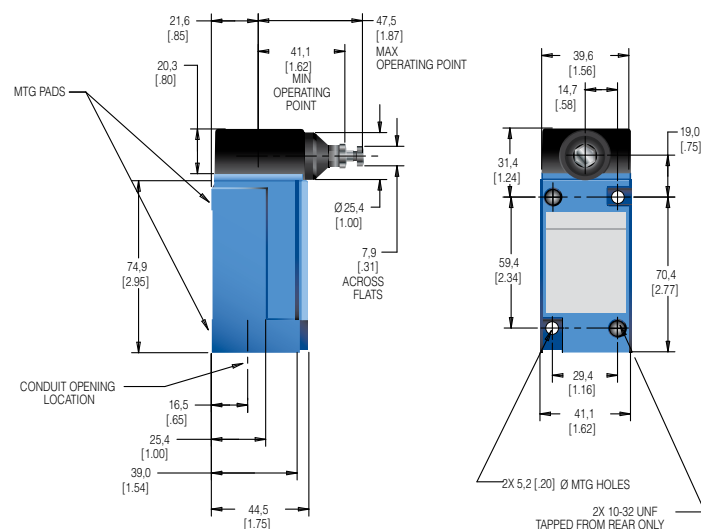
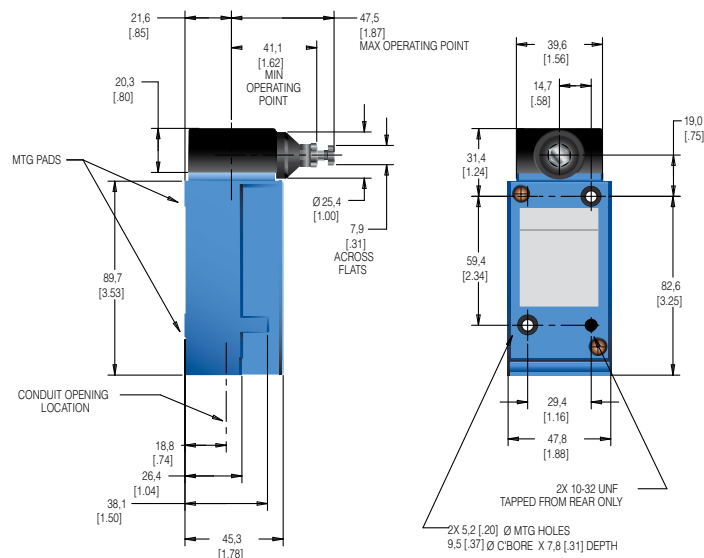
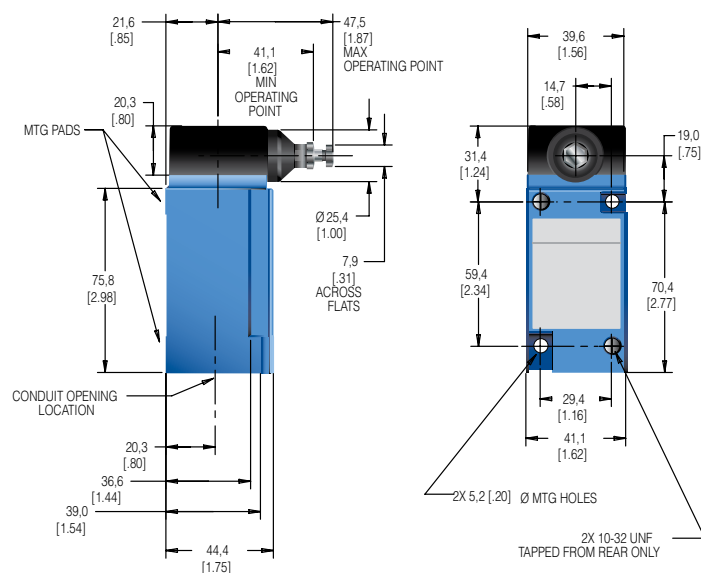


Figure 21. MICRO SWITCH™ HDLS LSW Series side adjustable plunger (double pole) dimensions

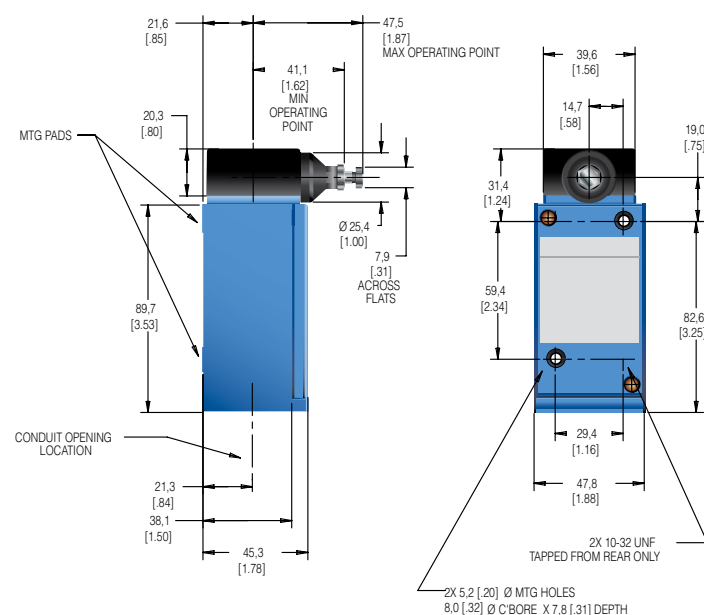
DPDT Plug-in (mm[in])



SPDT Non-plug-in (mm[in])



DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 22. MICRO SWITCH™ HDLS LSG Series maintained contact side plunger (single pole) dimensions

SPDT Plug-in (mm[in])

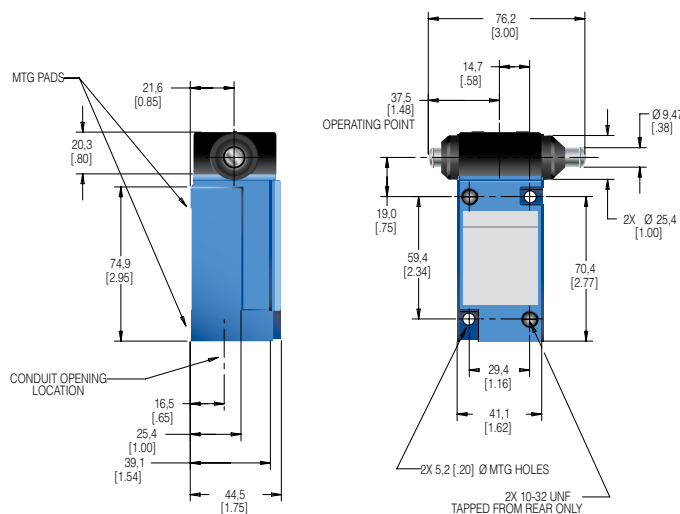
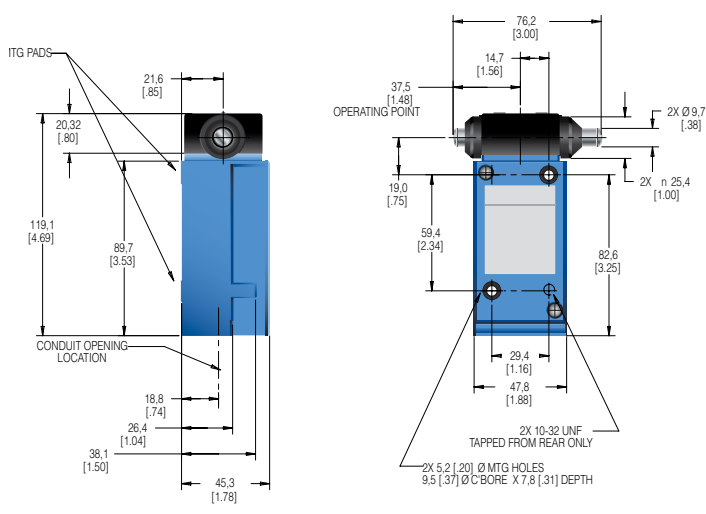
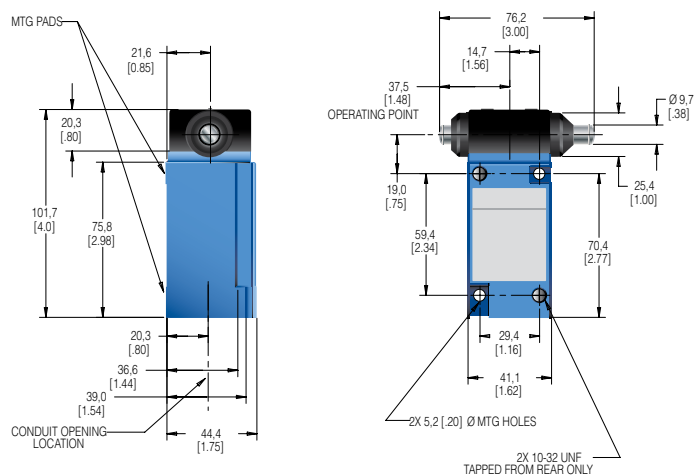


Figure 23. MICRO SWITCH™ HDLS LSG Series maintained contact side plunger (double pole) dimensions

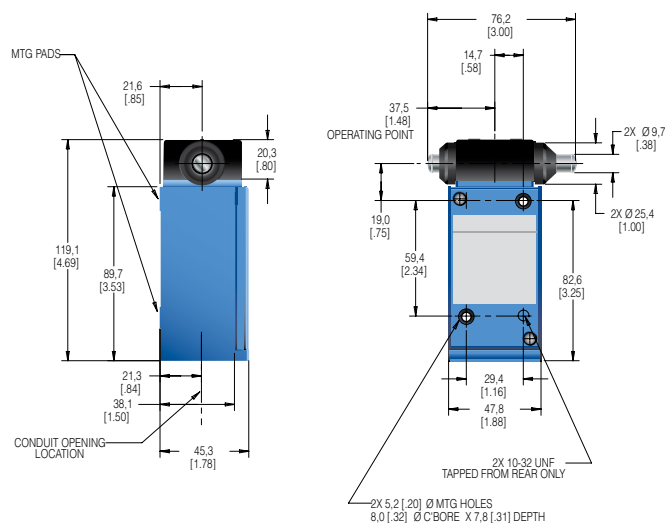
DPDT Plug-in (mm[in])



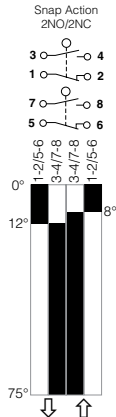
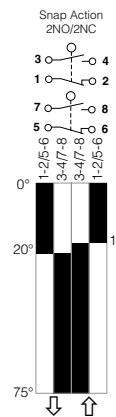
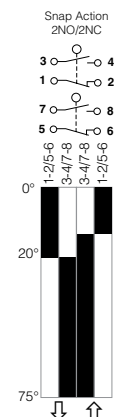
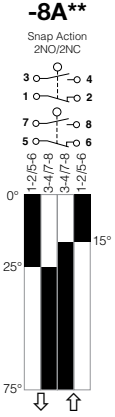
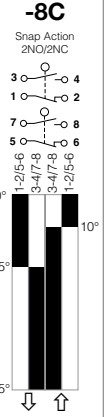
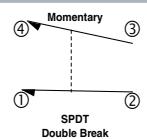
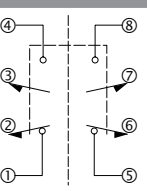
SPDT Non-plug-in (mm[in])



DPDT Non-plug-in (mm[in])



WOBBLES • MICRO SWITCH™ HDLS SERIES ORDER GUIDE/RECOMMENDED LISTINGS

					LSJ Series 7A Actuator	LSJ Series 7N Actuator	LSJ Series 7M Actuator	LSK Series 8A-8C Actuator		
Description					Delrin® plastic rod lever (wobble stick)	Flexible cable lever	Spring wire lever - may be formed for special needs	Cat whisker actuator for low operating force applications		
 LSJ1A-7A - Plastic rod LSJ1A-7M - Spring wire LSJ1A-7N - Flexible actuator LSK1A-8A - Cat whisker LSK1A-8C - Coil spring										
					Length	Actuator: 5.5 in	Actuator: 5.5 in	Actuator: 13 in	8A act.: 5.5 in SST 8C act.: 5.5 in steel plated	
					Pretravel	25,4 mm [1.0 in]	38,0 mm [1.5 in]	102 mm [4.0 in]	51,0 mm [2.0 in]	
					Oper. force	2,78 Nm [10 oz]	1,95 Nm [7 oz]	1,39 Nm [5 oz]	8A: 1,39 Nm [5 oz]; 8C: 1,95 Nm [7 oz]	
					Op. temp range ³	-12 °C to 93 °C [10°F to 200 °F] (for low temp, high temp, or preloaded versions, see page 10)				
Circuitry		Contacts	Body Style ²	Conduit (NPT)	Options					
SPDT		Silver	Plug-in	0.5 in		LSJ1A-7A	LSJ1A-7N	LSJ1A-7M	LSK1A-8A	LSK1A-8C
		Gold ⁴	Plug-in	0.5 in		-	-	LSJ1E-7M	-	-
		Silver	Plug-in	0.5 in	120 V Ind. lite*	LSJ5A-7A	LSJ5A-7N	LSJ5A-7M	LSK5A-8A	LSK5A-8C
		Silver	Plug-in	0.5 in	240 V Ind. lite*	LSJ8A-7A	LSJ8A-7N	LSJ8A-7M	LSK8A-8A	LSK8A-8C
DPDT		Silver	Non-plug-in	0.5 in		LSJ3K-7A	LSJ3K-7N	LSJ3K-7M	LSK3K-8A	LSK3K-8C
		Silver	Plug-in	0.75 in		LSJ2B-7A	LSJ2B-7N	LSJ2B-7M	LSK2B-8A	LSK2B-8C
		Silver	Plug-in	0.5 in		LSJ6B-7A	LSJ6B-7N	LSJ6B-7M	LSK6B-8A	LSK6B-8C
		Silver	Plug-in	0.75 in	120 V Ind. lite*	LSJ2R-7A	LSJ2R-7N	LSJ2R-7M	LSK2R-8A	LSK2R-8C
		Silver	Non-plug-in	0.75 in		LSJ4L-7A	LSJ4L-7N	LSJ4L-7M	LSK4L-8A	LSK4L-8C
		Silver	Non-plug-in	0.5 in		LSJ7L-7A	LSJ7L-7N	LSJ7L-7M	LSK7L-8A	LSK7L-8C

* Use at voltage indicated for light. Wired to NO circuit. Upper temperature limit for lighted units is 93°C [200 °F]

² Plug-in listings include base receptacle

³ Completely fluorocarbon sealed switches are preferred for use in temperatures above 93 °C [200 °F]

⁴ Gold-plated contacts

** These cat whiskers have a 5.5 inch long actuator. To specify a 7.5 inch length actuator, substitute **-8B** for **-8A**.

To order a fluorocarbon sealed switch, insert the letters **Y** and **C** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AC**1A limit switch.

To order a low temperature, fluorosilicone sealed switch, insert the letters **Y** and **B** into the catalog listing as follows. The LSA1A limit switch is changed to a LSY**AB**1A limit switch.

MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 24. MICRO SWITCH™ HDLS LSJ__-7A Series wobble (single pole) dimensions

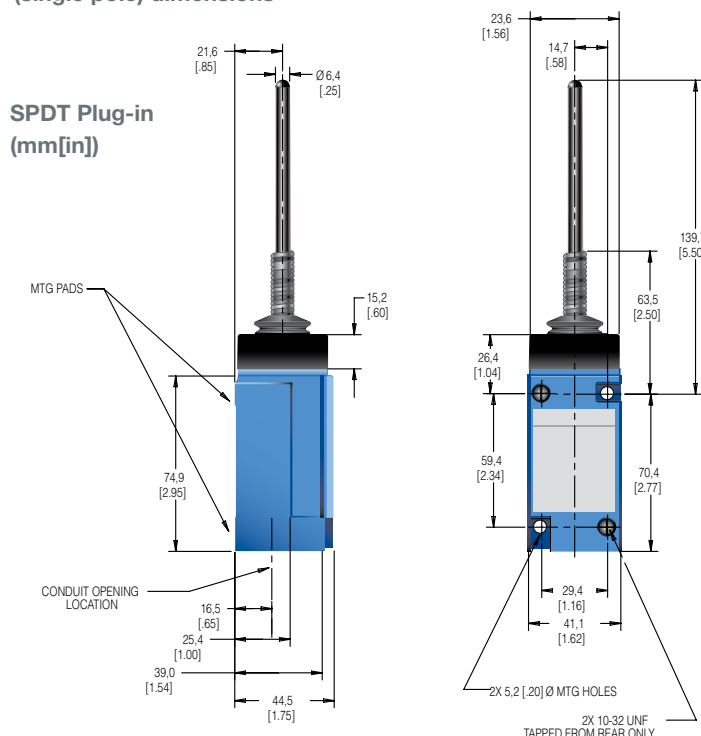
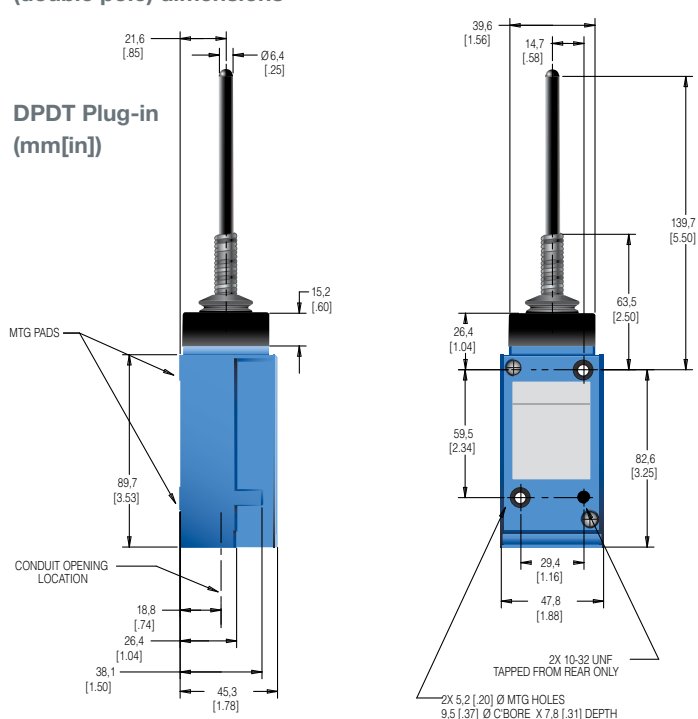
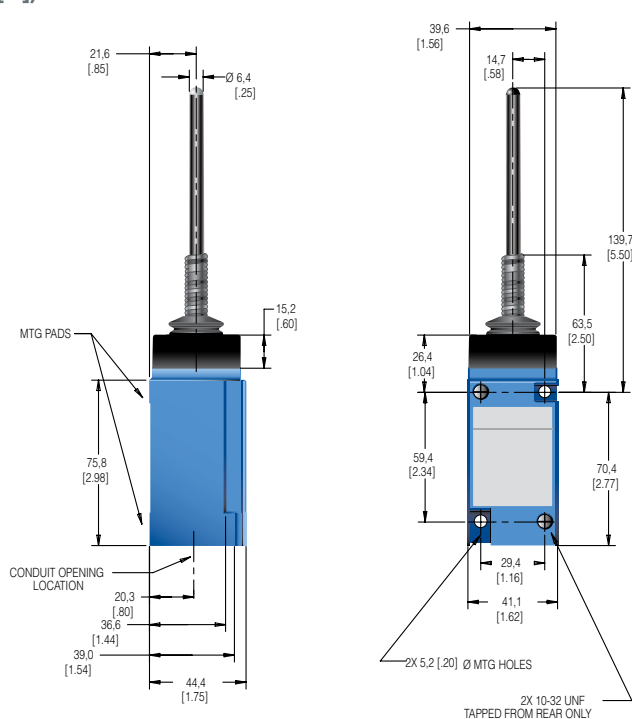


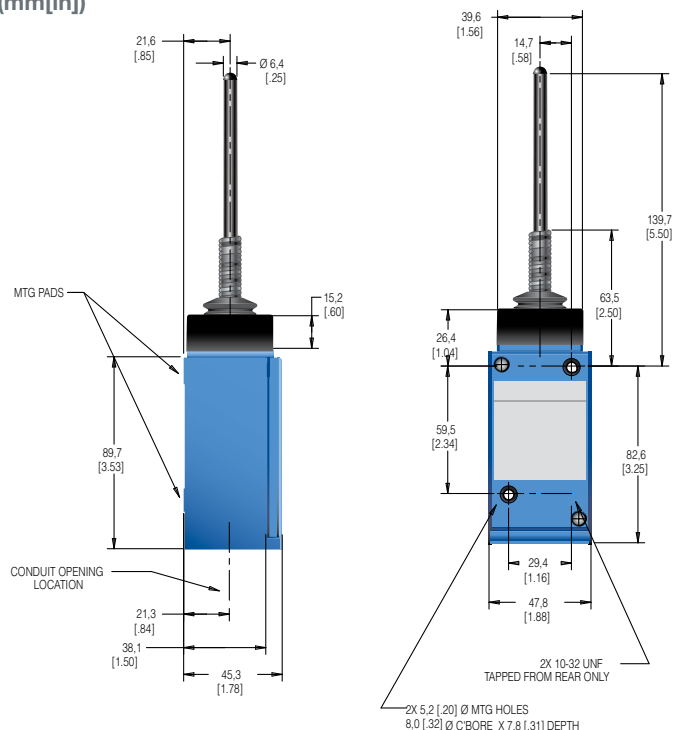
Figure 25. MICRO SWITCH™ HDLS LSJ__-7A Series wobble (double pole) dimensions



SPDT Non-plug-in (mm[in])



DPDT Non-plug-in (mm[in])



HDLS Series

Figure 26. MICRO SWITCH™ HDLS LSJ_ _-7N Series wobble (single pole) dimensions

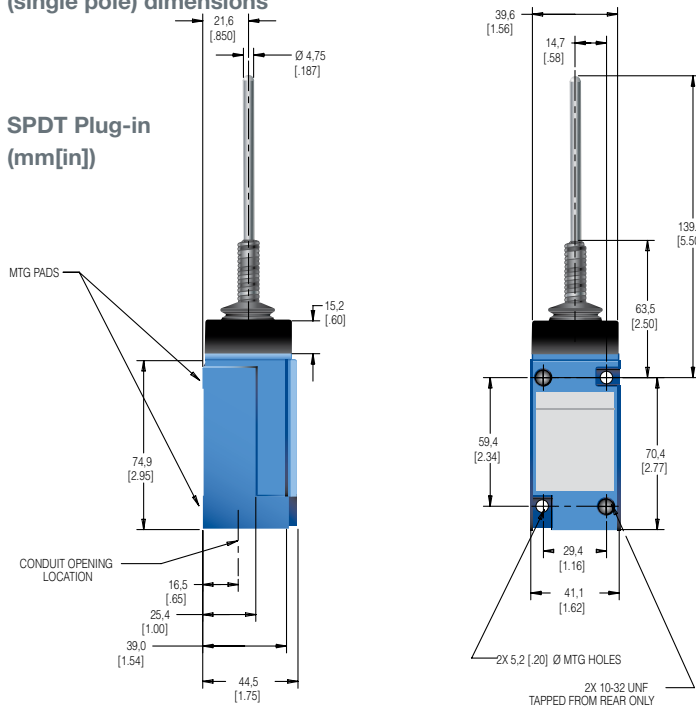
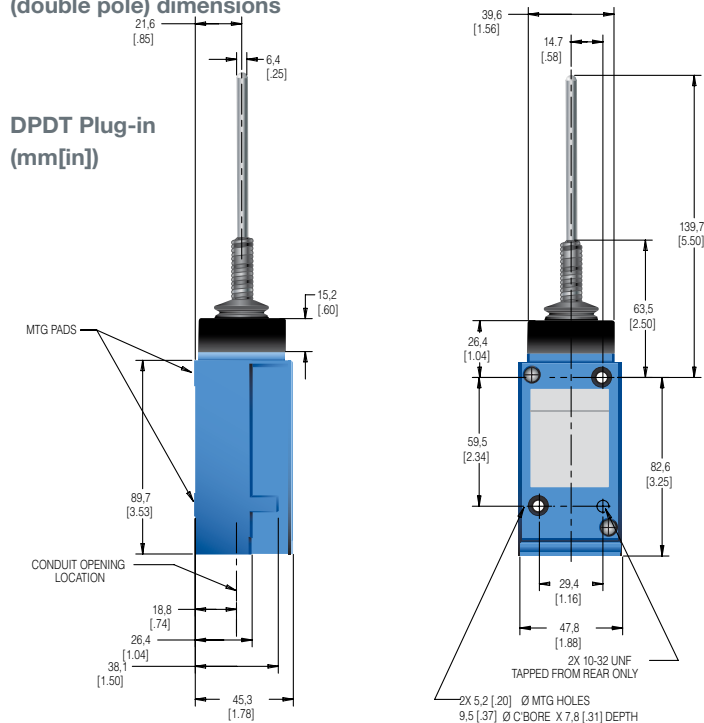
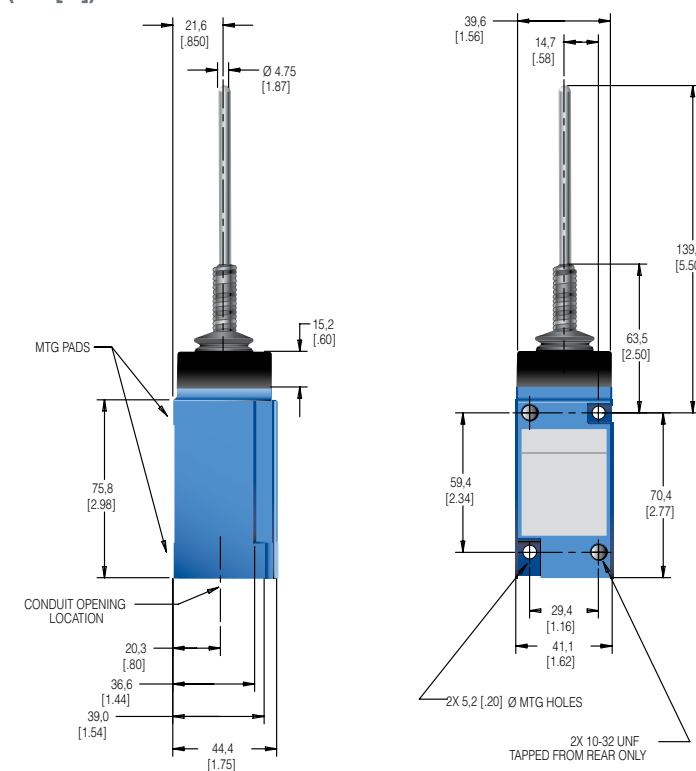


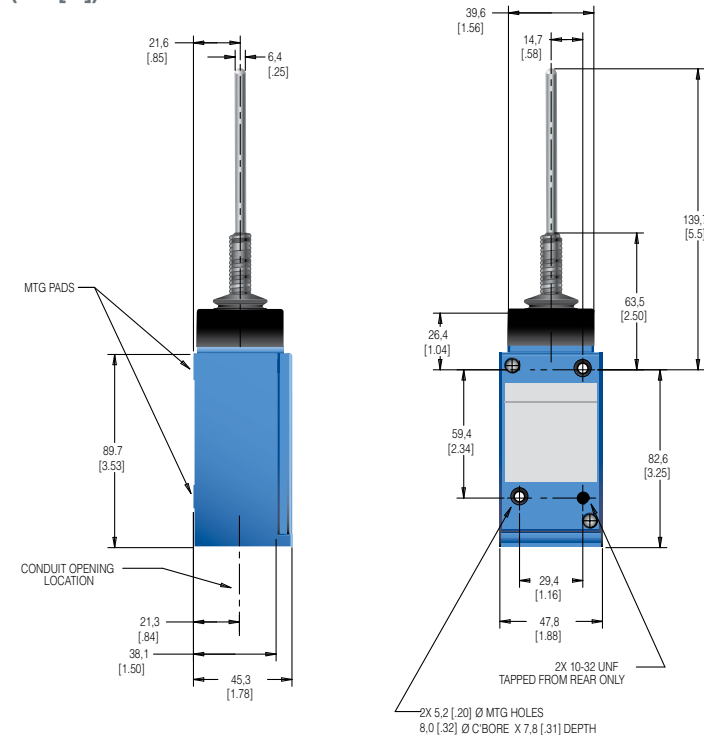
Figure 27. MICRO SWITCH™ HDLS LSJ_ _-7N Series wobble (double pole) dimensions



SPDT Non-plug-in (mm[in])

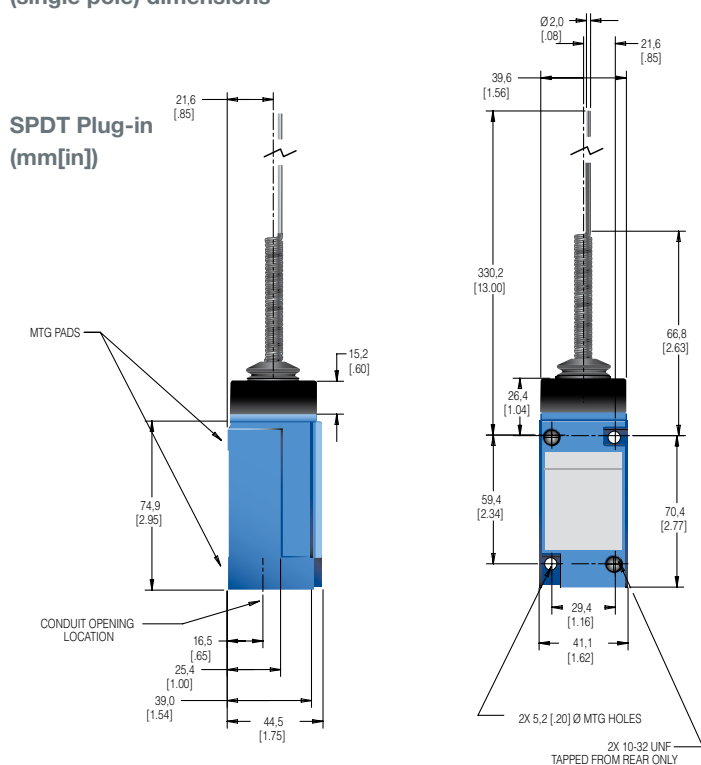


DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 28. MICRO SWITCH™ HDLS LSJ_ _-7M Series wobble (single pole) dimensions



SPDT Non-plug-in (mm[in])

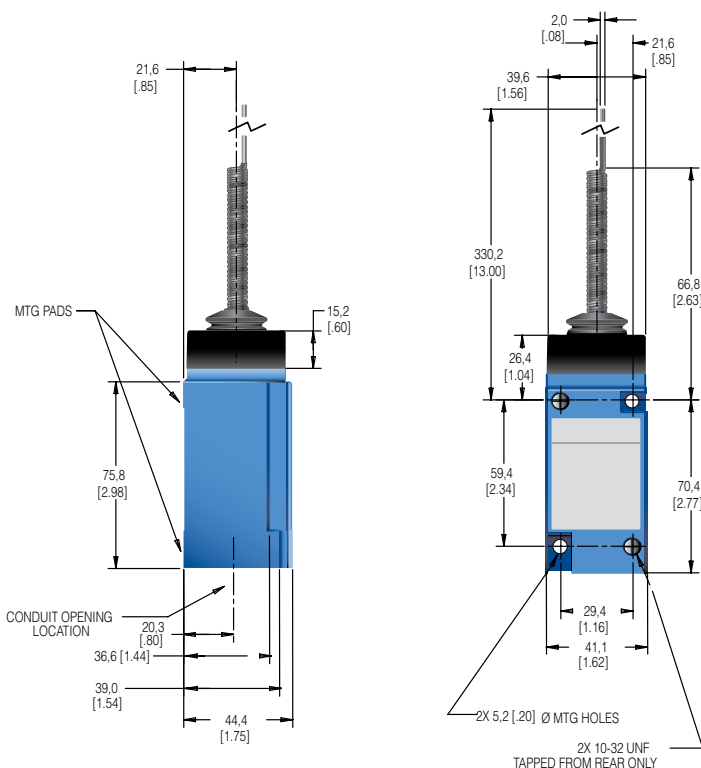
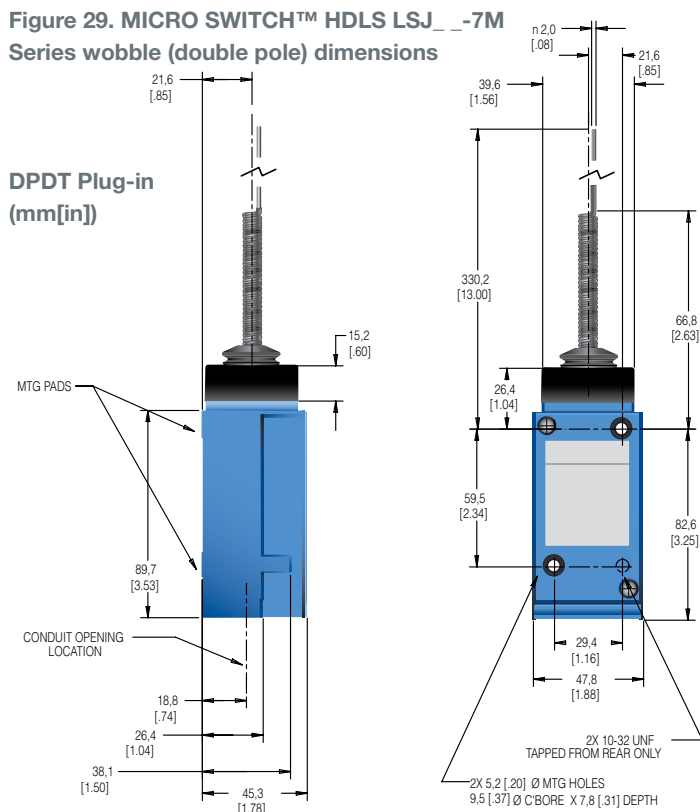
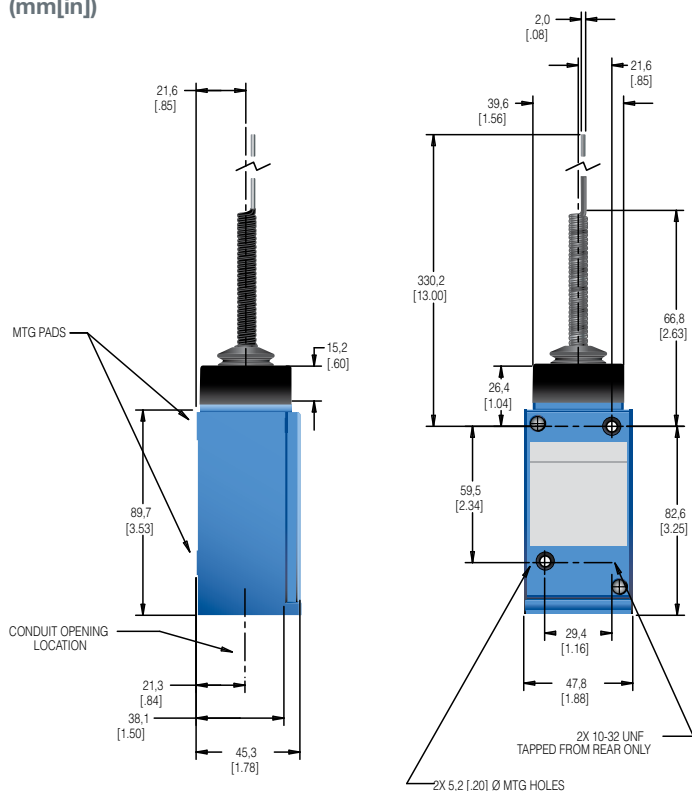


Figure 29. MICRO SWITCH™ HDLS LSJ_ _-7M Series wobble (double pole) dimensions

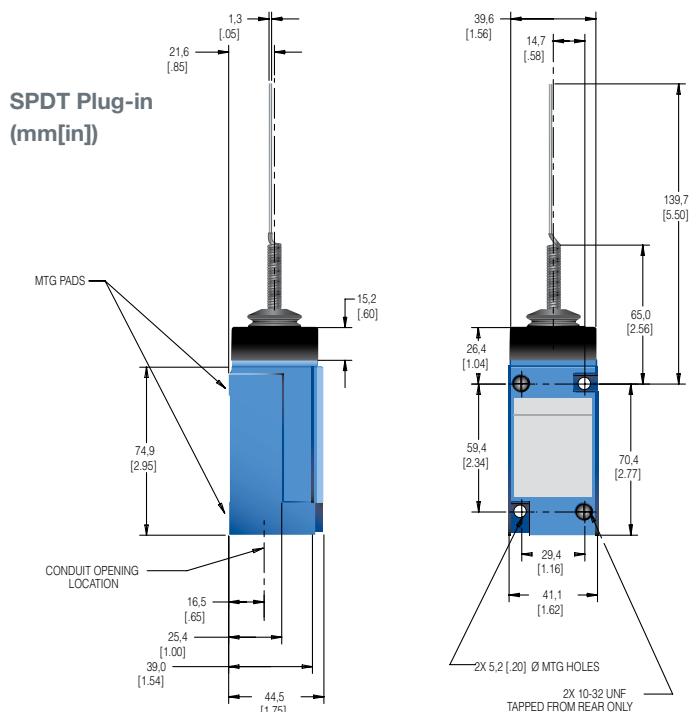


DPDT Non-plug-in (mm[in])



HDLS Series

Figure 30. MICRO SWITCH™ HDLS LSK__-8A Series wobble (single pole) dimensions



SPDT Non-plug-in (mm[in])

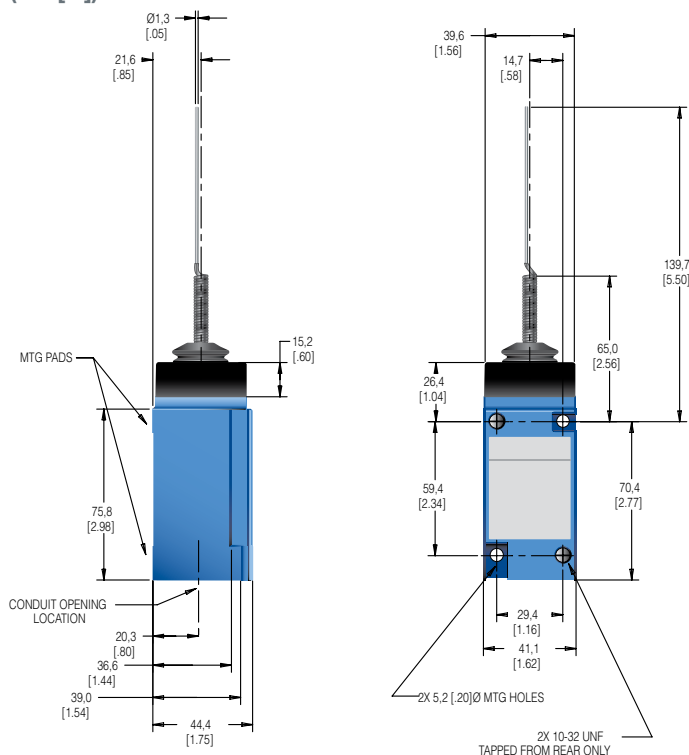
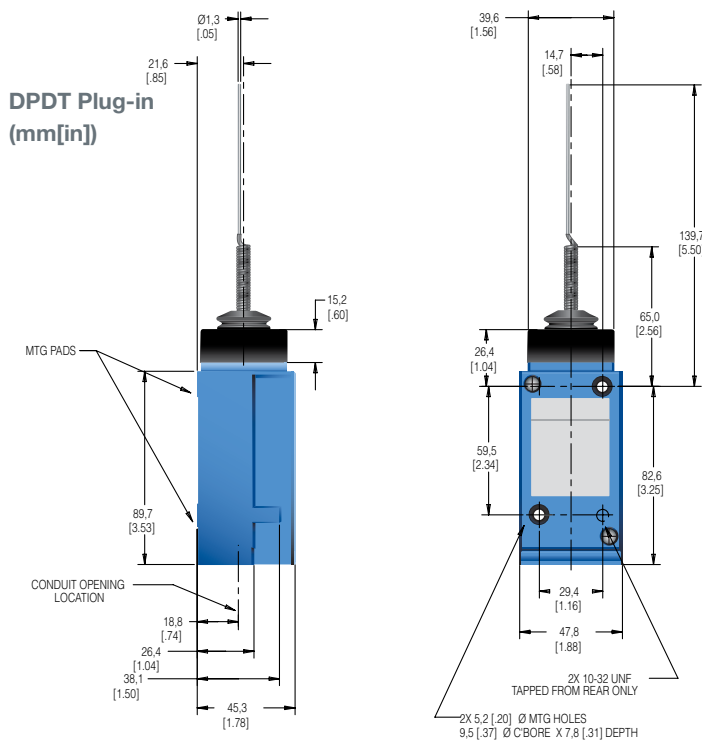
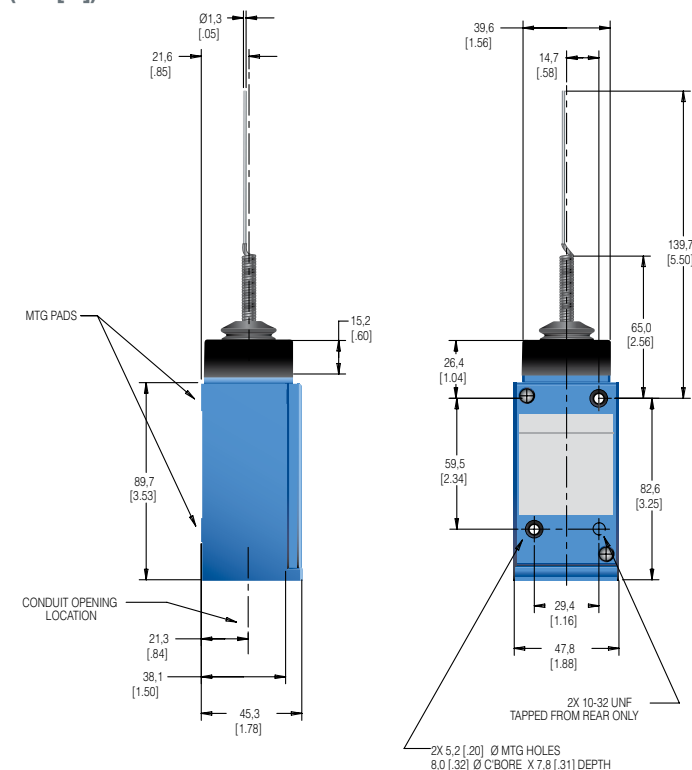


Figure 31. MICRO SWITCH™ HDLS LSK__-8A Series wobble (double pole) dimensions



DPDT Non-plug-in (mm[in])



MICRO SWITCH™ Heavy-Duty Limit Switches

Figure 32. MICRO SWITCH™ HDLS LSK_ _-8C Series wobble (single pole) dimensions

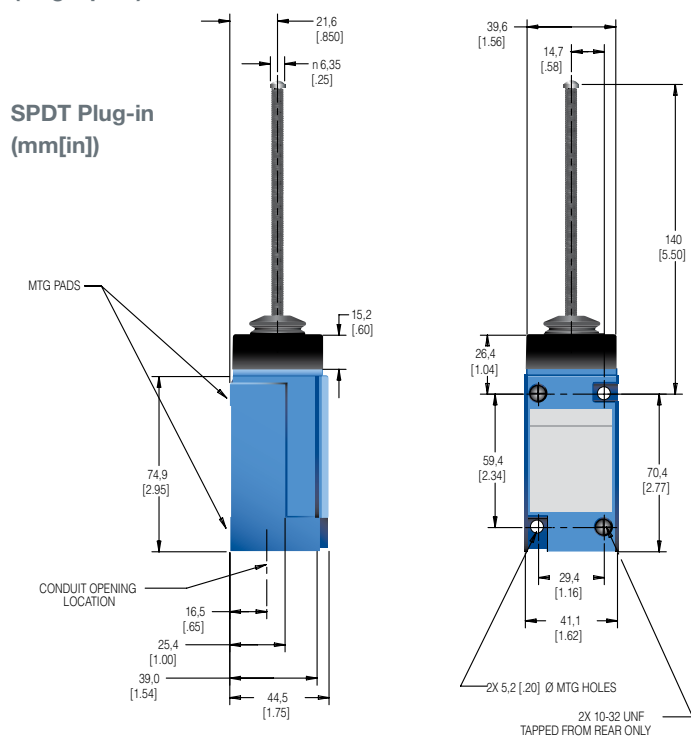
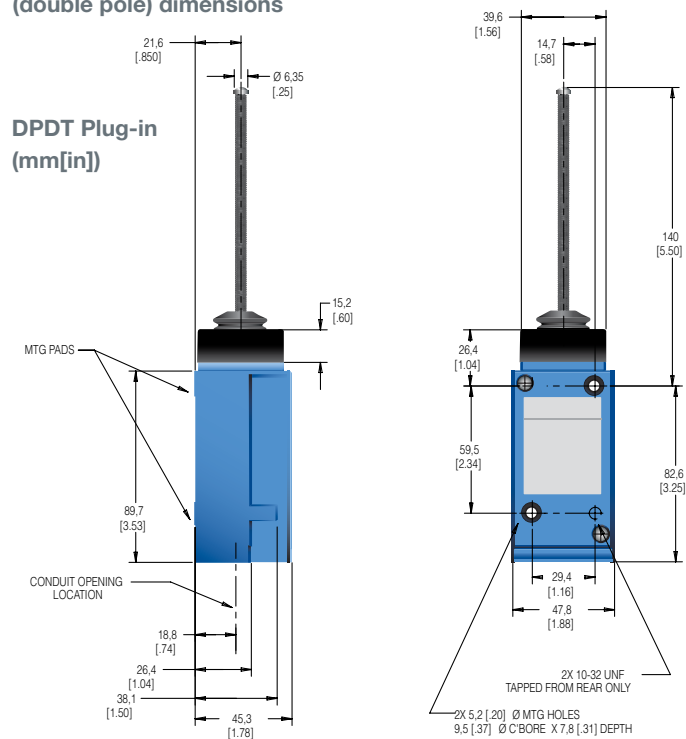
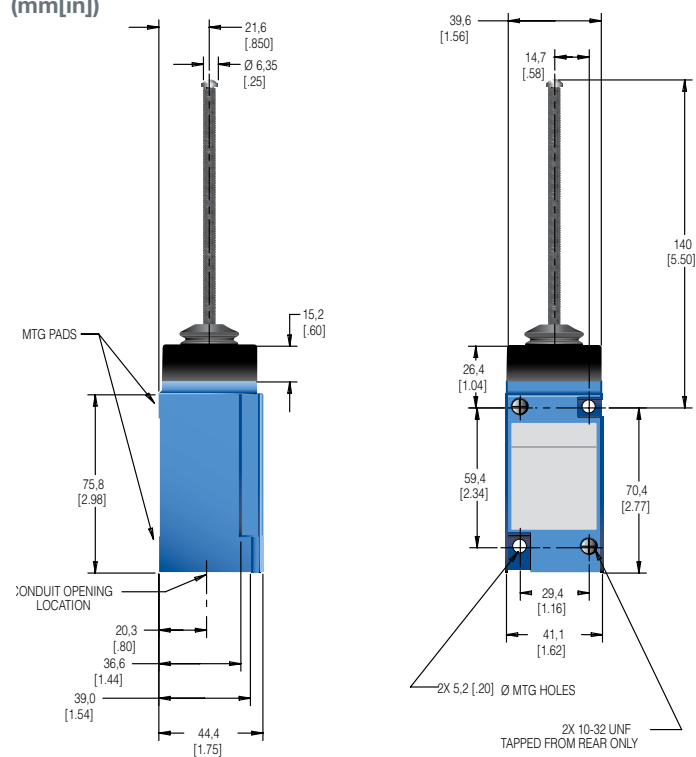


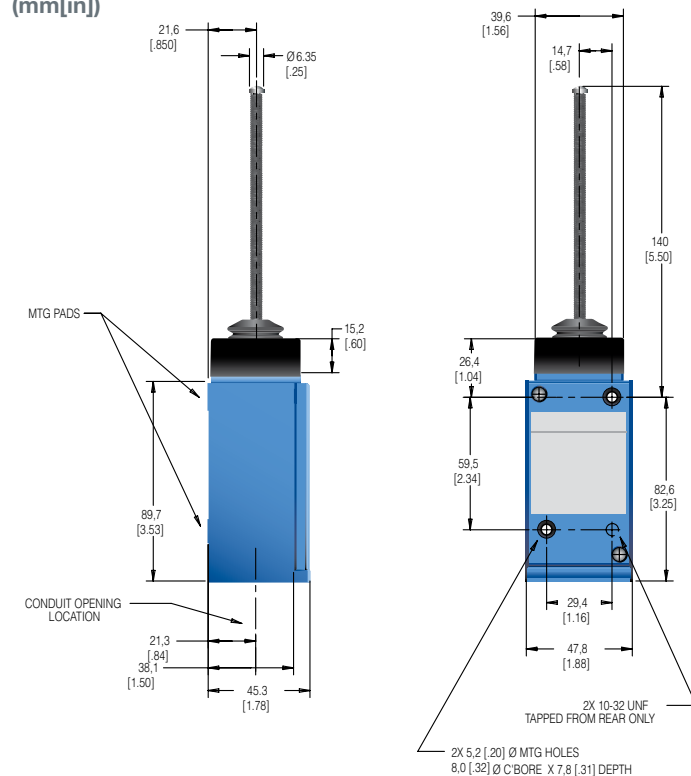
Figure 33. MICRO SWITCH™ HDLS LSK_ _-8C Series wobble (double pole) dimensions



SPDT Non-plug-in (mm[in])



DPDT Non-plug-in (mm[in])



SPECIAL APPLICATIONS

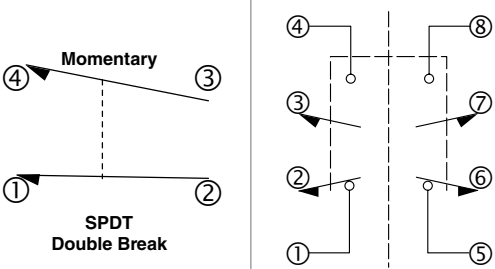
HIGH CAPACITY LIMIT SWITCH

Features

- High dc current ratings
- 20 A rating at 120 Vac (single pole)
- Plug-in or non-plug in
- Positive retention lever arm
- High resistance to seismic shock

This series has a wide gap contact block that handles a higher make/break dc load. In addition, a special lever arm has a serrated shaft hole and a cap screw with locking nut for attaching the lever to the rotary shaft. This assures a firm grip on the operating shaft and positive retention of the lever adjustment.

The need for precise operation, coupled with challenging environmental conditions places rigid demands on any control. Honeywell's products are intended to satisfy these demands with its high capacity HDLS, designed to perform reliably under these conditions.



Voltage	Single Pole		Double Pole	
	Resistive Load	Inductive Load	Resistive Load	Inductive Load
125 Vdc	2.0 A	1.0 A	1.0 A	0.4 A
250 Vdc	0.7 A	0.4 A	0.4 A	0.2 A
120 Vac	20 A	20 A	10 A	10 A
240 Vac	15 A	15 A	7.5 A	7.5 A
480 Vac	10 A	10 A	5 A	5 A
600 Vac	5 A	5 A	2.5 A	2.5 A

Maximum operating rate - 15 operations per minute.

Listings

LSQ051	Double pole, non-plug-in, 0.75 in conduit	
LSQ052	Double pole, plug-in, 0.75 in conduit	
LSQ053	Single pole, non-plug-in, 0.5 in conduit	
LSQ054	Single pole, plug-in, 0.5 in conduit	
LSZ616	Replacement lever for above listings	
Pretravel	17° max.	
Diff. travel	8° max.	
Overtravel	58° min.	
Oper. torque	0,45 Nm [4 in-lb] max.	
Action	CW and CCW (spring return)	

MICRO SWITCH™ Heavy-Duty Limit Switches

SPECIAL APPLICATIONS

GRAVITY RETURN SIDE ROTARY SWITCHES (LSS)

LSS1H gravity-return, side-rotary switches have no return spring mechanism. The weight of the actuating lever must provide the force to restore it to the free position. The 5 in-oz. max. operating torque is useful in conveyor applications since it enables operation by small or lightweight objects. Because the head is unsealed, the **LSS1H** is classified as NEMA 1. However, the switch cavity is sealed to protect the switch contacts.

	LSS1H
Description	Gravity-return side rotary
Circuitry	SPDT, double break
Contacts	Silver
Sealing	NEMA 1
Electrical rating	(B) NEMA B600
Body style	Plug-in
Conduit (NPT)	0.5 in
Differential travel	12° max.
Total travel (no stop)*	360°
Operating torque	0,035 Nm [5 in-oz] max.

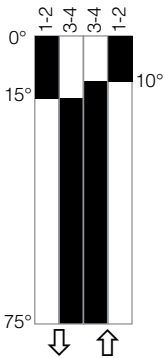
* Switch has approximately 180° dwell of the normally closed and normally open switch contacts.



EXTRA LOW TORQUE SIDE ROTARY SWITCHES (LST)

LST1H extra-low torque, side-rotary switches have a low force return spring and a maximim operation torque of 12 in-oz. It is rated as NEMA 1 due to an unsealed head. The switch cavity is sealed to protect the switch contacts.

	LST1H
Description	Extra-low torque side rotary
Circuitry	SPDT, double break
Contacts	Silver
Sealing	NEMA 1
Electrical rating	(B) NEMA B600
Body style	Plug-in
Conduit (NPT)	0.5 in
Pretravel	15° max.
Differential travel	5° max.
Overtravel	60' min.
Total travel	75° nom.
Operating torque	0,085 Nm [12 in-oz] max.



HDLS Series

MICRO SWITCH™ HDLS SERIES NOMENCLATURE

LS	A	1A	1	-				
Switch Type	Heads	Body/Basic Switch Codes	Modification Codes	Wobble Actuator				
HDLS Series Heavy-Duty Limit Switch	A Side rotary, momentary	L Side rotary, sequential	Plug-in Single Pole	Plug-in Double Pole	Non-plug-in Double Pole	A 4-pin mini-style	PA 5-conductor STOOW-A cable, 8 ft	7A Wobble, plastic
	B Top rotary, momentary	M Side rotary, center neutral	1A Standard switch	2B Standard switch	4L Standard switch	B 5-pin mini-style	XA 9-conductor STOOW-A cable, 8 ft	7M Wobble, wire
	C Top plunger, plain	N Side rotary, maintained	1E Gold contacts	2C Sequential	4M Sequential	C 5-conductor STOW-A cable, 6 ft	PB 5-conductor STOOW-A cable, 30 ft	7N Wobble, cable
	D Top roller plunger	P Side rotary, momentary, low pretravel	1G Gold contacts, manifold mount	2D Center neutral	4N Center neutral	E 4-conductor SJTOW-A cable, 6 ft	1 Clockwise head rotation	8A Cat whisker, 5.5 in steel
	E Side plunger plain, momentary	R Side rotary, momentary, low torque	1H Low force	2R 120 V neon indicator	4S Standard switch golf contacts	J 8-pin mini-style	2 Counterclockwise head rotation	8B Cat whisker, 7.5 in steel
	F Side plunger roller, momentary	S Side rotary, gravity return extr. low torque	5A 120 V neon indicator	2S Standard switch golf contacts	4T Sequential, gold contacts	M 9-conductor STOOW-A cable, 6 ft	3 Head assembled with actuator to right side	8C Coil spring, 5.5 in
	G Side plunger plain, maintained	T Side rotary, momentary, extr. low torque	8A 240 V neon indicator	2T Sequential, gold contacts	4U Center neutral, gold contacts	P 5-conductor STOOW-A cable, 12 ft	4 Head assembled with actuator to left side	8D Cat whisker, plastic
	H Side rotary, momentary, low pretravel & torque	U Side rotary, momentary, 5" max. pretravel	9A 24 V LED indicator	2U Center neutral, gold contacts	7L Standard switch, 1/2 in conduit	R 9-pin mini-style	5 Head assembled with actuator to mounting surface	
	J Wobble stick	V Top plunger, adjustable	Non-plug-in Single Pole	6B Standard switch, 1/2 in conduit	7M Sequential, 1/2 in conduit	S 5-pin micro-style	6 Roller perpendicular to mounting surface	
	K Cat whisker	W Side plunger, momentary, adjustable	3K Standard switch	6C Sequential, 1/2 in conduit	7N Center neutral, 1/2 in conduit	X 9-conductor STOOW-A cable, 12 ft	7 Indicator light wired to normally closed circuit	
			6D Center neutral, 1/2 in conduit	7S Stnd. switch, gold contacts, 1/2 in conduit	BB 3-foot mini-style pigtail, single pole	8 Roller on side plunger in vertical position		
			6R 120 V neon indicator, 1/2 in conduit	7T Sequential, gold contacts, 1/2 in conduit				
			6S Stnd. switch, gold contacts, 1/2 in conduit	7U Center neutral, gold contacts, 1/2 in conduit				
			6T Sequential, gold contacts, 1/2 in conduit					
			6U Center neutral, gold contacts, 1/2 in conduit					

* 3 or 4 after the "LS" indicates special metric conduit threads:
3 = PG 13,5
4 = 20 mm

NOTE: Not all combinations of model code are available. Please contact your local Honeywell provider for assistance.

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MICRO SWITCH™ Heavy-Duty Limit Switches

This datasheet supports the following MICRO SWITCH™ HDLS Series Heavy-Duty Limit Switches.

LS2A4K	LS4A3K-1B	LSA1E-2A	LSA5AB-1B	LSD1A	LSH1A2	LSK4L-8C
LS2A4KC	LS4A3K-2B	LSA1E-2D	LSA5ADD	LSD1A6	LSH1A-2B	LSK5A-8A
LS2A4KPC	LS4A3K-7AA	LSA1F	LSA6B	LSD1E	LSH1A-2D	LSK5A-8B
LS2A4KY-FP	LS4C1A	LSA1J	LSA6B1	LSD1F	LSH1AB	LSK5A-8C
LS2A4L	LS4C3K	LSA1J1B	LSA6B-1A	LSD2B	LSH1E	LSK6B
LS2A4L-RS	LS4D1A	LSA2B	LSA6B-1B	LSD2F	LSH1E-1A	LSK6B-8A
LS2A4LX-FP	LS4D3K	LSA2B15-5D	LSA6B-1D	LSD3K	LSH2B	LSK6B-8B
LS2C4L	LS4F1A	LSA2B-1A	LSA6B-1F	LSD3K6	LSH2B-1B	LSK6B-8C
LS2D3N	LS4F2B	LSA2B-1B	LSA6B-1L	LSD4L	LSH2B-2D	LSK7L-8A
LS2D4K	LS4H1A	LSA2B-1C	LSA6B-2B	LSD5A	LSH3K	LSK7L-8B
LS2D4KC	LS4J1A-7A	LSA2B-1D	LSA6B-2C	LSD5A7	LSH4L	LSK7L-8C
LS2D4L	LS4J1A-7M	LSA2B25-5D	LSA6B-2D	LSD6B	LSH4L13	LSK8A-8A
LS2D4LM	LS4J1A-7N	LSA2B-2A	LSA6B-3D	LSD7L	LSH4L-1B	LSK8A-8B
LS2D4L-RS	LS4J2B-7N	LSA2B-2B	LSA6B4-2C	LSD8A	LSH4L3	LSK8A-8C
LS2E4K	LS4K1A-8A	LSA2B-2C	LSA6R	LSD9A	LSH5A	LSK9A-8C
LS2E4L	LS4K1A-8C	LSA2B-2D	LSA6S	LSE1A	LSH5A-1L	LSL2C
LS2F4K	LS4L6C	LSA2B3-5C	LSA7L	LSE1A3	LSH5A-4N	LSL2C-2D
LS2F4L	LS4M2D	LSA2B4	LSA7L-1A	LSE1A4	LSH6B	LSL2G
LS2F4L5	LS4N1A	LSA2B5	LSA7L-1B	LSE1A5	LSH6B-1B	LSL4M
LS2H3K	LS4N2B	LSA2F	LSA7L-1C	LSE1ADD	LSH7L	LSL4M4
LS2H4K	LS4P1A	LSA2R	LSA7L-1D	LSE1E	LSH9A	LSL6C
LS2H4L	LS4W1A	LSA2S	LSA7L-2D	LSE1E4	LSH9A7	LSL6C-4N
LS2H4L3	LS4YAC1A	LSA3K	LSA7L-2J	LSE2B	LSJ1A	LSL7M
LS2M4N	LS4YDC1E	LSA3K1	LSA7L3-1B	LSE3K	LSJ1A-1N	LSL7M-1P
LS2M4N3	LS4YEC1A	LSA3K1-1A	LSA7L4	LSE4L	LSJ1A-7A	LSM2D
LS2M4NM	LS4YJC1A-7N	LSA3K1-1B	LSA7L-4N	LSE5A	LSJ1A-7M	LSM2D-1A
LS2N3K	LSA1A	LSA3K-1A	LSA7L-4R	LSE6B	LSJ1A-7N	LSM2D-1B
LS2YAB4K	LSA1A1	LSA3K-1B	LSA7L-5C	LSE6B5	LSJ1AB-7N	LSM2D-1D
LS2YAB4L	LSA1A1-1A	LSA3K1C-1C	LSA8A	LSE6C5	LSJ1AC-7M	LSM2D-2D
LS2YAB4L5M	LSA1A1-1B	LSA3K-1D	LSA8A7	LSE6S	LSJ1AC-7N	LSM2D-2J
LS2YCB4K	LSA1A1-2J	LSA3K-1N	LSA9A	LSE7L	LSJ1ADD-7A	LSM2DM
LS2YDB4K	LSA1A13	LSA3K-2A	LSA9A-1A	LSE7L3	LSJ1E-7A	LSM2H
LS2YEB4K	LSA1A14	LSA3K-2B	LSA9A23	LSE9A	LSJ1E-7M	LSM2U
LS2YMB4N	LSA1A15	LSA3K-2C	LSA9A-2L	LSF1A	LSJ1J-7A	LSM4N
LS2Z1A	LSA1A-1A	LSA3K-2D	LSA9ADD	LSF1A3	LSJ1J-7M	LSM4N-1A
LS2Z1AB	LSA1A-1B	LSA3K-2J	LSA9EDD	LSF1A4	LSJ1JDD-7A	LSM4N-1B
LS2Z1D	LSA1A-1C	LSA3K3	LSB1A	LSF1A5	LSJ2B-7A	LSM4N-2B
LS2Z1E	LSA1A-1D	LSA3K4	LSB1A1	LSF1A8	LSJ2B-7M	LSM6D
LS2Z1F	LSA1A-1F	LSA3K4-1A	LSB1A-1B	LSF1E	LSJ2B-7N	LSM6D-1B
LS2Z1H	LSA1A-1L	LSA3K4-1B	LSB1A-4M	LSF1F	LSJ3K	LSM6D-1D
LS2Z1N	LSA1A-1M	LSA3K4-1D	LSB1A-4N	LSF2B	LSJ3K-7A	LSM6D-1F
LS2Z51A	LSA1A1S	LSA3K-4M	LSB1AC	LSF2C	LSJ3K-7M	LSM6D-1P
LS2Z51B	LSA1A2	LSA3K-4N	LSB1E	LSF3K	LSJ3K-7N	LSM6D-2A
LS2Z51D	LSA1A2-2J	LSA3K-4R	LSB1J	LSF3K3	LSJ4L-7A	LSM6D-2B
LS2Z51R	LSA1A-2A	LSA3K-5C	LSB2B	LSF3K4	LSJ4L-7M	LSM6D3
LS2Z52A	LSA1A-2B	LSA3KA	LSB2R	LSF3K5	LSJ5A-7A	LSM6D4
LS2Z52B	LSA1A-2C	LSA3KC	LSB3K	LSF3K8	LSJ5A-7M	LSM6D4-5D
LS2Z52D	LSA1A-2D	LSA3N	LSB3K-1B	LSF3N	LSJ5A-7N	LSM6D-5B
LS2Z54N	LSA1A-2E	LSA3N14-2J	LSB3K-1D	LSF4L	LSJ6B	LSM6U
LS2Z54N-C	LSA1A-2J	LSA4L	LSB3K-2C	LSF5A	LSJ6B-7A	LSM7N
LS2Z616	LSA1A-2K	LSA4L1	LSB4L	LSF6B	LSJ6B-7M	LSM7N-1A
LS30218	LSA1A3	LSA4L-1A	LSB5A	LSF6B3	LSJ6B-7N	LSM7N-1B
LS3A1A	LSA1A3-1B	LSA4L-1B	LSB5A-2D	LSF7L	LSJ7L-7A	LSM7N-1D
LS3A2B	LSA1A3-5C	LSA4L-1D	LSB6B	LSF7L3	LSJ7L-7M	LSM7N3
LS3A3K	LSA1A4	LSA4L23	LSB6B-4N	LSF7L4	LSJ7L-7N	LSM7N-4
LS3A3K-7AA	LSA1A-4	LSA4L-2A	LSB7L	LSF7L5	LSJ8A-7A	LSM7U
LS3A3K-7AA-RS	LSA1A-4M	LSA4L-2B	LSB7L-1B	LSF7L8	LSK1A	LSM7U-2D
LS3D3K	LSA1A-4N	LSA4L3-1D	LSB9A	LSF8A	LSK1A-8A	LSN1A
LS3F1A8	LSA1A-4R	LSA4L4	LSC1A	LSF9A	LSK1A-8B	LSN1A-1B
LS3F1E	LSA1A5	LSA4L4-1D	LSC1E	LSG1A	LSK1A-8C	LSN1A-2C
LS3M2D	LSA1A-9B	LSA4S	LSC1J	LSG1E	LSK1E-8A	LSN1A-3A
LS3YDC1A	LSA1AA	LSA5A	LSC2B	LSG2B	LSK1E-8C	LSN1A-3B
LS3YDC1E	LSA1AB	LSA5A15	LSC2C	LSG3K	LSK1J-8C	LSN1A-3D
LS3YVC1A	LSA1AB-1B	LSA5A-1A	LSC3K	LSG4L	LSK2B-8A	LSN1A-3P
LS3YVC1E	LSA1AC	LSA5A-1B	LSC3KC	LSG5A	LSK2B-8C	LSN1A-3S
LS4A1A	LSA1AC-2C	LSA5A-1C	LSC4L	LSG6B	LSK3K	LSN1E
LS4A1E	LSA1AC-4M	LSA5A-1D	LSC5A	LSG7L	LSK3K-8A	LSN1E-1A
LS4A1J	LSA1AH12	LSA5A25	LSC6B	LSG9A	LSK3K-8B	LSN1F
LS4A2B	LSA1E	LSA5A7B	LSC7L	LSH1A	LSK3K-8C	LSN1F-1B
LS4A3K	LSA1E-1B	LSA5AB-1A	LSC8A	LSH1A-1B	LSK4L-8A	LSN2B

HDLS Series

LSN3K	LSQA6B134	LSU3K	LSYAB7L-2B	LSYCC3KP-FP	LSYHC3K	LSYMB6D
LSN3N	LSQA6B314	LSU3K1	LSYAC1A	LSYCC3KQ-FP	LSYHC3KA	LSYMB6D-2D
LSN4L	LSQD3K-SCO	LSU3K-1A	LSYAC1A1-1D	LSYCC3KY-FP	LSYHC3KP-FP	LSYMB6U
LSN4L-2D	LSQE3K318	LSU3K-2J	LSYAC1A-1B	LSYCC4L	LSYHC4L	LSYMB7N
LSN4L-3B	LSQH1A322	LSU4L	LSYAC1A2C	LSYCC4LX-FP	LSYHC4LX-FP	LSYMB7N-1C
LSN4L-3D	LSQJ1A213	LSU5A	LSYAC1A-2D	LSYCC5A	LSYHC7L	LSYMB7N-1D
LSN5A	LSQL4M292	LSU6B	LSYAC1A-4N	LSYCC5KP-FP	LSYJB1A-7A	LSYMB7N3
LSN6B	LSQL7M122	LSU7L	LSYAC1A-C	LSYCC5KY-FP	LSYJB1A-7M	LSYMB7N3-1A
LSN6B-3B	LSQL7M123	LSU8A	LSYAC1ADD	LSYCC6B	LSYJB1A-7N	LSYMB7U
LSN6B-3D	LSQM4N293	LSU9A	LSYAC1ADD-1B	LSYCC7L	LSYJB1E-7A	LSYMC2D-1D
LSN7L	LSQM6D315	LSV1A	LSYAC1ADD-4N	LSYDB1A	LSYJB1E-7M	LSYMC4N
LSN8A	LSQMC7N147	LSV1E	LSYAC1ADD-C	LSYDB2B	LSYJB1J-7A	LSYMC4NX-1BFP
LSN8A37	LSQMC7N148	LSV1J	LSYAC1AH	LSYDB3K	LSYJB2B-7M	LSYMC4NXB-FP
LSN9A	LSQMC7N311	LSV2B	LSYAC1E	LSYDB4L	LSYJB3K-7A	LSYMC4NX-FP
LSN9EDD	LSQR1A316	LSV3K	LSYAC1EC	LSYDB6B	LSYJB3K-7M	LSYMC6D
LSP1A	LSQUB1A323	LSV4L	LSYAC1J	LSYDB7L	LSYJB3K-7N	LSYMC6D-1B
LSP1A-1B	LSQUB7N191	LSV5A	LSYAC2B	LSYDC1A	LSYJB3KQ-7MFP	LSYMC6DF
LSP1A-1C	LSQUC3K170	LSV6B	LSYAC2R	LSYDC1ADD	LSYJB4L-7M	LSYMC6DF-1B
LSP1A-1D	LSQUC5K272	LSV7L	LSYAC2S	LSYDC1ADD-C	LSYJB4LX-7AFP	LSYMC7N
LSP1A2	LSQYAB1AC365	LSW1A	LSYAC3K	LSYDC1AE	LSYJB5A-7A	LSYMC7NDE-FP
LSP1A25	LSQYAB4L347	LSW1A4	LSYAC3KC-FP	LSYDC3K	LSYJB6B-7M	LSYMC7NR-FP
LSP1A-2A	LSQYAB4LX249	LSW1A5	LSYAC3KDD-FP	LSYDC3KPC-FP	LSYJC1A-7A	LSYNB1A
LSP1A-2D	LSQYDB3K356	LSW1AC	LSYAC3KP	LSYDC3KP-FP	LSYJC1A-7M	LSYNB1AC
LSP1A4	LSQYFB1A344	LSW1E	LSYAC3KPB-FP	LSYDC3KQ-FP	LSYJC1A-7N	LSYNB2B
LSP1A-4M	LSQYFB3K125-QC	LSW2B	LSYAC3KPC-FP	LSYDC3KY-FP	LSYJC1AC-7M	LSYNB3K
LSP1A5-1C	LSQYFB3K345	LSW3K	LSYAC3KP-FP	LSYDC4LX-FP	LSYJC1ADD-7A	LSYNB3K-3S
LSP1AB	LSQYFC3K223	LSW3N	LSYAC3KQ-1BFP	LSYDC5A	LSYJC1ADD-7N	LSYNB3K5-3S
LSP1E	LSQYJB1A346	LSW4L	LSYAC3KQ-FP	LSYDC5AC	LSYJC3K-7A	LSYNB3KP-FP
LSP1E-1A	LSQYMC7N361	LSW5A	LSYAC3KQ-FP-C	LSYDC5AE	LSYJC3K-7N	LSYNB3KQ-3BFP
LSP1F	LSQYPB3KP364	LSW6B	LSYAC3KY-FP	LSYDC5KP-FP	LSYJC3KP-7AFP	LSYNB4L
LSP2B	LSQYUB1A334	LSW7L	LSYAC3N	LSYDC5KQ-FP	LSYJC3KP-7MFP	LSYNB4L-3P
LSP2B-1B	LSQYUB3K336	LSYAB1A	LSYAC4L	LSYDC5KY-FP	LSYJC3KQ-7AFP	LSYNB4LX-FP
LSP3K	LSQYUB3K339	LSYAB1A-1B	LSYAC4L4	LSYDC6B	LSYJC3KQ-7MFP	LSYNB5A
LSP3K-1B	LSQYUB3KC319	LSYAB1A-2A	LSYAC4LAA-FP	LSYDC7L	LSYJC3KQ-7NFP	LSYNB7L
LSP3K-1D	LSQZ52J	LSYAB1A3	LSYAC4LX-FP	LSYDC9KP-FP	LSYJC5KQ-7MFP	LSYNC1A
LSP3K3	LSQZ55C259	LSYAB1A-4N	LSYAC5A	LSYEB4L5	LSYJC6B-7M	LSYNC1ADD
LSP4L	LSR1A	LSYAB1AB	LSYAC5KPC-FP	LSYEC1A	LSYJC7LR-7MFP	LSYNC1E
LSP4L3	LSR1A-1A	LSYAB1AC	LSYAC5KP-FP	LSYEC1ADD	LSYJC7LR-7NFP	LSYNC3KPC-FP
LSP4L-4N	LSR1A-1B	LSYAB1E	LSYAC5KQ-FP	LSYEC1ADD-C	LSYKB1A-8A	LSYNC3KP-FP
LSP4L5	LSR1A-2K	LSYAB1E-2B	LSYAC5KY-FP	LSYEC1AE	LSYKB1A-8C	LSYNC3KQ-FP
LSP5A	LSR1A-4N	LSYAB1E4-2B	LSYAC6B	LSYEC3K	LSYKB3K-8C	LSYNC4LX-FP
LSP5A7	LSR1A-5C	LSYAB1EP-1A	LSYAC6B-1A	LSYEC3KP-FP	LSYKB4L-8C	LSYNC5KQ-FP
LSP6B	LSR1ADD	LSYAB1F	LSYAC6B-1B	LSYEC3KQ-FP	LSYKB4LM-8C	LSYPB1A
LSP7L	LSR1E	LSYAB1J	LSYAC6B-2L	LSYEC3KY-FP	LSYKB6B-8C	LSYPB1AC
LSP7L-2D	LSR2B	LSYAB2B	LSYAC6B-4N	LSYEC4LX-FP	LSYKB7L-8C	LSYPB1E
LSP7L3	LSR2B-4N	LSYAB2B3	LSYAC7L	LSYEC5KP-FP	LSYKC1A-8A	LSYPB2B
LSP7S3	LSR3K	LSYAB2F	LSYAC7LR-FP	LSYEC5KY-FP	LSYKC1A-8C	LSYPB2B-4N
LSP8A	LSR3K1	LSYAB2S	LSYAC9A	LSYEC6B	LSYKC1AC-8A	LSYPB3K
LS-PA5A4	LSR3K-4M	LSYAB3K	LSYAC9AB	LSYFB1A	LSYKC1AC-8C	LSYPB3K3
LSPA5D2	LSR4L	LSYAB3K1	LSYBB1A	LSYFB3K	LSYKC1ADD-8C	LSYPB3K4
LSPA5D4	LSR5A	LSYAB3K-1B	LSYBB2B	LSYFB3K3	LSYKC1ADD-8C-C	LSYPB3KP-FP
LSQ037	LSR6B	LSYAB3K2-5C	LSYBB3K	LSYFB3K4	LSYKC1E-8C	LSYPB4L
LSQ038	LSR6B-2D	LSYAB3K-2J	LSYBB3KP-FP	LSYFB4L	LSYKC3K-8C	LSYPB4L-1B
LSQ051	LSR6B-2L	LSYAB3K-5D	LSYBB4L	LSYFB4LM	LSYKC3KP-8AFP	LSYPB4L3
LSQ052	LSR6B-4M	LSYAB3KE-FP	LSYBB5KP-FP	LSYFB4LX-FP	LSYKC3KQ-8CFP	LSYPB4L-4N
LSQ053	LSR7L	LSYAB3KPC-FP	LSYBC1A	LSYFB7L	LSYKC4L-8C	LSYPB6B
LSQ054	LSR7L-2D	LSYAB3KP-FP	LSYBC3K	LSYFC1A	LSYKC5KQ-8BFP	LSYPB7L
LSQ081	LSR9A	LSYAB3KQ-FP	LSYBC3KP-FP	LSYFC1ADD	LSYKC7LR-8AFP	LSYPB7L3
LSQ117-QC	LSS1H	LSYAB3N	LSYBC3KQ-FP	LSYFC1ADD-C	LSYLB4M	LSYPC1A
LSQ2A4L352	LSS1H-4N	LSYAB3N-4N	LSYBC5A	LSYFC1AE	LSYLB6C	LSYPC1J
LSQ2H4KP227	LSS1HDD	LSYAB4L	LSYBC5KP-FP	LSYFC3K	LSYLB6T	LSYPC2B
LSQ2L4M321	LSS1HDD-C	LSYAB4L-1B	LSYBC9A-1D	LSYFC3K48P-FP	LSYLB7M	LSYPC2B-1B
LSQ300	LST1H	LSYAB4L24	LSYCB1A	LSYFC3KP-FP	LSYLB7MR-FP	LSYPC3K
LSQ310-20	LST1H-1C	LSYAB4L24-1	LSYCB1E	LSYFC3KQ-FP	LSYLB7T	LSYPC3KP-FP
LSQ3A3K281	LSU1A	LSYAB4L-2A	LSYCB1J	LSYFC3KY-FP	LSYLC2C	LSYPC3KQ-FP
LSQ3A3K281-VL363	LSU1A-1	LSYAB4L360	LSYCB3KQ-FP	LSYFC5KQ-FP	LSYLC4M	LSYPC3KY-FP
LSQ3N2D3357	LSU1A-1B	LSYAB4L4	LSYCB4L	LSYFC6B	LSYLC4MX-FP	LSYPC4LX-FP
LSQA1A278	LSU1A-1D	LSYAB4LX-FP	LSYCB4SX-FP	LSYFC7L	LSYLC6C	LSYRB1A
LSQA1A313	LSU1A-2B	LSYAB4S	LSYCB6B	LSYFC7L3	LSYMB2D	LSYRB3KP-FP
LSQA1A341	LSU1A-2D	LSYAB5A	LSYCB9A7	LSYFC7L4	LSYMB2D3	LSYRB6B
LSQA1A366	LSU1A4	LSYAB6B	LSYCC1A	LSYGB1A	LSYMB4N	LSYRC1A
LSQA3K129	LSU1A-4R	LSYAB6B-1B	LSYCC1ADD	LSYGB1E	LSYMB4N-1A	LSYRC1A3
LSQA3K163	LSU1E	LSYAB6B-2D	LSYCC1ADD-C	LSYGC3KP-FP	LSYMB4N-2K	LSYRC1ADD
LSQA3K-2C-SCO	LSU1J	LSYAB7L	LSYCC1AE	LSYHB1A	LSYMB4N3X-FP	LSYRC1ADD-C
LSQA3K363	LSU2B	LSYAB7L-1A	LSYCC3K	LSYHC1A	LSYMB4NX-FP	LSYRC1E3

MICRO SWITCH™ Heavy-Duty Limit Switches

LSYRC2B
LSYRC3KP-FP
LSYRC4L
LSYRC4LX-FP
LSYRC5KP-FP
LSYRC5KQ-FP
LSYRC9A
LSYUB1A
LSYUB1A13
LSYUB1A13-2A
LSYUB1A13-2B
LSYUB1A23
LSYUB1A23-2D
LSYUB1A3
LSYUB2B
LSYUB3K
LSYUB6B
LSYUB6B13
LSYUB6B3
LSYUB9AC
LSYUC1A
LSYUC1A-1B
LSYUC1ADD
LSYUC2B
LSYUC3KP-FP
LSYUC3KQ-FP
LSYUC3KY-FP
LSYUC4LX-FP
LSYUC5KQ-FP
LSYUC6B
LSYUC9ADD
LSYVB1A
LSYVB2B
LSYVB3K
LSYVB4L
LSYVC1A
LSYVC3KP-FP
LSYVC3KQ-FP
LSYVC3KY-FP
LSYVC7L
LSYWB1A
LSYWB3K
LSYWB3KQ-FP
LSYWC1A
LSYWC1ADD
LSYWC1F
LSYWC3KP-FP
LSYWC3KY-FP
LSYWC5KQ-FP
LSYWC6B
LSYWC7L

HDLS Series

ALSO AVAILABLE



Fully potted MICRO SWITCH™ HDLS heavy-duty limit switches provide an extra degree of protection in harsh environments by sealing the basic switch cavity with epoxy. These switches are the same as the non- plug-in HDLS except that the entire switch cavity is filled with epoxy in addition to the conduit entrance. The fully potted HDLS switches are pre-leaded, with either cable or connectors.

- Excellent sealing capability for harsh-duty food and beverage wash downs and severe machine tool environments
- Extra diaphragm sealing
- 12 inch STOW-A cable or connector version (other lengths available)
- Cable versions: NEMA 1, 6, 6P, 12
- Connector versions: NEMA 1, 6, 6P, 12, 13
- All fluorocarbon seals (low temperature available)
- UL, CSA, CE, CCC



MICRO SWITCH™ HDLS switches are also available in all stainless-steel versions. Designed for use in highly corrosive environments, such as petrochemical plants, food processing plants, shipboard, and dockside locations. The type 316 cast stainless steel body is designed to minimize crevices where food particles could become trapped in water. The actuator, operating head, and screws are also stainless steel. All seals are fluorocarbon to provide excellent chemical resistance and to withstand operating temperatures up to 121 °C [250 °F] and pressurized steam cleaning. Pre-leaded and epoxy-filled versions also available.

- Corrosion-resistant stainless steel non-plug in body, head, and rotary shaft
- Stainless steel levers
- Fluorocarbon seals
- NEMA 1, 3, 3R, 4, 4X, 6, 6P, and 13
- UL, CSA, CE, CCC

To learn more about Honeywell's HDLS products, call **+1-815-235-6847 or 1-800-537-6945**.

MICRO SWITCH™ Heavy-Duty Limit Switches

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell website, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office.

To learn more about Honeywell's sensing and control products, call **+1-815-235-6847** or **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

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The Honeywell logo, consisting of the word "Honeywell" in a bold, red, sans-serif font.

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Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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