Sensors and Systems

Edition 3.0

Your automation, our passion.

PEPPERL+FUCHS

Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Cable and connector versions

Your Benefit

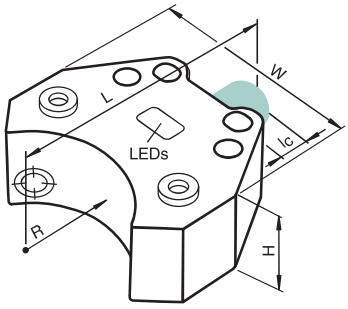
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	Dual (NO)
Installation	flush mountable
Operating voltage	6 ... 60 V DC
Reverse polarity protection	tolerant
Switching frequency	0 ... 500 Hz
Operating current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number		NBN3-F25-Z8-0,14	NBN3-F25-Z8-5M	NBN3-F25-Z8-V1	NBN3-F25F-Z8-V1
Installation type	compact design for installation in housing and flange installation				●
Connection type	Device connector M12 x 1 , 4-pin			●	●
	cable PVC , 180 mm	●			
	cable PVC , 5 m		●		
Approvals and Certificates					
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)			●	
Dimensions					
Length L [mm]		52	52	61	62
Width W [mm]		52			
Height H [mm]		20			
Radius R [mm]		20.8			
Connector area l_c [mm]		0		12	18



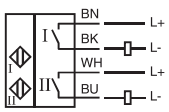
Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets
See pages 1068 ... for mounting aids

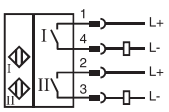
BT32	Activator for F25 series
BT32XS	Activator for F25 series
BT32XAS	Activator for F25 series
BT33	Activator for F25 series
BT34	Activator for F25 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable

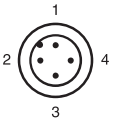
Electrical Connection

NBN3-F25-Z8-5M
NBN3-F25-Z8-0,14



NBN3-F25-Z8-V1
NBN3-F25F-Z8-V1





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue 04/08/2015

Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Cable and connector versions

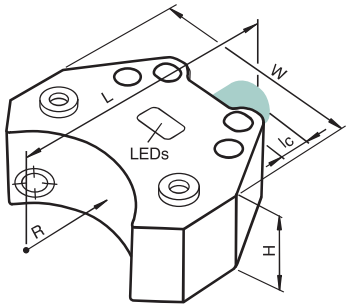
Your Benefit

- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80

Further Products

In this series, we offer additionally:

NBN3-F25-E8-K
Technical data like NBN3-F25-E8-5M but:
Protection degree: IP20
Connection type: MINI-COMBICON



Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	all connections
Switching frequency	0 ... 500 Hz
Operating current	0 ... 200 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA at 25 °C
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Protection degree	IP67
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT

Model Number	green = preferred type	NBN3-F25-E8-0,14	NBN3-F25-E8-5M	NBN3-F25-E8-V1	NBN3-F25F-E8-V1
Installation type	compact design for installation in housing and flange installation				●
Connection type	Device connector M12 x 1 , 4-pin			●	●
	cable PVC , 180 mm	●			
	cable PVC , 5 m		●		
	MINI-COMBICON				
Approvals and Certificates					
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.				
Dimensions					
Length L [mm]		52		61	62
Width W [mm]		52			
Height H [mm]		20			
Radius R [mm]		20.8			
Connector area l_c [mm]		0		12	18

Accessories

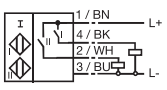
This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

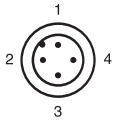
BT32	Activator for F25 series
BT32XS	Activator for F25 series
BT32XAS	Activator for F25 series
BT33	Activator for F25 series
BT34	Activator for F25 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-W-BK	4-pin, M12 female field-attachable connector
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable

Electrical Connection

NBN3-F25-E8-K
NBN3-F25-E8-0,14
NBN3-F25-E8-5M
NBN3-F25-E8-V1
NBN3-F25F-E8-V1

E8





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue: 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	Dual (NO)
Installation	flush mountable
Operating voltage	6 ... 60 V DC
Reverse polarity protection	tolerant
Switching frequency	0 ... 500 Hz
Operating current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

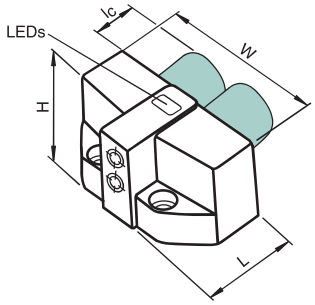
Model Number		NBN3-F31-Z8-K	NBN3-F31-Z8-K-K	NBN3-F31-Z8-V1	NBN3-F31-Z8-V18	NBN3-F31-Z8-V16-V15	NBN3-F31-Z8-V16-V16
Valve status indication	LED, yellow					●	●
Connection type	Device connector M18 x 1 , 4-pin				●		
Connection (system side)	connector M12 x 1, 4-pin			●			
	connector Rd24 x 1/8 , 4-pin					●	●
	PVC cable 5 m	●	●				
Connection (valve side)	5-pin, M12 x 1 socket					●	
	PVC cable 0.5 m		●				
	connector Rd24 x 1/8 , 4-pin						●
Approvals and Certificates							
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●		
Dimensions							
Length L [mm]		36					
Width W [mm]		65					
Height H [mm]		33.5					
Connector area l_c [mm]		28		10	18	28	

Properties

- F31 housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Cable and connector versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



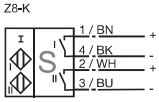
Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

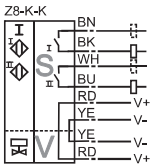
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V18-G	Cable socket in M18 format, ready for make up
V16-G	Cable socket, dia. 24, 6-pin+PE, easy to assemble
V18-W	Cable socket in M18 format, ready for make up
V15-G-PG9	Cable socket, M12, 5-pin, ready for assembly

Electrical Connection

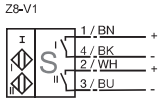
NBN3-F31-Z8-K



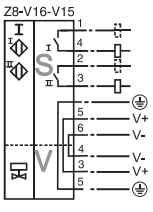
NBN3-F31-Z8-K-K



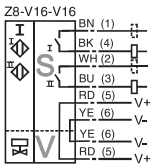
NBN3-F31-Z8-V1



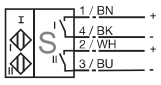
NBN3-F31-Z8-V16-V15

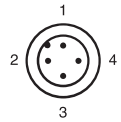


NBN3-F31-Z8-V16-V16



NBN3-F31-Z8-V18





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	all connections
Switching frequency	0 ... 500 Hz
Operating current	0 ... 100 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA at 25 °C
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number	green = preferred type	NBN3-F31-E8-K	NBN3-F31-E8-K-K	NBN3-F31-E8-V1	NBN3-F31-E8-V16-V15	NBN3-F31-E8-V18
Valve status indication	LED, yellow		●			
Connection type	Device connector M12 x 1 , 4-pin			●		
	Device connector M18 x 1 , 4-pin					●
Connection (system side)	Device connector Rd24 x 1/8 , 4-pin			●	●	
	PVC cable 5 m	●	●			
Connection (valve side)	5-pin, M12 x 1 socket			●	●	
	PVC cable 0.5 m		●			

Approvals and Certificates						
UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.					

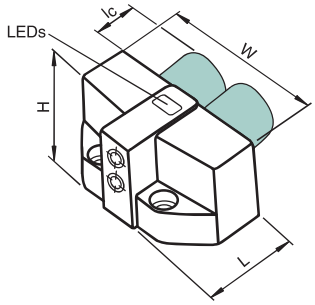
Dimensions					
Length L [mm]	36				
Width W [mm]	65				
Height H [mm]	33.5				
Connector area l_c [mm]	28	10	28	18	

Properties

- F31 housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Cable and connector versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



Accessories

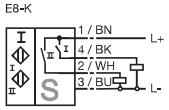
This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

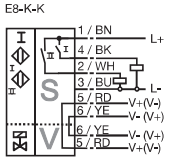
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V18-G	Cable socket in M18 format, ready for make up
V16-G	Cable socket, dia. 24, 6-pin+PE, easy to assemble
V15-G-PG9	Cable socket, M12, 5-pin, ready for assembly

Electrical Connection

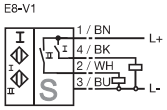
NBN3-F31-E8-K



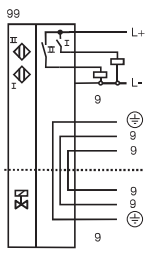
NBN3-F31-E8-K-K



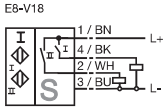
NBN3-F31-E8-V1

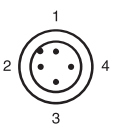


NBN3-F31-E8-V16-V15



NBN3-F31-E8-V18





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue: 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	AC/DC binary NO
Installation	flush mountable
Operating voltage	20 ... 253 V AC/DC
Reverse polarity protection	✔
Switching frequency	25 Hz
Operating current	4 ... 400 mA
Off-state current	≤ 1.7 mA
Short-circuit protection	✔
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

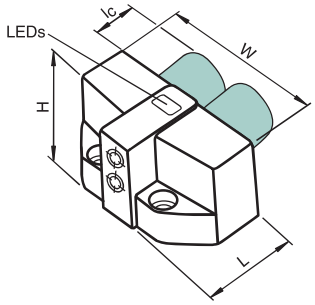
Model Number		NBN3-F31-U8-K	NBN3-F31-U8-V125	NBN3-F31-U8-V18
Connection type	Device connector 1/2"-20 UN		●	
	Device connector M18 x 1 , 4-pin			●
	cable PVC , 5 m	●		
Approvals and Certificates				
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
Dimensions				
Length L [mm]			36	
Width W [mm]			65	
Height H [mm]			33.5	
Connector area l_c [mm]		28	10	18

Properties

- F31 housing
- 3 mm, flush mountable
- AC/DC, dual 2-wire switching output
- Cable and connector versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



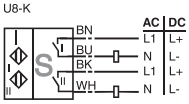
Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

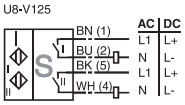
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
V18-G	Cable socket in M18 format, ready for make up
V125-G-YE2M-PVC	Cable socket, M12, 5-pin, PVC cable
V18-W	Cable socket in M18 format, ready for make up
V125-W-YE2M-PVC	Connecting cable, 1/2" - 20 UNF, 5-pin, PVC cable

Electrical Connection

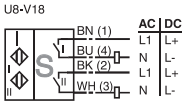
NBN3-F31-U8-K

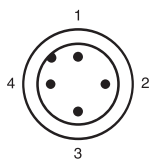


NBN3-F31-U8-V125



NBN3-F31-U8-V18





Wire colors in accordance with EN 60947-5-2

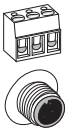
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	DC binary NO
Installation	flush mountable
Reverse polarity protection	tolerant
Switching frequency	0 ... 500 Hz
Operating current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number		NBN3-F31K-Z8	NBN3-F31K-Z8-K	NBN3-F31K-Z8-V1-V1
Operating voltage	10 ... 30 V DC			●
	6 ... 60 V DC	●	●	
No-load supply current	≤ 25 mA			●
Short-circuit protection	pulsing			●
Operating voltage display	LED, green			●
Valve status indication	LED, yellow		●	●
Connection (system side)	Cage tension spring terminals	●	●	●
Connection (valve side)	4-pin, M12 x 1 socket			●
	Cage tension spring terminals		●	
				

Approvals and Certificates				
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.			

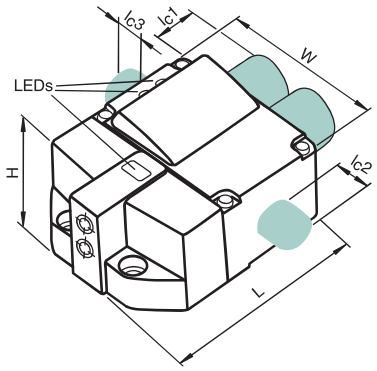
Dimensions				
Length L [mm]		77.5		
Width W [mm]		65		
Height H [mm]		35		
Connector area l_c1 [mm]		10		
Connector area l_c2 [mm]	-	10		
Connector area l_c3 [mm]		-		10

Properties

- F31K housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Terminal compartment
- Connector and cable gland versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



Accessories

This and more accessories can be found in chapter 10

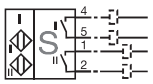
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
VMA-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, Form A on M12, 2+PE, LED, Z diode, PVC cable
VMB-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, Form B on M12, 2+PE, LED, Z diode, PUR cable
VMC-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, model C on M12, 2 + PE, LED, zener diode, PVC cable
VMCI-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, model C (ind) on M12, 2 + PE, LED, zener diode, PVC cable

Electrical Connection

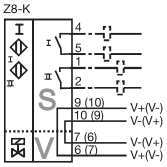
NBN3-F31K-Z8

Z8

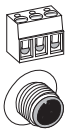


NBN3-F31K-Z8-K

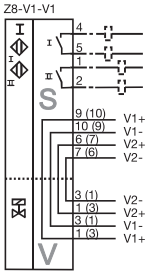
Z8-K

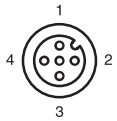


NBN3-F31K-Z8-V1-V1



Z8-V1-V1





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Date of issue: 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Switching element function	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✔
Switching frequency	0 ... 500 Hz
Operating current	0 ... 100 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number		NBN3-F31K-E8	NBN3-F31K-E8-K	NBN3-F31K-E8-V1-V1
	green = preferred type			
Valve status indication	LED, yellow		●	●
Connection (system side)	Cage tension spring terminals	●	●	●
Connection (valve side)	4-pin, M12 x 1 socket			●
	Cage tension spring terminals		●	

Approvals and Certificates				
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.			

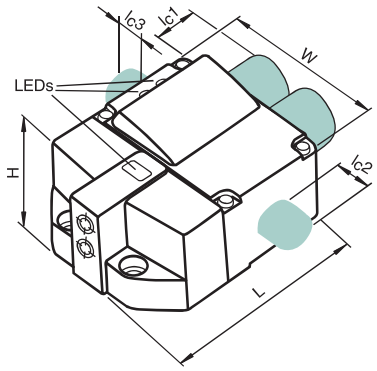
Dimensions			
Length L [mm]	77.5		
Width W [mm]	65		
Height H [mm]	35		
Connector area l_c1 [mm]	10		
Connector area l_c2 [mm]	-	10	
Connector area l_c3 [mm]		-	10

Properties

- F31K housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Terminal compartment
- Connector and cable gland versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



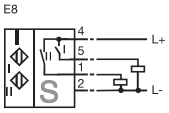
Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

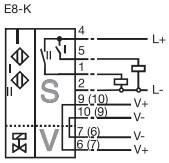
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
VMA-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, Form A on M12, 2+PE, LED, Z diode, PVC cable
VMB-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, Form B on M12, 2+PE, LED, Z diode, PUR cable
VMC-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, model C on M12, 2 + PE, LED, zener diode, PVC cable
VMCI-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, model C (ind) on M12, 2 + PE, LED, zener diode, PVC cable
VMBI-2+P/Z2-0,3M-PVC-V1-W-Y	Valve connector, Form B (Ind) on M12, 2+PE, LED, Z-Diode, PVC cable

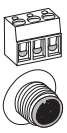
Electrical Connection

NBN3-F31K-E8

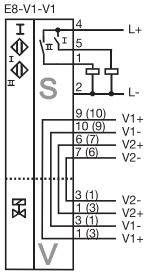


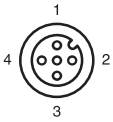
NBN3-F31K-E8-K





NBN3-F31K-E8-V1-V1





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

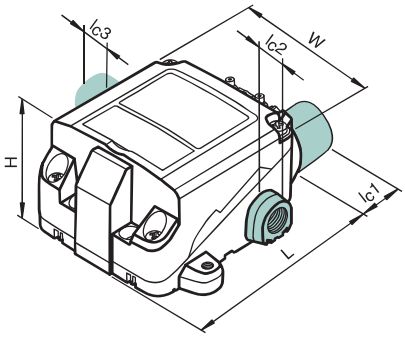
Date of issue 04/08/2015

Properties

- F31K2 housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Terminal compartment
- Versions with connectors for valve control

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130
- Tight sealing and temperature resistance



Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	2.5 mm
Installation	flush mountable
Switching element function	PNP Dual NO
Operating voltage	10 ... 30 VDC
No-load supply current	≤ 25 mA
Reverse polarity protection	✔
Switching frequency	0 ... 100 Hz
Operating current	0 ... 100 mA
Off-state current	0 ... 0.5 mA typ. 0.1 µA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Valve status indication	LED, yellow
Ambient temperature	-40 ... 75 °C (-40 ... 167 °F)
Housing material	PC
Protection degree	IP66 / IP67 / IP69K
Connection (system side)	screw terminal

Model Number		NBN3-F31K2-E8-B13-S	NBN3-F31K2M-E8-B13-S	NBN3-F31K2M-E8-B23-S	NBN3-F31K2-E8-B33-S
Housing base	aluminum		●	●	
	PC	●			●
Thread for cable gland	1/2" - 14 NPT			●	
	M20 x 1.5	●	●		●
Connection (valve side)	4-pin, M12 x 1 socket				●

Approvals and Certificates					
UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.				

Dimensions				
Length L [mm]	106			
Width W [mm]	100			
Height H [mm]	53			
Connector area l_c1 [mm]	depends on the cable gland being used			
Connector area l_c2 [mm]	-	-	-	15
Connector area l_c3 [mm]	-	-	-	15

Accessories

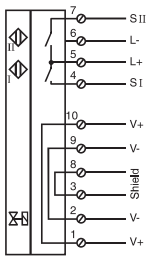
This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

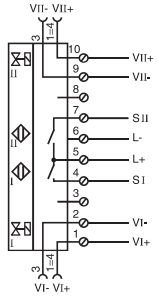
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
BT65-F31K2-RG-EN	Activator for F31K2 series

Electrical Connection

NBN3-F31K2-E8-B13-S
NBN3-F31K2M-E8-B13-S
NBN3-F31K2M-E8-B23-S



NBN3-F31K2-E8-B33-S



Date of issue: 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	programmable
Operating voltage	26.5 ... 31.9 V via AS-i bus system
Switching frequency	0 ... 100 Hz
LED PWR	AS-Interface voltage; LED green
LED IN	switching state (input); LED yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection (system side)	connector M12 x 1, 4-pin

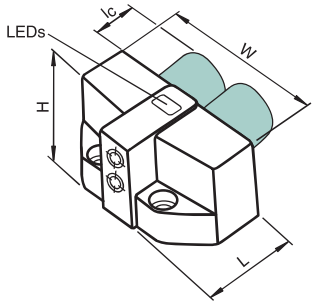
Model Number		NCN3-F31-B3B-V1	NCN3-F31-B3B-V1-K	NCN3-F31-B3B-V1-V1
LED OUT	binary LED yellow/red yellow: switching state red: lead breakage/short-circuit		●	●
Connection (valve side)	0.5 m, PVC cable		●	
	socket connector , M12 x 1 , 4-pin			●
Approvals and Certificates				
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.			
Dimensions				
Length L [mm]			36	
Width W [mm]			65	
Height H [mm]			33.5	
Connector area l_c [mm]		10	12	15

Properties

- F31 housing
- 3 mm, flush mountable
- AS interface
- Cable and connector versions

Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130



Accessories

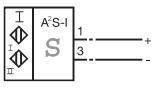
This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets
See pages 1068 ... for mounting aids

BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-G-BK	4-pin, M12 female field-attachable connector

Electrical Connection

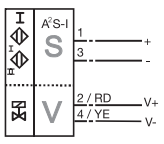
NCN3-F31-B3B-V1

B3B-V1

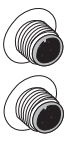


NCN3-F31-B3B-V1-K

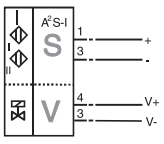
B3B-V1-K

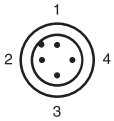


NCN3-F31-B3B-V1-V1



B3B-V1-V1-Y





Date of issue 04/08/2015

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

Model Number	NCN3-F31K-B3B-B31
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	programmable
Operating voltage	26.5 ... 31.9 V via AS-i bus system
Switching frequency	0 ... 100 Hz
LED PWR	AS-Interface voltage; LED green
LED IN	switching state (input); LED yellow
LED OUT	binary LED yellow/red yellow: switching state red: lead breakage/short-circuit
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection (system side)	screw terminals
Connection (valve side)	screw terminals

Approvals and Certificates	
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Dimensions	
Length L [mm]	77.5
Width W [mm]	65
Height H [mm]	35
Connector area l_c1 [mm]	10
Connector area l_c2 [mm]	10

Properties

- F31K housing
- 3 mm, flush mountable
- AS interface
- Terminal compartment

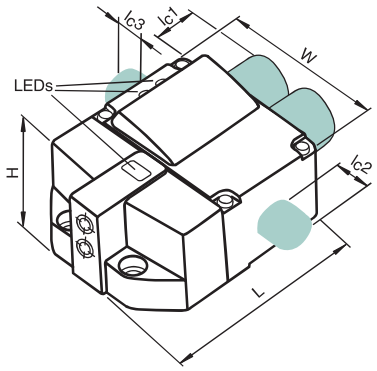
Your Benefit

- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130

Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

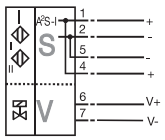
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series
BT65B	Activator for F31 series
BT115B	Activator for F31 series



Electrical Connection

NCN3-F31K-B3B-B31

B3B-V1-K



Date of issue: 04/08/2015

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
Pepperl+Fuchs Group www.pepperl-fuchs.com
USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com
Germany: +49 621 776 4411 fa-info@de.pepperl-fuchs.com
Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com
PEPPERL+FUCHS SENSING YOUR NEEDS

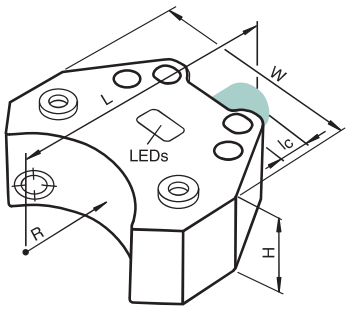
0102 APPROVED

Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual NAMUR interface
- Cable and connector versions

Your Benefit

- EX approval 1G applicable up to zone 0
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80



Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	DC Dual NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 kΩ)
Reverse polarity protection	✔
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 1500 Hz
Suitable for 2:1 technology	✔, Reverse polarity protection diode not required
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number	green = preferred type	NCN3-F25-N4-0,14	NCN3-F25-N4-5M	NCN3-F25F-N4-V1	NCN3-F25-N4-V1
Installation type	compact design for installation in housing and flange installation				●
Connection type	Device connector M12 x 1 , 4-pin			●	●
	cable PVC , 180 mm	●			
	cable PVC , 5 m		●		
Use in the Hazardous Area					
Use in the hazardous area	see instruction manuals	●	●	●	●
Category	1G; 2G; 3G		●	●	
	1G; 2G; 3G; 3D	●			●
Approvals and Certificates					
FM control drawing	116-0165F	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.				
Dimensions					
Length L [mm]		52		62	61
Width W [mm]			52		
Height H [mm]			20		
Connector area l_c [mm]		0		17	9

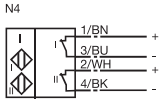
Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

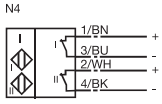
BT32	Activator for F25 series
BT32XS	Activator for F25 series
BT32XAS	Activator for F25 series
BT33	Activator for F25 series
BT34	Activator for F25 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-G-N4-5M-PUR	Female cordset, M12, 4-pin, NAMUR, PUR cable

Electrical Connection

NCN3-F25-N4-0,14
NCN3-F25-N4-5M



NCN3-F25F-N4-V1
NCN3-F25-N4-V1



Date of issue 04/08/2015

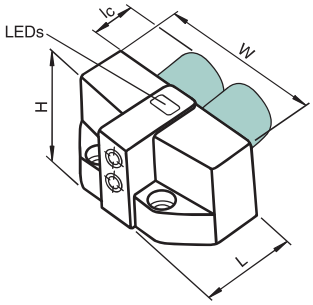
0102

Properties

- F31 housing
- 3 mm, flush mountable
- DC, dual NAMUR interface
- Cable and connector versions

Your Benefit

- EX approval 1G applicable up to zone 0
- Usable up to SIL2 acc. to IEC 61508
- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80



Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

General Data	
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	NAMUR, binary NC
Type of voltage	DC
Nominal voltage	8 V
Reverse polarity protection	✔
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 3 kHz
Suitable for 2:1 technology	✔, Reverse polarity protection diode not required
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 158 °F)
Housing material	PBT

Model Number	green = preferred type	NCN3-F31-N4-K	NCN3-F31-N4-K-K	NCN3-F31-N4-V16-K	NCN3-F31-N4-V1	NCN3-F31-N4-V18	NCN3-F31-N4-V16-V16	NCN3-F31-N5-V18-V1
Valve status indication	LED, yellow		●	●			●	●
Protection degree	IP66 / IP67	●						
	IP67		●	●	●	●	●	●
Connection (system side)	Device connector M12 x 1 , 4-pin				●			
	Device connector M18 x 1 , 4-pin					●		●
	Device connector Rd24 x 1/8 , 7-pin			●			●	
	PVC cable , 5 m	●	●					
Connection (valve side)	4-pin, M12 x 1 socket							●
	socket connector Rd24 x 1/8 , 7-pin						●	
	PVC cable , 0.5 m		●	●				
Use in the Hazardous Area								
Use in the hazardous area	see instruction manuals	●	●	●	●	●	●	●
Category	1G; 2G							●
	1G; 2G; 3G	●	●	●	●	●	●	
Approvals and Certificates								
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.							
Dimensions								
Length L [mm]		36						
Width W [mm]		65						
Height H [mm]		33.5						
Connector area l_c [mm]		16	28	28	10	22	28	22

Accessories

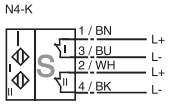
This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

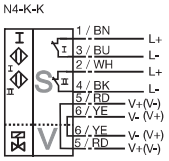
BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series

Electrical Connection

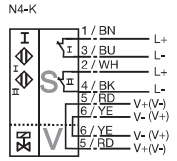
NCN3-F31-N4-K



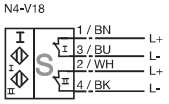
NCN3-F31-N4-K-K



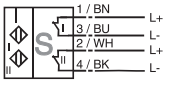
NCN3-F31-N4-V16-K



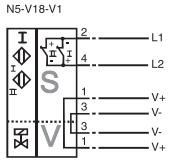
NCN3-F31-N4-V18



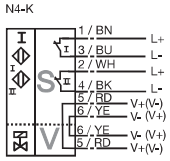
NCN3-F31-N4-V1



NCN3-F31-N5-V18-V1



NCN3-F31-N4-V16-V16



Date of issue: 04/08/2015

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
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PEPPERL+FUCHS SENSING YOUR NEEDS

0102

Properties

- F31K housing
- 3 mm, flush mountable
- DC, dual NAMUR interface
- Terminal compartment and connector versions

Your Benefit

- EX approval 1G applicable up to zone 0
- Usable up to SIL2 acc. to IEC 61508
- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80 and 30 x 130

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

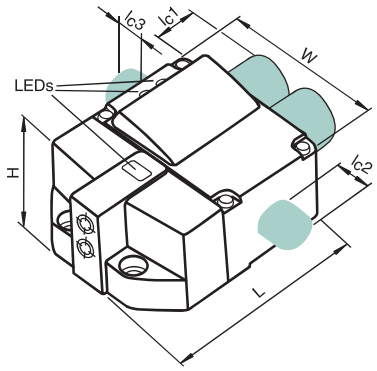
General Data	
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	DC Dual NC
Nominal voltage	8.2 V (R_i approx. 1 kΩ)
Reverse polarity protection	✔
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 3 kHz
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number	green = preferred type	NCN3-F31K-N4	NCN3-F31K-N4-K	NCN3-F31K-N4-K-S	NCN3-F31K-N4-S	NCN3-F31K-N4-V1-V1
Suitable for 2:1 technology	✔, Reverse polarity protection diode not required	●	●			●
Valve status indication	LED, yellow		●	●		●
Connection (system side)	Cage tension spring terminals	●	●			●
	Screw terminals, tightening torque min. 0.5Nm Stripped length 7 mm			●	●	
Connection (valve side)	4-pin, M12 x 1 socket					●
	Cage tension spring terminals		●			
	like connection (system side)			●		

Use in the Hazardous Area						
Use in the hazardous area	see instruction manuals	●	●	●	●	●
Category	1G; 2G; 3G	●	●	●	●	●

Approvals and Certificates						
UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.					

Dimensions						
Length L [mm]	77.5					
Width W [mm]	65					
Height H [mm]	35					
Connector area l_c1 [mm]	10					
Connector area l_c2 [mm]		-	10	10	-	10
Connector area l_c3 [mm]		-	-	-	-	10



Accessories

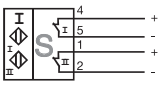
This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets
See pages 1068 ... for mounting aids

BT65A	Activator for F31 series
BT65X	Activator for F31 series
BT115A	Activator for F31 series
BT115X	Activator for F31 series

Electrical Connection

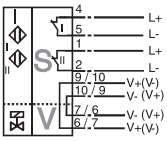
NCN3-F31K-N4
NCN3-F31K-N4-S

N4



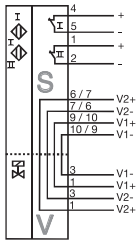
NCN3-F31K-N4-K
NCN3-F31K-N4-K-S

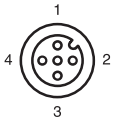
N4-K



NCN3-F31K-N4-V1-V1

N4-V1-V1





Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Date of issue 04/08/2015

Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual NAMUR safety interface
- Cable and connector versions

Your Benefit

- EX approval 1G applicable up to zone 0
- Usable up to SIL3 acc. to IEC 61508
- LED indicators for switching state and valve output
- Direct mounting without additional mounting aids on NAMUR bore holes 30 x 80

Technical Data

*For detailed data and product description refer to the data sheets at **www.pepperl-fuchs.com***

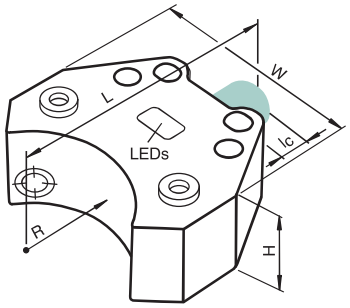
General Data	
Rated operating distance	3 mm
Installation	flush mountable
Switching element function	DC Dual NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 1500 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number		NCN3-F25-SN4-0,14	NCN3-F25-SN4-5M	NCN3-F25-SN4-V1
Connection type	Device connector M12 x 1 , 4-pin			●
	cable PVC , 180 mm	●		
	cable PVC , 5 m		●	
Use in the Hazardous Area				
Use in the hazardous area	see instruction manuals	●	●	●
Category	1G; 2G; 3G	●	●	●
Approvals and Certificates				
FM control drawing	116-0165F	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.			
Dimensions				
Length L [mm]		52	52	61
Width W [mm]			52	
Height H [mm]			20	
Connector area I_c [mm]		0	0	9

Accessories

This and more accessories can be found in chapter 10
See pages from 972 ... for cordsets
See pages 1068 ... for mounting aids

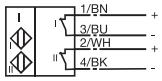
BT32	Activator for F25 series
BT32XS	Activator for F25 series
BT32XAS	Activator for F25 series
BT33	Activator for F25 series
BT34	Activator for F25 series
V1-G-BK	4-pin, M12 female field-attachable connector
V1-G-N4-5M-PUR	Female cordset, M12, 4-pin, NAMUR, PUR cable



Electrical Connection

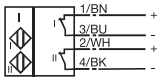
NCN3-F25-SN4-0,14
NCN3-F25-SN4-5M

N4



NCN3-F25-SN4-V1

N4



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Actuator, Mounting Sets, and Brackets for Position Feedback Sensors (-F25 Series)

Mounting set [1]	Shaft diameter [2]	Shaft height	Mounting hole pattern	Includes: Actuator	Includes: Bracket	Fig.
BT32-F25-0	< 34 mm	20 mm	30 mm x 80 mm	BT32	–	1
BT33-F25-0	< 34 mm	30 mm	30 mm x 80 mm	BT33	–	3
BT34-F25-2	preferably > 34 mm	20/30 mm	30 mm x 80 mm	BT34	K2	2
BT34-F25-3	preferably > 34 mm	30 mm	30 mm x 130 mm	BT34	K3	4
BT34-F25-4	preferably > 34 mm	50 mm	30 mm x 130 mm	BT34	K4	5
MH5-F25-Y43089	< 34 mm	20/30 mm	30 mm x 130 mm	–	Metal plate	6
MH20-F25-Y43090	Height compensation for additionally mounted regulator			–	F25 fully encapsulated	7

[1] Includes mounting screws for the respective double sensor
[2] If the ring is higher than 3 mm, the height of the snap ring is the determining factor rather than the shaft diameter.

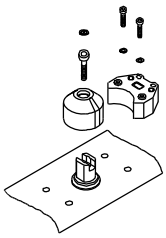
Fig. 1

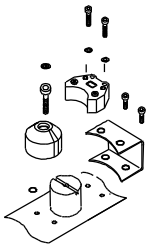
Fig. 2

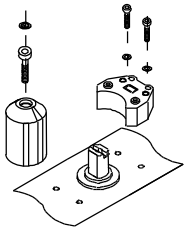
Fig. 3

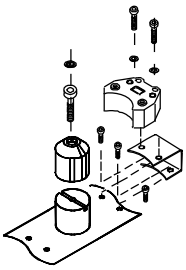
Fig. 4

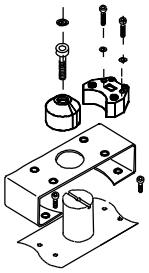
Fig. 5

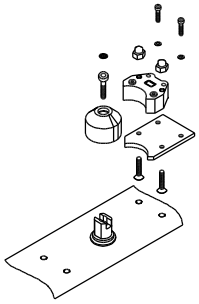
Fig. 6

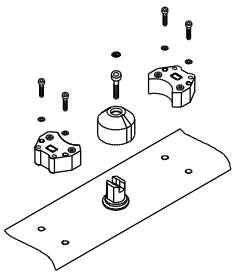
Fig. 7

Individual part	Shaft diameter	Shaft height	Number of switching targets	Notes	Fig.
Actuator [3]					
BT32	≤ 34 mm	20 mm	2	Active height: 28 mm	8
BT32XS	≤ 34 mm	20 mm	1	As per BT32, with reverse-direction operation	9
BT32XAS	≤ 34 mm	20 mm	2	As per BT32, with reverse-direction operation	9
BT33	≤ 34 mm	30 mm	2	Active height: 38 mm	10
BT34	≥ 34 mm	≥ 20 mm	2	Active height: 28 mm, sitting on the drive shaft	11
BT37	≥ 34 mm	20 mm	1	Actuator BT37 with 4 mm groove for mounting on regulator	–
Bracket					
K2	–	–	–	Mounting hole pattern 30 mm x 80 mm	2

[1] Actuator without mounting screws for the respective double sensor

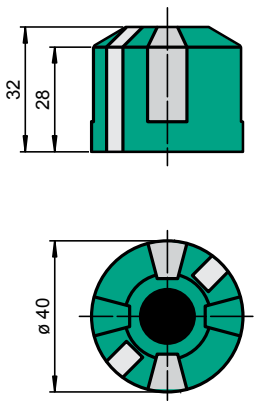

Fig. 8

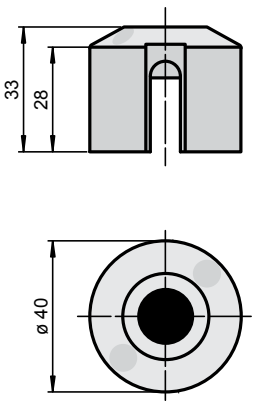

Fig. 9

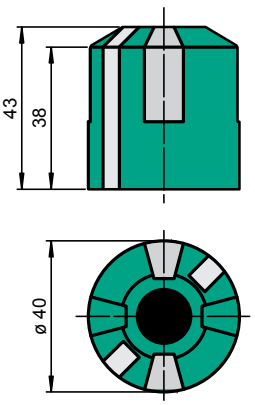

Fig. 10

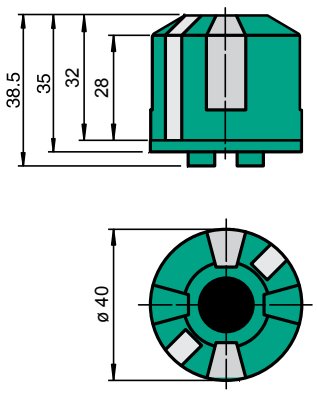

Fig. 11

Actuators for the -F31 / F31K2 Series with Fixed Switching Positions

The following actuators are made out of conductive plastic that prevents build-up of electrostatic charge and therefore can be used in hazardous areas. The sheathing surface of the BT65X and BT115X actuators is made out of stainless steel (V2A) with openings at the actuating positions. This results in an inverted operating principle.

Actuator	Drive shaft diameter	Shaft height	Mounting hole pattern	Notes	Illustration
BT65A	< 58 mm	20 mm and 30 mm	30 mm x 80 mm	Snap ring diameter max. 65 mm, Snap ring height max. 6 mm. For right and left rotating drives with 90°/180° rotation.	
BT65X					
BT115A	< 90 mm	30 mm and 50 mm	30 mm x 130 mm	Snap ring diameter max. 110 mm, Snap ring height max. 7 mm. For right and left rotating drives with 90°/180° rotation.	
BT115X					

Actuators for the -F31 / F31K2 Series with Adjustable Switching Positions

Actuator	Drive shaft diameter	Shaft height	Mounting hole pattern	Notes	Illustration
BT65B	< 58 mm	20 mm and 30 mm *)	30 mm x 80 mm	Snap ring diameter max. 65 mm, snap ring height max. 6 mm	
BT65-F31K2-RG-EN	< 49 mm	20 mm and 30 mm	30 mm x 80 mm	Adjustable in 5° steps, clearly visible colored indicators. Comes with protection hood.	
BT115B	< 90 mm	30 mm and 50 mm	30 mm x 130 mm	Snap ring diameter max. 110 mm, snap ring height max. 7 mm	

*) 30 mm using MH-BT65B mounting base

MH-BT65B Mounting Base

MH-BT65B

Adapter plate for using BT65B actuators on drives with:
hole dimension 80 mm x 30 mm
hole dimension 130 mm x 30 mm
and drive shaft height 30 mm

Consider the General Notes on the Information in the Pepperl+Fuchs Product Catalogs
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Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com
PEPPERL+FUCHS SENSING YOUR NEEDS

Assembly set with switch plate for mounting of inductive valve sensors on manual operated valves acc. to ISO5211-DIN3337.
The assembly set includes a 2-parts mounting bracket with switch plate, a driver stem and a lock nut.

Properties

- Simple mounting
- Conforming to standards
- Adjustable in height
- Adjustable shaft extension

Your Benefit

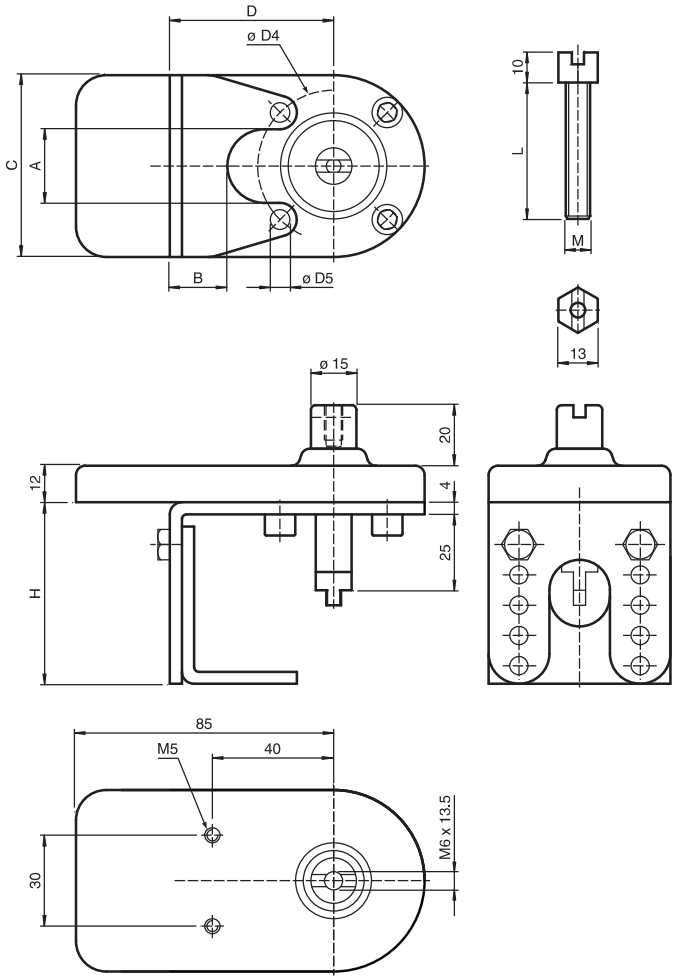
- Suitable for use in hazardous areas due to conductive material
- Sturdy holder consisting of stainless steel and Vestamid
- Easy standard installation acc. to ISO5211-DIN3337

Technical Data

For detailed data and product description refer to the data sheets at ***www.pepperl-fuchs.com***

General Data	
Suitable sensors	Double sensor, -F25 series with actuator BT32... Double sensor, -F31 series with actuator BT65A Double sensor, -F31K series with actuator BT65A
Material	Mounting bracket and nut: stainless steel 1.4301 Tappet and shaft: Stainless steel 1.4305 / AISI 303 (V2A) Sensor plate: Vestamid (PA 12), conductive

Model Number		MH-BT-F03-M5	MH-BT-F04-M5	MH-BT-F04-M6	MH-BT-F05-M5	MH-BT-F05-M6	MH-BT-F07-M5	MH-BT-F07-M6	MH-BT-F07-M8	MH-BT-F10-M8	MH-BT-F10-M10	MH-BT-F10-M12	MH-BT-F12-M10
Dimensions													
A	[mm]	16	20.7	20.7	24.36	24.36	34.36	34.5	34.5	52.12	52.12	52.12	66.39
B	[mm]	20	20	20	15	15	15	15	15	15	15	15	15
C	[mm]	60	60	60	60	60	64.5	64.5	64.5	93	93	93	111
D	[mm]	54	54	54	54	54	54	54	54	74	74	74	74
Ø D4	[mm]	36	42	42	50	50	70	70	70	102	102	102	125
Ø D5	[mm]	5.3	5.3	5.3	6.5	6.5	8.5	8.5	8.5	11	11	11	13
H		60 mm / 70 mm / 80 mm / 90 mm / 100 mm, adjustable								80 mm / 90 mm / 100 mm / 110 mm / 120 mm, adjustable			
L	[mm]	25	25	50	25	50	25	50	45	45	60	50	60
M	[mm]	5	5	6	5	6	5	6	8	8	10	12	10



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