



Application

Limit switch with inductive proximity switches or electric microswitches for attachment to rotary actuators according to VDI/VDE 3845, level 1 and level 2

The Type 3773 Limit Switch issues an electric signal when the valve travel exceeds or falls below an adjusted limit. The signal is suitable for switching control signals, issuing visual and audible alarms or for connection to central control or alarm systems.

Special features

- Electrical connection using M20x1.5 to screw terminals or cage clamp terminals (0.5 to 2.5 mm²)
- Corrosion-resistant plastic housing with degree of protection IP 65 for adverse environmental conditions
- Permissible ambient temperature -40 to 80 °C
- Mounting kits for rotary actuators with interface according to VDI/VDE 3845
- Type of protection Ex ia
- Continuously adjustable limit contacts

Versions

- Type 3773-xxx0: Limit switch with two inductive proximity switches, switching point adjustable between 0 and 100°
- Type 3773-xxx2: Limit switch with two electric microswitches, switching point adjustable between 0 and 100°

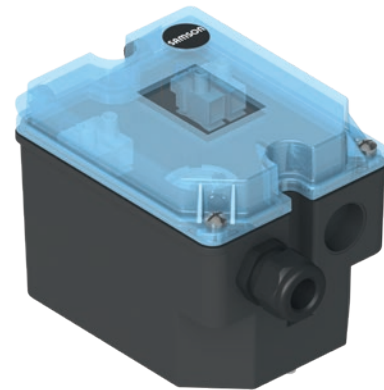


Fig. 1: Type 3773 Limit Switch



Fig. 2: Attachment to rotary actuators according to VDI/VDE 3845, level 1

Design and principle of operation

The shaft (1) of the limit switch is connected to the actuator shaft using an adapter. For most applications the contacts are adjusted to issue a signal when the actuator has reached one of its end positions. Two adjustment screws (3) are used to continuously adjust the switching point to any position within the opening angle to signalize an intermediate position.

Version with inductive proximity switches

The limit switch has adjustable metal tags (5) on the shaft. When the tag is inside the magnetic field of the proximity switch (4), the proximity switch is attenuated and the output has a high impedance (switching function "Contact open"). When the tag leaves the magnetic field, the proximity switch is unattenuated and the output has a low impedance (switching function "Contact closed"). The tag can be adjusted to a switching point between 0 and 100° at the adjustment screw (3).

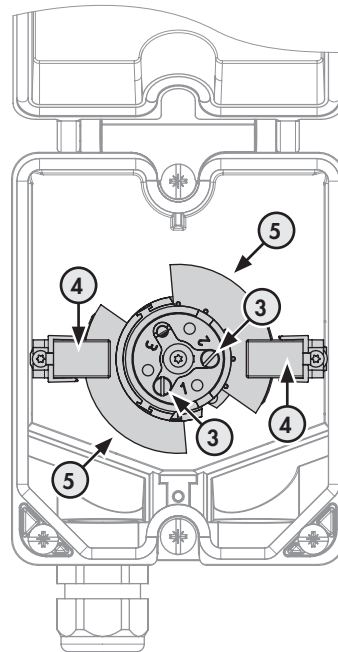
Version with electric microswitches

The limit switch has two adjustable cam disks (7) on the shaft. The cam disk activates the electric microswitch (6) over the roller on the switch lever. The cam disks can be adjusted to a switching point between 0 and 100° at the adjustment screws (3).

Legend for Fig. 3 and Fig. 4:

- 1 Shaft
- 2 Terminals (screw terminals in this example)
- 3 Adjustment screws
- 4 Proximity switch
- 5 Metal tag
- 6 Microswitch
- 7 Cam disk

Version with inductive proximity switches



Version with electric microswitches

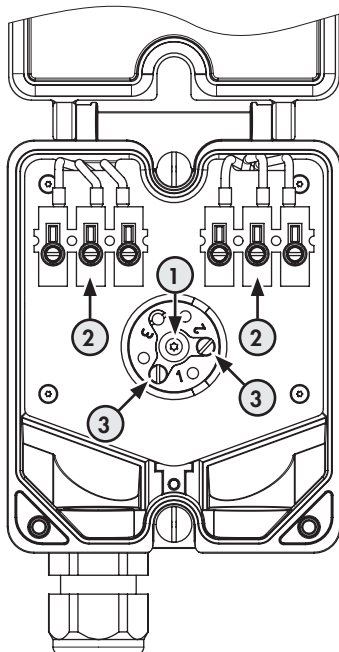
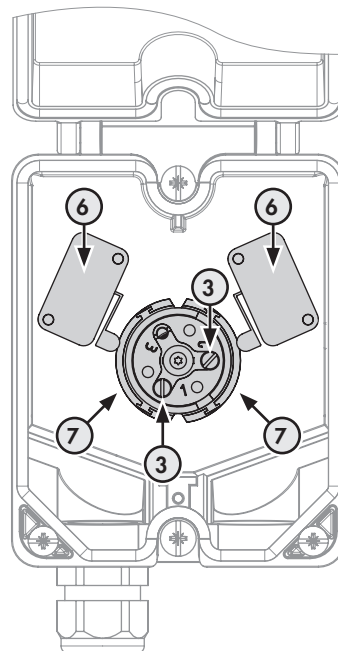


Fig. 3: Operating controls of the Type 3773 Limit Switch

Fig. 4: Versions of the Type 3773 Limit Switch

Technical data

Type 3773 Limit Switch	
Range of rotation	0 to 100°
Electromagnetic compatibility	Complying with EN 61000-6-2, EN 61000-6-3 and NAMUR Recommendation NE 21
Degree of protection	IP 65
Explosion protection	Zündschutzart II 2/3 G/D Ex ia T6
Electrical connection	1 x cable gland M20x1.5
Number of contacts	2
Permissible ambient temperature ¹⁾	-40 to +80 °C
Weight	Approx. 0.4 kg

¹⁾ Observe the temperature limits in the test certificate for explosion-protected versions.

Technical data · Inductive proximity switch			
Version	-02	-04	-05
	SC3,5-N0-WH	SJ3,5-SN	SJ3,5-S1N
Switching function	NAMUR NC contact		NAMUR NO contact
Switching accuracy	0.06 to 0.1 mm	<0.2 mm	<0.3 mm
Control circuit			
Temperature ¹⁾	-40 to +80 °C	-40 to +80 °C	-40 to +80 °C
Limit contact in type of protection Ex ia IIC for use in hazardous areas (Zone 1)			
Version	-02	-04	-05
Output voltage U _i	16 V DC		
Output current I _i	52 mA		
Power dissipation P _i	169 mW		
Outer capacitance C _i	150 nF	30 nF	
Outer inductance L _i	150 µH	100 µH	
Temperature	-40 °C ≤ Ta ≤ +45 °C		


¹⁾ The permissible ambient temperature depends on the permissible ambient temperature of the components, type of protection and temperature class. A restricted temperature range may arise for SIL applications.

Technical data · Electric microswitches		
Version	-20	-21
	XGK19-88-S20	XGK12-81-S20
Contact	Silver contact	Gold contact
Switching function	Changeover contact/SPDT (single-pole/double-throw type)	
Switching accuracy	On request	On request
Temperature ¹⁾	-40 to +80 °C	-40 to +80 °C
Permissible contact load	250 V AC/10 A · 125 V DC/0.5 A · 24 V DC/10 A	
Limit switch in type of protection Ex nA II for use in hazardous areas (Zone 2 or 22)		
Version	-20	-21
Output voltage U _i	28 V	
Output current I _i	115 mA	
Power dissipation P _i	500 mW	
Outer capacitance C _i	0 nF	
Outer inductance L _i	0 µH	
Temperature	-40 °C ≤ Ta ≤ +80 °C	

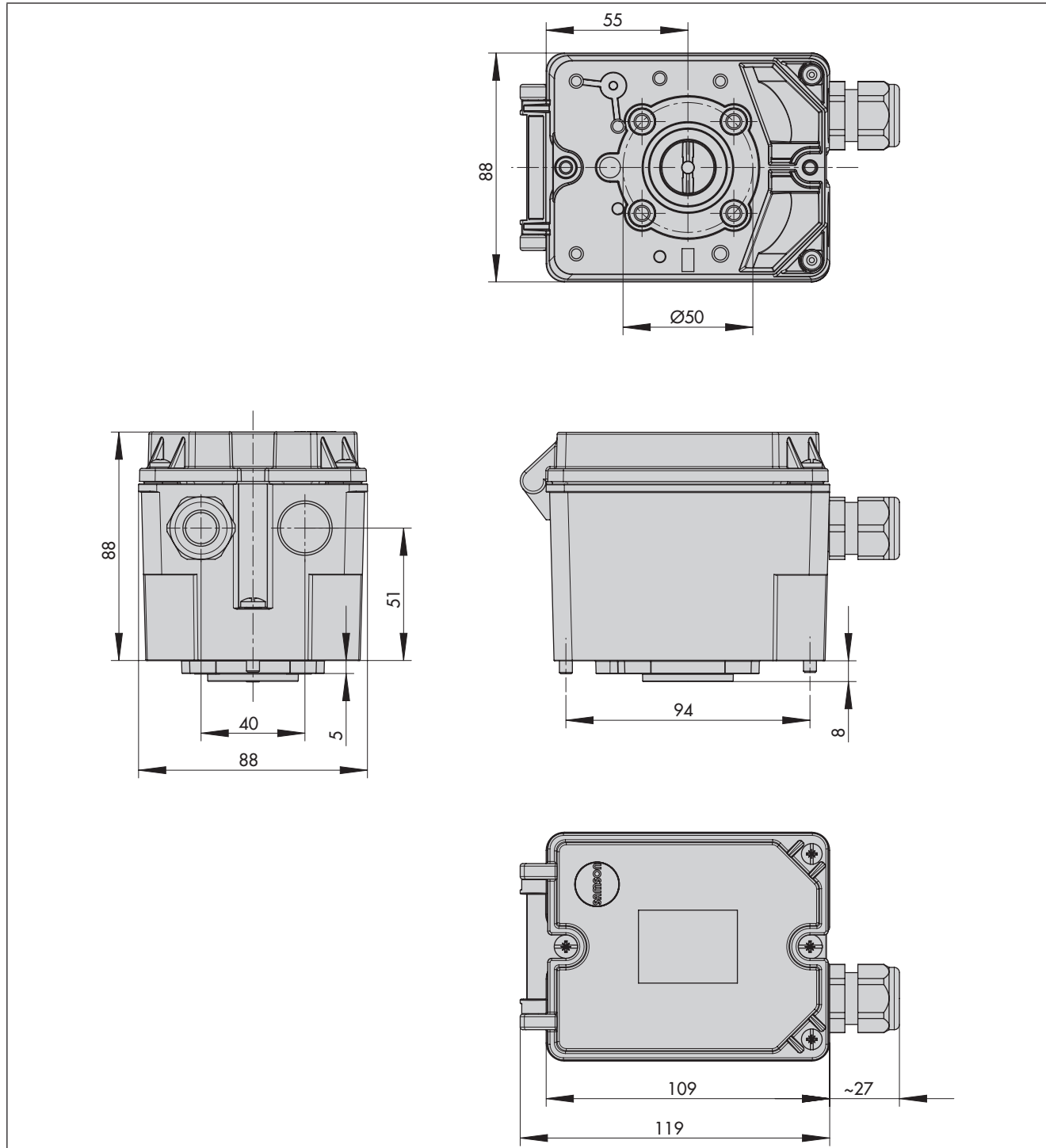
¹⁾ The permissible ambient temperature depends on the permissible ambient temperature of the components, type of protection and temperature class. A restricted temperature range may arise for SIL applications.

Materials	
Housing	Polyarylamide PA MXD6 – GF50
Housing cover	Polycarbonate (PC) Makrolon®
Follower shaft	Polyoxymethylene (POM)
Housing breather	Polyethersulfone on PET nonwoven fabric
Screws	Stainless steel A4-70
Terminals	Polyamide 6.6

Summary of explosion protection approvals

		Certification			Type of protection/comments
Type 3773	-110	 EU type examination certificate	Number	TÜV 18 ATEX 8323 X	II 2G Ex ia IIC T4/T6 Gb II 2D Ex ia IIIB T95°C Db
			Date	2019-04-13	
	-111	IECEX	Number	IECEX TUR 19.0010X	Ex ia IIC T4/T6 Gb Ex ia IIIB T95°C Db
			Date	2019-04-13	

Dimensions in mm



Article code

Limit switch	Type 3773-	x	x	x	x	x	x	x	x	x	x	x	0	x	x	x	0	0	0	x	x
Explosion protection																					
Without																					
		0	0	0																	
ATEX: II 2G Ex ia IIC T4/T6 Gb																					
		1	1	0																	
IECEX: Ex ia IIC T4/T6 Gb																					
		1	1	0																	
Limit contact																					
Inductive SC3,5-N0-WH (-40 to +80 °C)																					
					0	2															
Inductive SJ3,5-SN (-40 to +80 °C)																					
					0	5															
Inductive SJ3,5-S1N (-40 to +80 °C)																					
					0	6															
Microswitch XGK19-88-S20 with silver contact (-40 to +80 °C)																					
					2	0															
Microswitch XGK12-81-S20 with gold contact (-40 to +80 °C)																					
					2	1															
Number of contacts																					
Two contacts																					
							2														
Switching angle																					
<100°																					
								0													
Terminals																					
Screw terminals																					
									1												
Cage clamp terminals																					
									2												
Electrical threaded connections																					
M20x1.5																					
										1											
Degree of protection																					
IP 65																					
											0										
Housing material																					
Black plastic (polyarylamide PA MXD6 – GF50)																					
												0									
Cover																					
Blue plastic (polycarbonate (PC) Makrolon®)																					
													0								
Permissible ambient temperature																					
-25 to +80 °C (+65 °C in T6)																					
															0						
Hardware version																					
Index: 00																					
																				9	9

