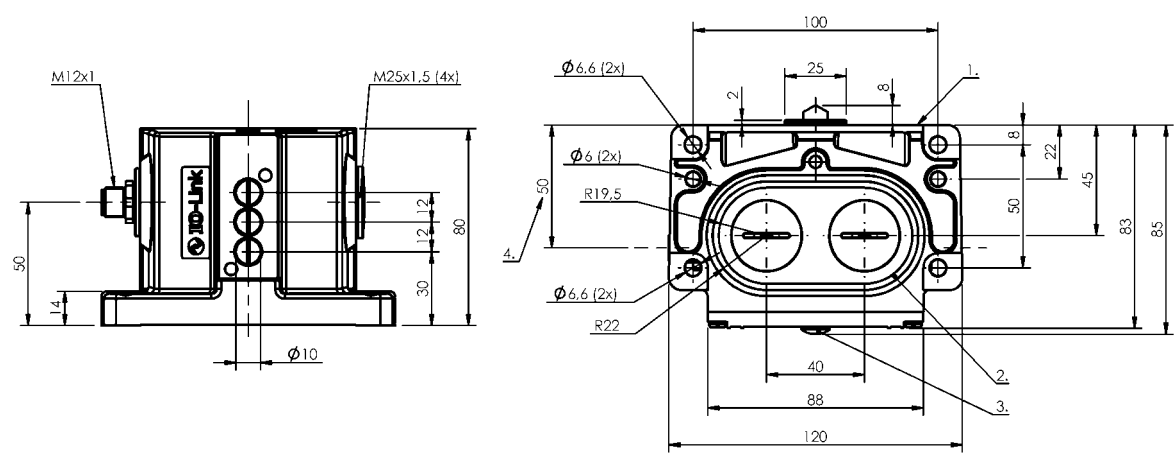


Mechanical Cam Switches
BNS 819-D03-D12-100-10-FD-S4L-I
Order Code: BNS04H2



1) Reference edge, 2) Sealing ring, 3) Function indicator FD/FE/LL, 4) Cable passage



Basic features

Approval/Conformity	CE UKCA WEEE
Basic standard	IEC 60947-5-1
DIN switch	DIN 43697
Operating principle	1-3. Switch position: Mechanical
Version	Snap contact

Display/Operation

Function indicator	1-3. Switch position: LED
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Electrical connection

Connection	M12x1-Flange male, 4-pin, A-coded
Connection type	1. Switch position: Connector

Electrical data

Rated operating voltage Ue DC	24 V
Switching function mechanical	Double-interrupting galvanically isolated One NO and one NC Dual changeover
Switching rate	1-3. Switch position: 300/min

Environmental conditions

Ambient temperature	-5...85 °C
IP rating	IP67

Functional safety

B10d (EN ISO 13849-1)	BSE 30.0: 30 mil. switching cycles
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Interface

Cycle time min.	3 ms
Frame type	2.1
Interface	IO-Link 1.1
Process data cycle min.	3 ms

Material

Housing material	Aluminium, Anodized
Housing material, surface protection	Anodized
Material contacts	1-3. Switch position: Silver, gold plated
Plunger material	1-3. Switch position: 1.4034 stainless steel

Mechanical Cam Switches
BNS 819-D03-D12-100-10-FD-S4L-I
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Mechanical data

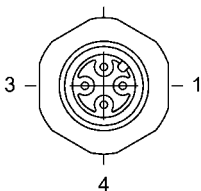
Approach direction	longitudinal, parallel to attachment surface
Approach speed	1-3. Switch position: 40 m/min
Distance cam - reference edge	1-3. Switch position: 4.50...5.00 mm
Flange, feed-through	2 threaded exit M25
Installation	Vertical
Life expectancy mechanical	1-3. Switch position: 30 mil. switching operations

Number of switching positions	3x Chisel Mechanical
Plunger style	1-3rd switch position: Chisel 1-3rd switch position: Chisel
Switch actuation force	1-3. Switch position: 20 N
Switching element	1-3. Switch position: BSE 30.0

Range/Distance

Reproducibility	1-3. Switch position: ± 0.002 mm
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Connector Drawings



View of connector side

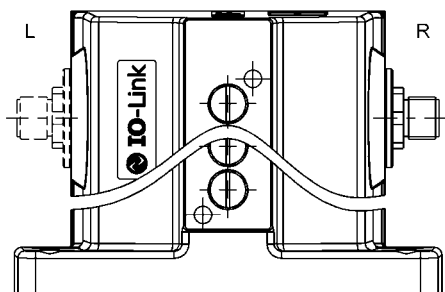
Mechanical Cam Switches

BNS 819-D03-D12-100-10-FD-S4L-I

Order Code: BNS04H2

BALLUFF

Wiring Diagrams



PIN 1: +24V
PIN 3: 0V
PIN 4: IO-Link



Help Views

BNS with IO-Link from 1 up to 16 positions

Frame type: 2.1

Process data length: 1 Byte

Process data image:

Process data: ≤ 8 positions							
Byte 0							
7	6	5	4	3	2	1	0
NO / NC 8	NO / NC 7	NO / NC 6	NO / NC 5	NO / NC 4	NO / NC 3	NO / NC 2	NO / NC 1
NO / NC 8	NO / NC 7	NO / NC 6	NO / NC 5	NO / NC 4	NO / NC 3	NO / NC 2	NO / NC 1

Process data: > 8 positions															
Byte 0								Byte 1							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
NO / NC 16	NO / NC 15	NO / NC 14	NO / NC 13	NO / NC 12	NO / NC 11	NO / NC 10	NO / NC 9	NO / NC 8	NO / NC 7	NO / NC 6	NO / NC 5	NO / NC 4	NO / NC 3	NO / NC 2	NO / NC 1
NO / NC 16	NO / NC 15	NO / NC 14	NO / NC 13	NO / NC 12	NO / NC 11	NO / NC 10	NO / NC 9	NO / NC 8	NO / NC 7	NO / NC 6	NO / NC 5	NO / NC 4	NO / NC 3	NO / NC 2	NO / NC 1

On-request data:

	DPP	SPDU		Object name	Length	Range	Default value
	Index	Index	Sub-Index				
Identification Data	0x07			Vendor ID	2 Byte	read only	0x0378
	0x08			Decice ID	3 Byte		0x01010X X = No. of positions
	0x09						
	0x0A			Vendor name	7 Byte		BALLUFF www.balluff.com
	0x0B						
		0x10	0	Vendor text	15 Byte		BNS 819-xxx-xxx-xx-S4x-I
		0x11	0	Product name	31 Byte		BNSxxxx
		0x12	0	Product ID	7 Byte		BNS xx-fach
		0x13	0	Product text	10 / 11 Byte		
		0x14	0	Hardware Revision	2 Byte		
		0x16	0	Firmware Revision	2 Byte		
Programmable Data		0x40	0	NO / NC	≤ 8 positions = 1 Byte	0x00 - (2^positions)-1 (1 Bit = 1 position)	"0"
	> 8 positions = 2 Byte						
			1 - 16		1 Byte	"0" Not inverted "1" inverted	

Errors:

Class			Error Code	Additional Code
Mode	Type	Instance		
single shot	Error	AL	Device application error	Index not available
			0x40	0x30
			0x03	0x03
			0x80	0x11
			0x73	0x80
			0x80	0x11
single shot	Error	AL	Device application error	Sub-Index not available
			0x40	0x30
			0x03	0x03
			0x80	0x12
			0x73	0x80
			0x80	0x12

Input data: No input data available