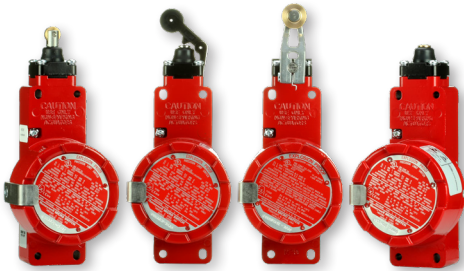


GSX SERIES


004764

Issue 7

MICRO SWITCH Safety Limit Switches for Hazardous Locations




DESCRIPTION

When the application requires a safety limit switch for hazardous environmental areas which potentially include explosive gas, dust, or fibers, Honeywell offers GSX Series safety limit switches that provide a preferred solution for the hazardous environments while monitoring gate positions. The GSX Series of safety limit switches incorporate the same internal contact block as the Global Safety Limit Switch (GSS Series). All normally closed contacts are positive opening .

A wide variety of contact blocks and actuator head combinations solve many applications.

The GSX Series safety limit switches are certified for weather-sealed indoor and outdoor environments and are also certified for continuous or intermittent use in hazardous/explosive environments through a number of different independent agencies for global applications.

FEATURES

- Safety limit switch typically suitable for global hazardous/explosive environments with cULus, ATEX, CE, UKCA, IEC Ex, and KOSHA/KTL certifications
- Up to four normally closed (NC) contacts per switch or a combination of NC and normally open (NO) contacts per limit switch
- NC contacts are positive opening  for positive mode monitoring of gates
- NO contacts available for signal circuits or negative mode monitoring of gates
- Red switch body for easy safety recognition
- Choice of actuator head types: top pin plunger, top roller plunger, top roller lever, or side rotary
- Different threaded conduit options for global applications

DIFFERENTIATION

- Up to four electrically independent contacts (Zb) per limit switch for monitoring of gates
- Designed and agency evaluated for safety functions up to and including a safety integrity level 3 (SIL3)
- Safety industrial limit switch globally certified for hazardous/explosive environments and environmentally sealed
- Gold-plated contacts available for integrity of switch contacts in hostile environments with low energy applications
- Side rotary actuator head incorporates dual bearing design for increased mechanical life


APPLICATIONS

Access panels, gates, guards, or doors on machinery for:

- Grain elevators and grain processing facilities
- Hydrocarbon and ethanol facilities
- Chemical processing
- Paint booths
- Pharmaceutical processing
- Power generation plants
- Pulp and paper processing

PORTFOLIO

Honeywell offers other safety “limit” switches which include the non-contact safety switches (FF Series)

 and cable/rope-pull safety switches (1CPS & 2CPS Series). Honeywell safety

interlocking switches include the metal-body EN50041 GK Series, metal-body solenoid (trapped key) GKL/R Series, the plastic-body EN50047 GKE Series, miniature plastic-body GKM Series, and plastic-body GKN Series.

For other hazardous location applications, Honeywell offers a wide range of limit switches in different size packages and hazardous environments. These limit switches include the BX/BX2 Series, CX Series, EX Series, LSX Series, GXS Series, and 14CE100 Series. To view the entire product portfolio, [click here](#).

Honeywell

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS

GSX SERIES

TABLE 1. SPECIFICATIONS

CHARACTERISTIC	PARAMETER
Description	GSX Series safety limit switches for hazardous areas (explosive environments)
Agency certifications	See Table 3
Housing material	Electrostatic epoxy coated aluminum body and zinc actuator heads
Actuator heads	Side rotary with various lever options, top pin plunger, top roller plunger, top roller lever
Conduit/electrical connection	0.5-14 NPT, 20 mm, PG 13,5, G1/2 (PF1/2)
Contact/switch options and types¹	1NC/1NO snap action, slow action BBM, or slow action MBB 2NC slow action 2NO slow action 2NC/2NO snap action, slow action BBM 2NC/1NO slow action BBM 3NC/1NO slow action BBM 4NC slow action
Contact design	Double break, electrically separated (Zb); 2NC/2NO snap action, each pole requires same polarity (Za)
Contact material	Silver alloy (standard), gold-plated (optional for low energy applications)
Utilization category	Snap action contacts: AC-15, A600; DC-13, Q300 Slow action contacts ³ : AC-15, A300; DC-13, Q300
Rated operational voltage (Ue)	120 Vac, 240 Vac, 600 Vac, 250 Vdc
Rated operational current (Ie)	6 A, 3 A, 1.2 A, 0.27 A
Thermal current (Ith)	10 A
Rated insulation voltage (Ui)	300 V, 600 V
Rated impulse withstand voltage (Uimp)	2500 V
Short circuit protection device (SCPD)	Class J fuse (10 A/600 V)
Pollution degree	3
Environmental sealing	IP67; NEMA 1, 3, 4, 12, and 13
Operating temperature	-40°C to 70°C [-40°F to 158°F]
Shock	50 g per IEC 60068-2-27
Vibration	10 g per IEC 60068-2-6
MCTF (Mechanical life)	>1,000,000 cycles with single-sided confidence limit of 100%
MCTF (Electrical life)	>25,000 cycles with single-sided confidence limit of 100%
SIL capability²	SIL3 capable with HFT =1, SIL2 capable with HFT =0 with reference to IEC61508-2:2010
Proof test interval	1 year


1. All normally closed contacts are positive opening .
2. HFT (Hardware Fault Tolerance).
3. Slow action 1NC/1NO contacts: AC-15, A600; DC-13, Q300

TABLE 1. ELECTRICAL SPECIFICATIONS

DESIGNATION AND UTILIZATION CATEGORY		RATED OPERATIONAL CURRENT IE (A) AT RATED OPERATIONAL VOLTAGE UE (V)						
		24 V	120 V	240 V	380 V	480 V	500 V	600 V
AC-15	A300	–	6 A	3 A	–	–	–	–
AC-15	A600	–	6 A	3 A	1.9 A	1.5 A	1.4 A	1.2 A
DC-13	Q300	2.8 A	0.55 A	0.27 A	–	–	–	–
Gold-plated contacts		1 V 10 µA min.; 50 V 100 mA max.						

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS GSX SERIES

TABLE 3. AGENCY CERTIFICATIONS

EUROPE ATEX	EUROPE CE	UK UKCA	CANADA CUL	USA UL	INTERNATIONAL IEC EX	ASIAN CERTIFICATE KOREA	SAFETY INTEGRITY LEVEL
							-
Sira 08AT-EX1073X	DOC A413	DOC B413	E61730	E61730	IEC Ex SIR 08.0021X	KOSHA/KTL 2013-BO-0400	SIL3 SIRA FSP11002/02
North America			Class I (Flammable gas) Groups B, C, and D (Div 1 and 2) Class II (Combustible dust) Groups E, F, and G (Div 1 and 2) Class III (Combustible fibers and flyings) Div 1 and 2				
ATEX and IEC Ex			II 2 GD, Ex db IIC T6 Gb Ex tb IIIC IP6X T85°C Db (Tamb -40°C to 70°C)				


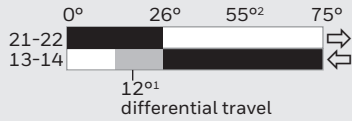
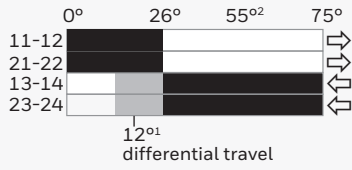
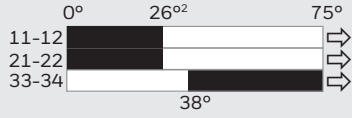
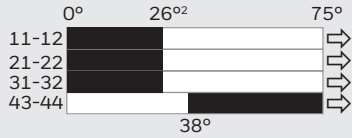
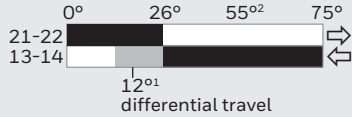
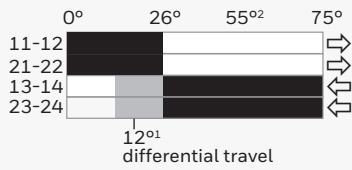
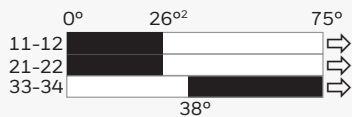
FIGURE 1. PRODUCT NOMENCLATURE

GSX	A	01	A	1	A	-
Switch Type	Conduit Connection	Circuitry	Head Style	Actuator Style	Lever Roller	Modifications/ Specials
GSX Series Hazardous Area Safety Switch	A 1/2 in NPT	01 Snap action, 1NC/1NO	A Side rotary, momentary	1 Fixed length roller	A 19,0 mm x 6,35 mm [0.75 in x 0.25 in] nylon roller	1 Clockwise rotation
	B PG 13.5	03 Slow action, 1NC/1 NO, BBM	B Top pin plunger	3 Yoke roller	C 24,4 mm x 12,7 mm [1.0 in x 0.5 in] nylon roller	2 Counter-clockwise rotation
	C 20 mm	04 Slow action, 1NC/1 NO, MBB	C Top roller plunger	5 Offset roller	D 38,1 mm x 6,35 mm [1.5 in x 0.25 in] nylon roller	3 Head assembled with actuator to right side
	D G 1/2 (PF 1/2)	05 Slow action, 2NO	D Top roller lever		E 19,0 mm x 6,35 mm [0.75 in x 0.25 in] bronze roller	4 Head assembled with actuator to left side
		06 Slow action, 2NC			W 40 mm x 12,7 mm [1.5 in x 0.5 in] bronze roller	5 Head assembled with actuator to mounting surface
		07 Snap action, 1NC/1NO, gold contacts			Y 50,9 mm x 12,7 mm [2.0 in x 0.5 in] rubber roller	6 Roller perpendicular to mounting surface
		20 Snap action, 2NC/2NO				
		22 Snap action, 2NC/2NO, gold contacts				
		33 Slow action, 1NC/1NO, BBM, gold contacts				
		34 Slow action, 1NC/1NO, MBB, gold contacts				
		35 Slow action, 2NO, gold contacts				
		36 Slow action, 2NC, gold contacts				
		40 Slow action, 4NC				
		41 Slow action, 4NC, gold contacts				
		42 Slow action, 2NC/1NO, BBM				
	43 Slow action, 2NC/1NO, BBM, gold contacts					
	44 Slow action, 2NC/2NO, BBM					
	45 Slow action, 2NC/2NO, BBM, gold contacts					
	46 Slow action, 3NC/1NO, BBM					
	47 Slow action, 3NC/1NO, BBM, gold contacts					

Note: Not all combinations available. Please contact Honeywell for more information or assistance.

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS GSX SERIES

TABLE 4. ORDER GUIDE

	CATALOG LISTING	CONDUIT ¹	HEAD AND LEVER TYPE	CONTACTS	CONTACT MATERIAL	OPER. FORCE OR TORQUE (MAX.)	Bar Chart degrees or mm ■ Contact Closed □ Contact Open ▒ Contact Closed, Differential
	GSXA01A	0.5-14 NPT	Side rotary, no lever furnished, order separately	1NC/1NO snap action	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC22A	20 mm	Side rotary, no lever furnished, order separately	2NC/2NO snap action	Gold-plated	0,3 Nm [2.6 in lb]	
	GSXA42A	0.5-14 NPT	Side rotary, no lever furnished, order separately	2NC/1NO slow action, BBM	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC42A	20 mm					
	GSXA46A	0.5-14 NPT	Side rotary, no lever furnished, order separately	3NC/1NO slow action, BBM	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC46A	20 mm					
	GSXA01A1A	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with nylon roller	1NC/1NO snap action	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC01A1C	20 mm	Side rotary with 38,1 mm [1.5 in] lever with nylon roller ³	1NC/1NO snap action	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC01A1E	20 mm	Side rotary with 38,1 mm [1.5 in] lever with copper alloy roller	1NC/1NO snap action	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXA07A1A	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with nylon roller	1NC/1NO snap action	Gold-plated	0,3 Nm [2.6 in lb]	
GSXC07A1E	20 mm	Side rotary with 38,1 mm [1.5 in] lever with copper alloy roller	1NC/1NO snap action	Gold-plated	0,3 Nm [2.6 in lb]		
GSXA20A1A	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with nylon roller	2NC/2NO snap action	Silver alloy	0,3 Nm [2.6 in lb]		
GSXA22A1A	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with nylon roller	2NC/2NO snap action	Gold-plated	0,3 Nm [2.6 in lb]		
GSXA42A1E	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with copper alloy roller	2NC/1NO slow action, BBM	Silver alloy	0,3 Nm [2.6 in lb]		
GSXC42A1E	20 mm						
GSXA43A1E	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with copper alloy roller	2NC/1NO slow action, BBM	Gold-plated	0,3 Nm [2.6 in lb]		


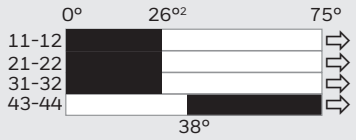

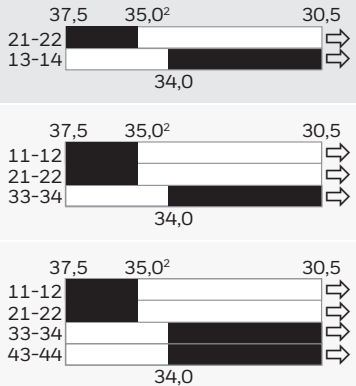

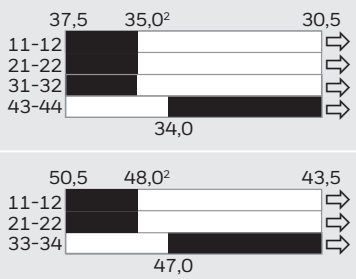

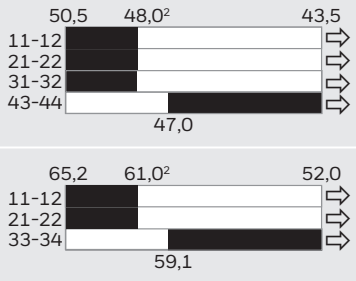
¹ Other conduit options are available, reference Product Nomenclature (Figure 1) on page 3.

² Positive opening occurs.

³ Nylon roller (Ø19 x 6,35) replaced with nylon roller (Ø25 x 12,7).

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS GSX SERIES

TABLE 4. ORDER GUIDE

	CATALOG LISTING	CONDUIT ¹	HEAD AND LEVER TYPE	CONTACTS	CONTACT MATERIAL	OPER. FORCE OR TORQUE (MAX.)	Bar Chart degrees or mm ■ Contact Closed □ Contact Open ▨ Contact Closed, Differential
	GSXA46A1E	0.5-14 NPT	Side rotary with 38,1 mm [1.5 in] lever with copper alloy roller	3NC/1NO slow action, BBM	Silver alloy	0,3 Nm [2.6 in lb]	
	GSXC46A1E	20 mm					
	GSXA03B	0.5-14 NPT	Top pin plunger	1NC/1NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]	
	GSXA42B	0.5-14 NPT	Top pin plunger	2NC/1NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]	
	GSXC42B	20 mm					
	GSXA44B	0.5-14 NPT	Top pin plunger	2NC/2NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]	
	GSXA46B	0.5-14 NPT	Top pin plunger	3NC/1NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]	
	GSXC46B	20 mm					
	GSXA42C	0.5-14 NPT	Top roller plunger	2NC/1NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]	
	GSXC42C	20 mm					
GSXA46C	0.5-14 NPT	Top roller plunger	3NC/1NO slow action, BBM	Silver alloy	16,0 N [3.6 lb]		
GSXA46C	20 mm						
	GSXA42D	0.5-14 NPT	Top roller lever	2NC/1NO slow action, BBM	Silver alloy	9,5 N [2.1 lb]	
	GSXC42D	20 mm					
	GSXA46D	0.5-14 NPT	Top roller lever	3NC/1NO slow action, BBM	Silver alloy	9,5 N [2.1 lb]	
	GSXC46D	20 mm					

¹ Other conduit options are available, reference Product Nomenclature (Figure 1) on page 3.

² Positive opening occurs

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS

GSX SERIES

FIGURE 2. MOUNTING DIMENSIONS MM [IN]

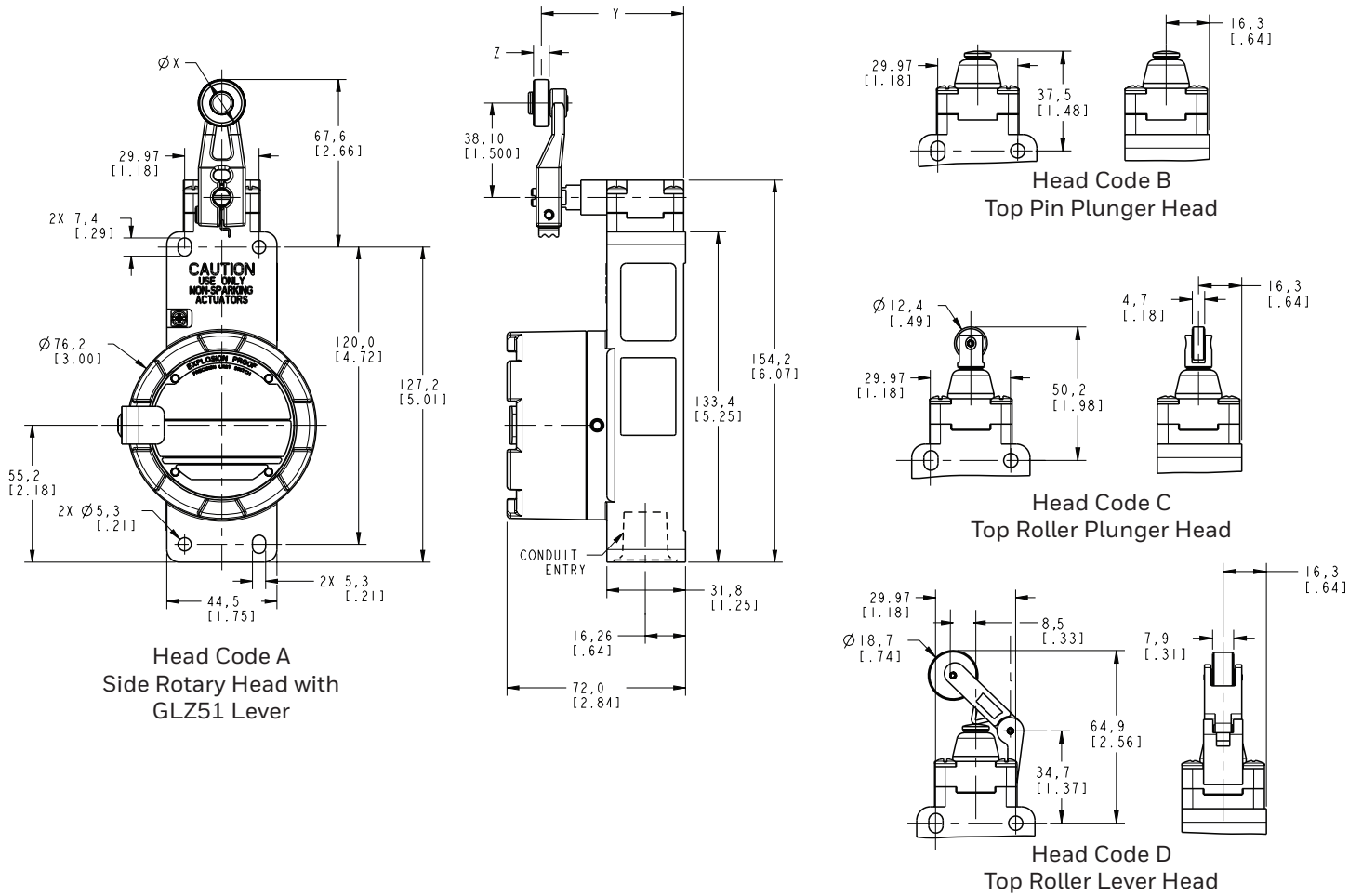


TABLE 5. MOUNTING DIMENSIONS FOR HEAD CODE A (SIDE ROTARY) AND LEVERS WITH ROLLERS

ACTUATOR CODE	REPLACEMENT LEVER	ROLLER MATERIAL	"X" DIM. ϕ	"Y" DIM.	"Z" DIM WIDTH
1A	GLZ51A	Nylon	19,0 mm [0.75 in]	55,9 mm [2.20 in]	6,4 mm [0.25 in]
1C	–	Nylon	25,4 mm [1.00 in]	59,2 mm [2.33 in]	12,7 mm [0.50 in]
1D	GLZ51D	Nylon	38,1 mm [1.50 in]	55,9 mm [2.20 in]	6,4 mm [0.25 in]
1E	GLZ51E	Bronze	19,0 mm [0.75 in]	55,9 mm [2.20 in]	6,4 mm [0.25 in]
1Y	GLZ51Y	Rubber	50,0 mm [1.97 in]	57,7 mm [2.27 in]	9,9 mm [0.39 in]
3A	GLZ53A	Nylon	19,0 mm [0.75 in]	55,9 mm [2.20 in]	6,4 mm [0.25 in]
3E	GLZ53E	Bronze	19,0 mm [0.75 in]	55,9 mm [2.20 in]	6,4 mm [0.25 in]
5A	GLZ55A	Nylon	19,0 mm [0.75 in]	83,2 mm [3.28 in]	6,4 mm [0.25 in]
5E	GLZ55E	Bronze	19,0 mm [0.75 in]	83,2 mm [3.28 in]	6,4 mm [0.25 in]

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS GSX SERIES

TABLE 6. FUNCTIONAL SAFETY INFORMATION

Safety function: The functionality of the certified device that has been assessed for use by safety functions is to open the normally closed (NC) contacts on the actuation of the switch. The user should note the number of cycles for which the safety-related data is valid.

Summary of IEC 61508-2 Clauses 7.4.2 and 7.4.4		GSX (GSX***A-D**.*) SERIES EXPLOSION-PROOF SAFETY SWITCH		VERDICT	
Architectural constraints & type of product A/B		HFT = 0	HFT = 1	Type A	
Safe failure fraction (SFF)		82 %	82%	HFT 0	HFT 1
				SIL 2	SIL 3
Random hardware failures (h ⁻¹)	λ_{DD}	0.00E+00	0.00E+00		
	λ_{DU}	2.61E-08	2.61E-09		
Random hardware failures (h ⁻¹)	λ_{SD}	0.00E+00	0.00E+00		
	λ_{SU}	1.15E-07	1.16E-08		
Diagnostic coverage (DC)		0.00 %	0.00 %		
PFD @ PTI = 730 hrs., MTTR = 8 hrs.		1.14-E-04	1.15-E-05		
Probability of dangerous failure (high demand - PFH) (h ⁻¹)		2.61E-08	2.61E-09		
Hardware safety integrity compliance		Route 1 _H			
Systematic safety integrity compliance		see report R700127229C (Route 1 _S)			
Systematic capability (SC 1, SC 2, SC 3, SC 4)		SC3			
Hardware safety integrity achieved		SIL 2 achieved with HFT=0 SIL 3 achieved with HFT=1			

SAFETY LIMIT SWITCHES FOR HAZARDOUS LOCATIONS GSX SERIES

Honeywell

EU Declaration of Conformity

Honeywell Control Systems Ltd. hereby declare that the products identified below conform to the essential requirements of the EU Directive(s) listed below and that the products supplied are in conformity with the type described in any EU Type Examination Certificate (EU TEC) identified below. This declaration is issued under the sole responsibility of the manufacturer.

Manufacturer: Honeywell International, Honeywell-Optoelectronica,
Parque Industrial, Juarez,
Ciudad Juarez, Chihuahua, Mexico

Product: Limit Switch
GSX Series

Directive (Amendments)

Conformity Details

LVD 2014/35/EU	Standards applied:	EN 60947-1:2007 + A1:2011 + A2:2014 EN 60947-5-1:2017
MD 2006/42/EC	Standards applied:	EN ISO 14119:2013
ATEX 2014/34/EU	Standards applied:	EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014
	EU TEC No:	SIRA 08ATEX1073X
	Notified Body:	Notified Body ID 2813 CSA Group Netherlands BV Utrechtseweg 310, 6812 AR Arnhem, Netherlands
	ATEX Markings	II 2 GD Ex db IIC T6 Gb, Ex tb IIIC IP6X T8SC Db

Signed on behalf of Honeywell International Inc. :



Gene Ottes, Quality Manager

DoC No: A413
Original Issue Date:

DoC Issue: 8

DoC Date: 01-March-2022

Page 1 of 2

Honeywell

UK Declaration of Conformity

Honeywell International Inc. hereby declare that the products identified below conform to the essential requirements of the UKSI 2016:1107 (as amended) and that the products supplied are in conformity with the type described in any UK Type Examination Certificate (UK TEC) identified below. This declaration is issued under the sole responsibility of the manufacturer.

Manufacturer: Honeywell International, Honeywell-Optoelectronica,
Parque Industrial, Juarez,
Ciudad Juarez, Chihuahua, Mexico

Product: Limit Switch
GSX Series

Directive (Amendments)

Conformity Details

Electrical Equipment (Safety) Regulations 2016	Standards applied:	EN 60947-1:2007 + A1:2011 + A2:2014 EN 60947-5-1:2017
Supply of Machinery (Safety) Regulations 2008	Standards applied:	EN ISO 14119:2013
Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations	Standards applied:	EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014
	UK TEC No:	CSAE 21UKEX1730X
	Approved Body:	Approved Body ID 0518 Sira Certification Service, Rake Lane, Eccleston, Chester, CH4 9JN, England
	Markings	II 2 GD Ex db IIC T6 Gb, Ex tb IIIC T8SC Db IP6X

Signed on behalf of Honeywell International Inc. :



Gene Ottes, Quality Manager

DoC No: B413
Original Issue Date:

DoC Issue: 1

DoC Date: 01-March-2022

Page 1 of 2

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.

FOR MORE INFORMATION

Honeywell Sensing & Switching Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit sps.honeywell.com/ast or call:

USA/Canada	+302 613 4491
Latin America	+1 305 805 8188
Europe	+44 1344 238258
Japan	+81 (0) 3-6730-7152
Singapore	+65 6355 2828
Greater China	+86 4006396841

Honeywell Sensing & Switching Technologies

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Richardson, TX 75081
www.honeywell.com

⚠ WARNING IMPROPER INSTALLATION

- Consult with local safety agencies and their requirements when designing a machine-control link, interface and all control elements that affect safety.
- Strictly adhere to all installation instructions.

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.