EX SERIES

MICRO SWITCH Hazardous Area Switches

DESCRIPTION

MICRO SWITCH EX Series switches feature the smallest UL-listed housings available for use in hazardous locations. The EX Series switch cavity is designed to cool expanding gases below the ignition temperature of the surrounding explosive atmosphere. The EX Series is capable of switching up to 20 amps while providing ample wiring space for ease of installation. Single and double conduit openings are available. Dual conduit openings may allow for through wiring of multiple switches. The EX Series can be mounted from any of the switch's four sides.

VALUE TO CUSTOMERS

- Honeywell has over 80 years of switch manufacturing experience covering most environment types
- Proven technology plus superior quality and service are offered world-wide. The EX Series holds multiple agency approvals, including CE, IEC Ex, UL, CSA, INMETRO, and ATEX directives
- Multiple actuator options make the EX Series a good choice for indoor explosion-proof applications
- Smallest UL-listed, power-load carrying switch available for use in hazardous locations

FEATURES

- Compact and rugged housing
- Ample wiring space that eases installation time
- Four-sided mounting with optional mounting bracket
- Dual conduit openings on select models
- Broad range of actuator styles available in pin plunger and rotary configurations.
- Switching capacity from 1 A for low energy loads, up to 20 A for most industrial electrical loads
- Rotary actuators are field adjustable for quick set up and application adaptability
- Roller lever actuators are adjustable through 360° of rotation
- 1EX and 2EX listings have dual conduit openings enabling "wire through" or allowing the user to split the wiring of a double pole switch with one pole exiting each side
- Manufactured for harsh and explosive environments
- International approvals for use around the world

APPLICATIONS

- Industrial paint booths
- Petroleum and chemical plants
- Processing facilities

PORTFOLIO

The EX Series is part of the MICRO SWITCH family of hazardous area switches that include the BX, BX2, LSX, VPX, CX, GSX, GXS and 14CE100 Series switches. To view the entire product portfolio, click here.

Honeywell

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

TABLE 1. SPECIFICATIONS

Characteristic	Parameter		
Product type	MICRO SWITCH™ hazardous location limit switches		
Actuators	overtravel top plunger adjustable roller lever adjustable rod lever with one-inch nylon roller	side roller lever rod lever	one-way roller lever manually activated paddle
Circuitry	SPDT, DPDT		
Electrical	1 A, 3 A, 5 A, 10 A, 15 A, and 20 A		
Housing material	Aluminum die-cast		
Termination types	1/2-14 NPT conduit, preleaded		

Sealing	NEMA 1, 7, and 9, UL listed, and CSA certified:
	  Class I, Div.1 & 2, **Groups B***, C, and D
	[*Group B – only as noted in order guide]
	  Class II, Div.1 & 2, Groups E, F, and G		

Operating temperature[1]	-40 °C to 71 °C [-40 °F to 160 °F] *High temp models available up to 204 °C [400 °F] (refer to order guide on pages 6 and 7)		
Agency approvals and standards	IEC Ex, ATEX (CE), UL, CSA, INMETRO		
UL listed	#E14274		
CSA certified	#LR57324		
INMETRO certified	TÜV 14.0554 X		
ATEX directive[2]	KEMA 04ATEX2312X		
IEC Ex certified	KEM 08.0012X		
UNSPSC code	302119		
UNSPSC commodity	302119 Switches and controls and relays		

[1] Refer to order guide
[2] Most models, refer to individual specifications for selected catalog listings

TABLE 2. AGENCY APPROVALS AND STANDARDS

	UL, CE/ATEX, CSA, IEC Ex, INMETRO	Standards & Designations
UL listed	#E14274	UL 1203
CSA certified	#LR57324	C22.2 No. 25 and No. 30
ATEX directive *	KEMA 04ATEX2312X	II 2 G Ex db IIB + H2 T6 Gb (EX) II 2 G Ex db IIB + H2 T2 Gb (EXHT) EN60079-0 and EN60079-1
IEC Ex certified *	KEM 08.0027X	II 2 G Ex db IIB + H2 T6 Gb (EX) II 2 G Ex db IIB + H2 T2 Gb (EXHT) IEC60079-0 and IEC60079-1
INMETRO certified *	TÜV 14.0554 X	IEC60079-0 and IEC60079-1

*Most models, refer to individual specifications for selected catalog listings

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

TABLE 3. CIRCUITRY AND ELECTRICAL RATINGS

Rating code	Circuitry	Electrical rating
A	SPDT	UL/CSA Rating: 15 A, 125, 250, or 480 Vac 1/8 HP, 125 Vac; 1/4 HP, 250 Vac 0.5 A, 125 Vdc; 0.25 A 250 Vdc
B	SPDT	UL/CSA Rating: 20 A, 125, 250, or 480 Vac 10 A, 125 Vac "L" 1 HP, 125 Vac; 2 HP, 250 Vac 0.5 A, 125 Vdc; 0.25 A, 250 Vdc
C	DPDT	UL/CSA Rating: 10 A, 125 or 250 Vac 0.3 A, 125 Vac; 0.15 A 250 Vdc
D	SPDT	UL/CSA Rating: 10 A, 125, 250, or 480 Vac 0.5 A, 125 Vdc; 0.25 A 250 Vdc
E	SPDT	UL Rating: 1 A, 125 Vac
F	SPDT	UL/CSA Rating: 3 A, 125 or 250 Vac 1/10 HP, 125 Vac; 1/6 HP, 250 Vac
G	SPDT	UL/CSA Rating: 5 A, 125, 250, or 480 Vac; 0.50 A, 125 Vdc; 0.25 A, 250 Vac

TABLE 4. HAZARDOUS LOCATION CLASSIFICATIONS

Rating code	Classification
1	Explosion Proof-UL listed for Hazardous Locations NEMA 7, Class I, Groups B, C, and D NEMA 9, Class II, Groups E, F, and G
2	Explosion Proof-UL listed for Hazardous Locations NEMA 7, Class I, Groups C and D NEMA 9, Class II, Groups E, F, and G
3	European Hazardous Locations Designation: Ex db IIB + H2 T6 Category II 2 G
4	European Hazardous Locations Designation: Ex db IIB + H2 T2 Category II 2 G
5	Brazilian Hazardous Location Designation: Ex db IIB + H2 T6 Gb
6	Brazilian Hazardous Location Designation: Ex db IIB + H2 T2 Gb

Series	Code	ATEX Temperature Rating
EX	T6	-40 °C to 70 °C [-40 °F to 158 °F]
EXHT	T2	-40 °C to 204 °C [-40 °F to 400 °F]

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

MICRO SWITCH EX SERIES ORDER GUIDE

	Catalog Listing	Actuation	Circuitry	Electrical Rating	UL/CE Haz. Location Code	Operating Force	Pretravel max. mm [in]	Overtravel max.	Diff. Travel max. mm [in]	Notes
	EX-AR	CW*	SPDT	15 A (A)	2, 3, 5	2,22 N to 5,56 N [8 oz to 20 oz]	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	
	EX-AR141	CW*	SPDT	15 A (A)	2, 3, 5	2,22 N to 5,56 N [8 oz to 20 oz]	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	No mounting bracket
	EXA-AR	CW*	SPDT	20 A (B)	2, 3, 5	3,34 N to 8,90 N [12 oz to 32 oz]	5,56 [0.219] (8°)	25°	0,304 [0.012]	
	EXA-AR20	CW*	SPDT	15 A (B)	2, 3, 5	–	5,56 [0.219] (8°)	25°	–	No lever furnished (order separately)
	EX-AR16	CW or CCW*	SPDT	15 A (A)	2, 3, 5	0,56 N [2 oz] max.	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	Low O.F. (no return spring) without mounting bracket
	EX-AR1613	CW*	SPDT	15 A (A)	2, 3, 5	0,56 N [2 oz] max.	16° ± 2°	40° min.	–	0.125 in x 5.28 in aluminum lever (no mounting bracket)
	EX-AR20	CW*	SPDT	15 A (A)	2, 3, 5	3,81 N to 9,53 N [12.5 oz to 31.25 oz]	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	No lever furnished (order separately)
	EX-AR230	CCW*	SPDT	15 A (A)	2, 3, 5	0,45 Nm [4.0 in-lb]	1,65 [0.065]	25°	0,18 [0.007] (0.25°)	No lever furnished (order separately)
	EX-AR471-3	CW*	SPDT	15 A (A)	2, 3, 5	3,34 N to 7,32 N [12 oz to 24 oz]	5,56 [0.219] (8°)	90°	0,533 [0.021] (0.75°)	36 inch leadwire
	EX-AR50	Manual operation	SPDT	15 A (A)	2, 3, 5	11,12 N [40 oz]	–	3,18 [0.125] min.	0,077 [0.003] approx.	Large 3 in x 3.5 in paddle

*Note: CW (Clockwise) and CCW (Counter-Clockwise) when looking at nameplate. EX Series switches are not sealed against liquids and are not intended to be used in liquid splash environments or outdoor use without protection. NEMA 1, 7, 9 only.

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

MICRO SWITCH EX SERIES ORDER GUIDE

	Catalog Listing	Actuation	Circuitry	Electrical Rating	UL/CE Haz. Location Code	Operating Force	Pretravel max. mm [in]	Overtravel max.	Diff. Travel max. mm [in]	Notes
	EX-AR128	CW*	SPDT	15 A (A)	2, 3, 5	2,22 N to 5,56 N [8 oz to 20 oz]	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	One-way roller lever
	EXD-AR-3	CW*	DPDT	10 A (C)	1, 3, 5	2,44 N to 7,32 N [8 oz to 24 oz]	6,35 [0.25]	25°	2,77 [0.109]	36 inch wire leads
	EXA-N	Plunger	SPDT	20 A (B)	2, 3, 5	15,57 N [56 oz]	2,77 [0.109]	3,18 [0.125] min.	0,229 [0.009]	With seal boot
	EXA-Q	Plunger	SPDT	20 A (B)	2, 3, 5	8,90 N [32 oz]	1,27 [0.05]	3,18 [0.125] min.	0,229 [0.009]	
	EXHT-Q	Plunger	SPDT	3 A (F)	1, 4, 6	8,90 N [32 oz]	1,27 [0.05]	3,18 [0.125] min.	0,229 [0.009]	400° high temperature
	EX-Q400	Plunger	SPDT	5 A (G)	1, 5	13,34 N [48 oz]	1,98 [0.078]	4,78 [0.188]	0,102 [0.004]	400° high temperature intermittent exposure
	EXHT-AR	CW*	SPDT	3 A (F)	1, 4, 6	3,34 N to 8,90 N [12 oz to 32 oz]	5,56 [0.219] (8°)	25°	0,406 [0.016]	400° high temperature
	1EX1	CW*	SPDT	15 A (A)	2, 3, 5	2,22 N to 5,56 N [8 oz to 20 oz]	5,56 [0.219] (8°)	90°	0,18 [0.007] (0.25°)	Dual conduit openings
	2EX1	CW*	DPDT	20 A (B)	2, 3, 5	3,34 N to 8,90 N [12 oz to 32 oz]	5,56 [0.219] (8°)	25°	0,305 [0.012] (0.5°)	Dual conduit openings

*Note: CW (Clockwise) and CCW (Counter-Clockwise) when looking at nameplate. EX Series switches are not sealed against liquids and are not intended to be used in liquid splash environments or outdoor use without protection. NEMA 1, 7, 9 only.

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

DIMENSIONAL DRAWINGS mm [in]
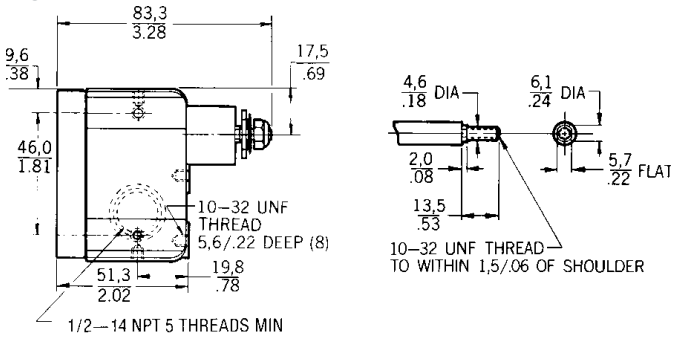
Figure 1. MICRO SWITCH EX Series, no lever

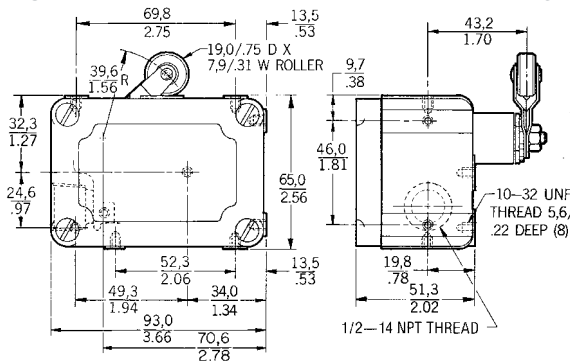**Figure 2. MICRO SWITCH EX Series, side rotary**

Figure 3. MICRO SWITCH EX Series, side rotary with two conduit openings
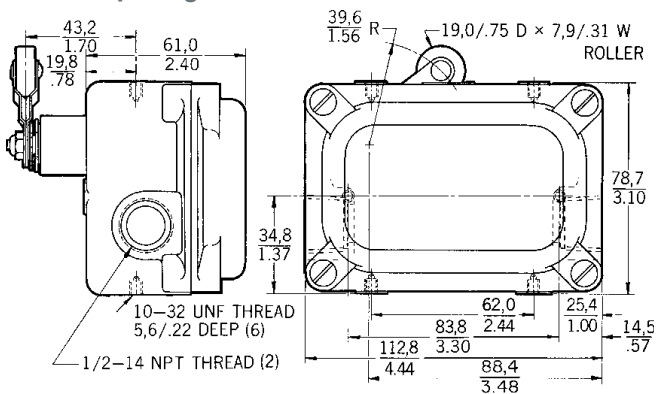

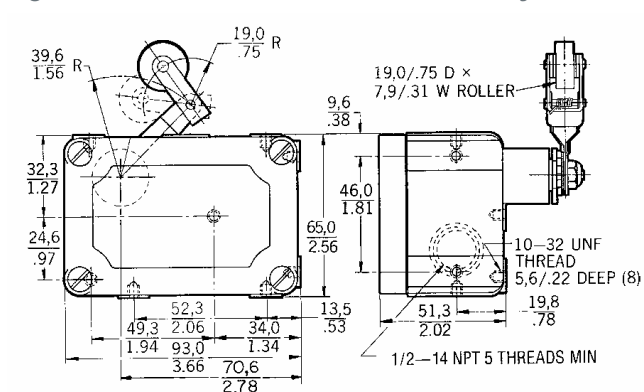**Figure 4. MICRO SWITCH EX Series, one-way lever**

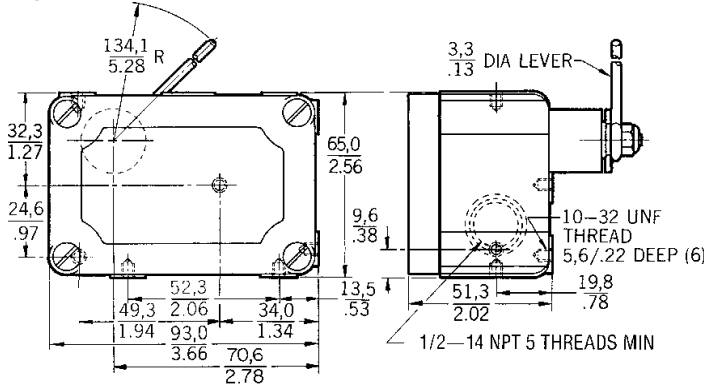
Figure 5. MICRO SWITCH EX Series, rod lever

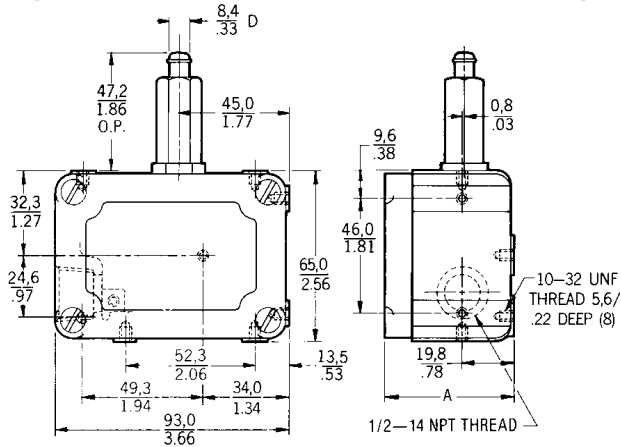**Figure 6. MICRO SWITCH EX Series, top pin plunger**

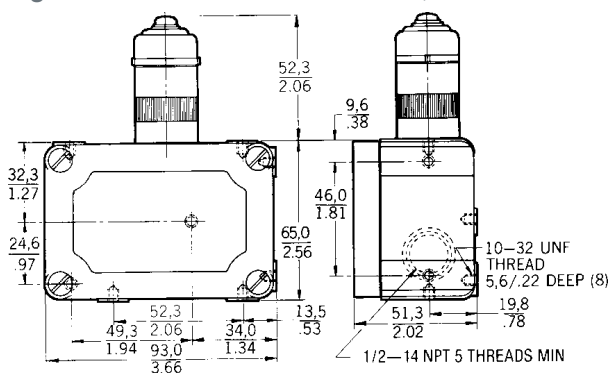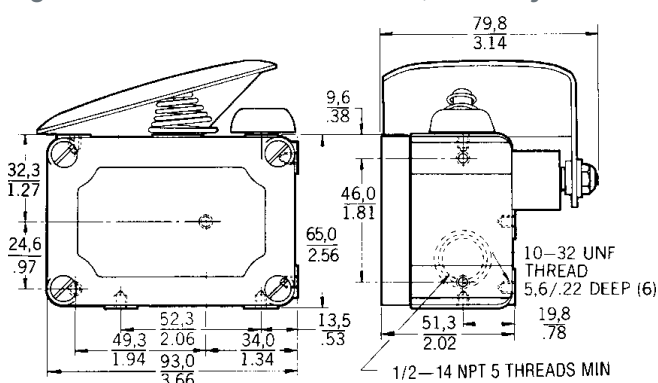**Figure 7. MICRO SWITCH EX Series, boot sealed**

Figure 8. MICRO SWITCH EX Series, manually actuated

MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

TABLE 5. REPLACEMENT CATALOG LISTINGS

EX Series Part Number	Internal Switching Element/ Basic Switch	Actuator	Internal Springs
EXA-AR	BA-2R-P4	6PA5-EX	33PA6-EX
EXA-Q	BZ-2R-P4	8PA15-EX	–
EX-AR	BZ-2R-P4	6PA5-EX	33PA7-EX
EX-AR128	BZ-2R-P4	6PA130-EX	33PA7-EX
EX-AR16	BZ-2RW88-P5	6PA5-EX	–
EX-AR1613	BZ-2RW88-P5	6PA136-EX	–
EX-AR20*	BZ-2R-P4	*	33PA7-EX
EX-AR30	BZ-2R-P4	6PA5-EX	33PA5-EX
EX-AR50	BZ-2R-P4	6PA134-OP	33PA7-EX
EX-AR800	BZ-2R-P4	6PA5-EX	33PA7-EX
EXD-AR-3	DT-2R4-A7	6PA5-EX	33PA6-EX
EXD-AR30-3	DT-2R711-A7	6PA5-EX	33PA5-EX
EXD-Q-3	DT-2R-A7	8PA77-EX	–
EXH-AR3	4HS202	6PA5-EX	33PA6-EX
EXH-AR33	4HS203	6PA5-EX	33PA6-EX
EX-N15	BZ-2R15-P4	8PA12-EX	–
EX-Q	BZ-2R-P4	8PA15-EX	–
EX-Q800	BZ-2R-P4	8PA15-EX	–
Double Conduit			
1EX1	BZ-2R-P4	6PA5-EX	33PA6-EX
2EX1	BZ-2R-P4	6PA5-EX	33PA6-EX
4EX1-3	DT-2R4-A7	6PA5-EX	33PA6-EX

* Order levers separately

TABLE 6. ACTUATOR ORDER CODES

	Type	Part Number
	One-way roller lever (for CW actuation)	6PA130-EX (bronze roller)
	One-way roller lever (for CCW actuation)	6PA142-EX (bronze roller)
	Adjustable length roller lever 43 mm to 76 mm [1.7 in to 3 in]	6PA138-EX (nylon roller)
	Rod lever 134 mm [5.28 in]	6PA136-EX (aluminum rod)
	Adjustable length 317,5 mm [12.5 in] max. rod lever with 25,4 mm [1 in] nylon roller	6PA204-EX
	Roller lever	6PA5-EX (bronze roller) 6PA127-EX (nylon roller)

GROUNDING SCREW ASSEMBLY

(for equipped models only)

- Pan-head Phillips screw with external lock washer
- Metal clamp
- Adapter screw
- Washer

Exterior ground screw

13,5 mm [0.53 in] without wire lead

Assemble provided split lockwasher between ground lug and housing

Exterior ground screw can be assembled to any unused mounting screw hole
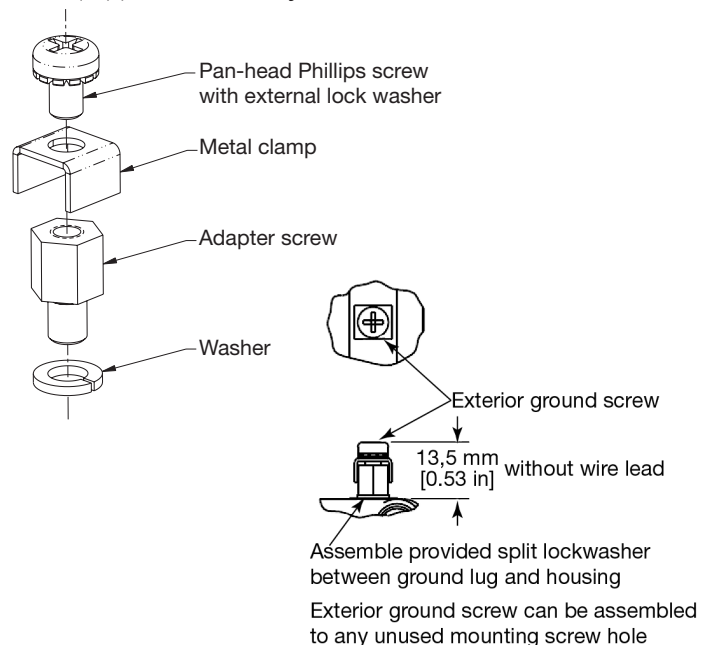
MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

TABLE 7. MOUNTING BRACKETS

15PA85-EX (for side rotary)	15PA86-EX (for top plunger)
used for top, bottom, back, or end mounting. It is furnished with each switch, except where noted in the order guides.	ordered separately for top mounting of plunger switches. EX switches may also be direct mounted, using 10-32 UNF screws.
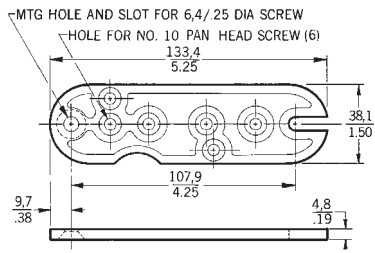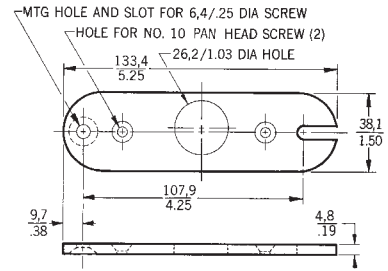
MICRO SWITCH HAZARDOUS AREA LIMIT SWITCH, EX SERIES

TABLE 8. ADDITIONAL AVAILABLE EX LSTINGS

Listing	CW	CCW	Plunger	SPDT	DPDT	2-CKT DB	1 A	10 A	15 A	20 A	Class 1 Group B	Pre-leaded
EXA-AR62	✓									✓		
EXA-N			✓	✓						✓		
EX-AR1620				✓					✓			
EX-AR-1621				✓					✓			
EX-AR182	✓			✓					✓			
EX-AR30		✓		✓					✓			
EX-AR400	✓			✓			5 A					
EX-AR420	✓			✓			5 A					
EX-AR471-15	✓					✓			✓			15 ft
EX-AR471-3	✓					✓			✓			3 ft
EX-AR68	✓			✓					✓			
EX-AR8	✓			✓					✓			
EX-AR800	✓			✓					✓		✓	
EX-AR830		✓		✓					✓			
EX-AR87	✓			✓					✓			
EXD-AR20-3	✓				✓			✓			✓	3 ft
EXD-AR-3	✓				✓			✓			✓	3 ft
EXD-AR30-3		✓			✓			✓			✓	3 ft
EXD-AR30-6		✓			✓			✓			✓	6 ft
EXD-AR62-3	✓				✓			✓			✓	3 ft
EXD-AR87-3	✓				✓			✓			✓	3 ft
EXD-N-3			✓		✓			✓			✓	3 ft
EXD-Q26-2			✓		✓			✓			✓	3 ft
EXD-Q-3			✓		✓			✓			✓	2 ft
EXD-Q62-3			✓		✓			✓			✓	3 ft
EXH-AR2	✓			✓			✓					✓
EXH-AR3	✓			✓			✓				✓	10.5 ft
EXH-AR33		✓		✓			✓				✓	10.5 ft
EXH-AR7	✓			✓			✓				✓	3 ft
EXH-AR7-R1	✓			✓			✓				✓	
EXH-N			✓	✓			✓				✓	
EXH-Q26-2			✓	✓			✓				✓	
EXHT-AR403	✓			✓			3 A					
EX-N15			✓	✓				✓				
EX-N152			✓	SPNO				✓				
EX-Q			✓	✓					✓			
EX-Q1			✓	SPNO				✓				
EX-Q171			✓	✓								
EX-Q173			✓	✓								
EX-Q19			✓	✓								
EX-Q22			✓	✓								
EX-Q62			✓	✓								
EX-Q800			✓	✓					✓		✓	
Double Conduit												
4EX1-3	✓				✓			✓				3 ft
4EX5-3	✓				✓			✓				3 ft

ADDITIONAL MATERIALS

The following associated literature is available on the Honeywell web site at sensing.honeywell.com:

- Product installation instructions
- Product range guide
- Hazardous location switches product brochure
- Product application-specific information
  - Applicaiton note: Electronic sensors and electromechanical switches in valves and flow meters
  - Application note: Industrial waste water treatment
  - Application note: Sensors and switches for industrial manual process valves
  - Sensors and switches in oil rig applications

FOR MORE INFORMATION

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WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment 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 that Honeywell, in its sole discretion, 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 Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility 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 writing. However, Honeywell assumes no responsibility for its use.

⚠ **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.

Honeywell

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Basic / Snap Action Switches *category:*

Click to view products by Honeywell *manufacturer:*

Other Similar products are found below :

5SM901-S12 5SM9-S12N195 01.098.1358.1 602EN532 602EN535-RB 602HE5-RB1 604HE162 604HE223-6B 624HE17-RB 6HM82 6HM89 6SE1 6SX1-H58 70500216 70599106 MBD5B1 MBH2731 73-316-0012 EXD-AR20 79211923 79218589 7AS12 MIL30126AB6BBMD4A12XAU ML-1155 ML-1376 831010C3.0 831090C2.EL 83131904 84212012 8AS239 8HM73-3 8SX26-H33 914CE1-6G PL-100 11SM1077-H4 11SM1077-H58 11SM1-TN107 11SM405 11SM8423-H2 11SX37-T 11SX48-H58 11SM2442-T 11SM76-T 11SM77-H58 11SM77-T 11SM863-T 11SM866 A7CN-1M-1-LEFT A831700C7.0 121EN187-R