

Sensors and Systems

Edition 3.0



Your automation, our passion.

pf PEPPERL+FUCHS



Technical Data

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

General Data

Installation	flush
Type of voltage	DC
Operating current	2 ... 100 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Protection degree	IP67

Model Number

Rated operating distance	2 mm	green = preferred type	NBB2-12GM40-Z0	NCB2-12GM40-Z0	NCB2-12GM40-Z1	NCB4-12GM35-Z4	NCB4-12GM35-Z5	NBB2-12GM40-Z0-V1	NCB2-12GM40-Z0-V1	NCB2-12GM40-Z1-V1	NCB4-12GM40-Z4-V1	NCB4-12GM40-Z5-V1
Switching element function	DC NO		●	●	●	●	●	●	●	●	●	●
	DC NC											
Operating voltage	3.5 ... 30 V		●	●	●	●	●	●	●	●	●	●
	5 ... 60 V											
Reverse polarity protection	conducting tolerant		●	●	●	●	●	●	●	●	●	●
Switching frequency	0 ... 800 Hz		●	●	●	●	●	●	●	●	●	●
	0 ... 1000 Hz											
Pre-fault indication	LED, red											
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)											
Housing material	Stainless steel 1.4305 / AISI 303			●	●	●	●		●	●	●	●
	brass, nickel-plated		●			●	●	●			●	●
Connection type	Device connector M12 x 1, 4-pin							●	●	●	●	●
	cable PUR, 2 m		●	●	●	●	●					
	cable PVC, 2 m											

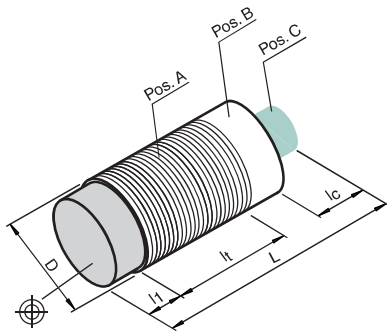
Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●	●	●	●

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]	40	35	55
Diameter D [mm]		12	
Thread length l _t [mm]	37	32	39
Cap length l ₁ [mm]		0	
Connector area l _c [mm]	0		6
LED position			Pos. C



Accessories

This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

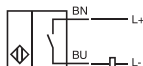
See pages 1068 ... for mounting aids

BF 12	Mounting flange, 12 mm
EXG-12	Quick mounting bracket with dead stop
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-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

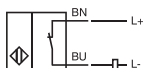
Electrical Connection



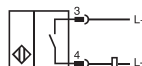
NBB2-12GM40-Z0
NCB2-12GM40-Z0
NCB4-12GM35-Z4



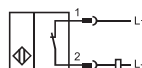
NCB2-12GM40-Z1
NCB4-12GM35-Z5



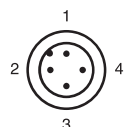
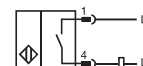
NBB2-12GM40-Z0-V1
NCB2-12GM40-Z0-V1



NCB2-12GM40-Z1-V1
NCB4-12GM40-Z5-V1



NCB4-12GM40-Z4-V1



Wire colors in accordance with EN 60947-5-2

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

Inductive sensor

cylindrical, Ø 12 mm

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Proximity Sensors, Inductive Sensors, cylindrical

Properties

- Ø12 mm housing
4 mm and 8 mm, non-flush mountable versions
DC, 2-wire switching output
Cable and connector versions

Technical Data

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

General Data

Installation non-flush
Type of voltage DC
Operating current 2 ... 100 mA
Short-circuit protection pulsing
Indication of the switching state LED, yellow
Protection degree IP67

Model Number

Table with columns for model numbers (NBN4-12GM40-Z0, NCN4-12GM40-Z0, etc.) and rows for technical specifications like Rated operating distance, Switching element function, Operating voltage, etc.

Approvals and Certificates

UL approval cULus Listed, General Purpose
CSA approval cCSAus Listed, General Purpose
CCC approval Certified by China Compulsory Certification (CCC)

Dimensions

Table with columns for dimensions (Length L, Diameter D, Thread length lt, Cap length l1, Connector area lc, LED position) and rows for different model series.

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

List of accessories: BF 12 (Mounting flange, 12 mm), 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

Wiring diagrams for models NBN4-12GM40-Z0, NCN4-12GM40-Z0, NCN8-12GM35-Z4, NCN4-12GM40-Z1, and NCN8-12GM40-Z5-V1.

Wiring diagrams for models NBN4-12GM40-Z0-V1, NCN4-12GM40-Z0-V1, NCN8-12GM40-Z4-V1, NCN4-12GM40-Z1-V1, and NCN8-12GM40-Z5-V1. Includes a 4-pin connector diagram and a color code table (BN, WH, BU, BK) according to EN 60947-5-2.

60

Refer to "General Notes Relating to Pepperl+Fuchs Product Information". USA: +1 330 486 0001. Germany: +49 621 776 4411. Singapore: +65 6779 9091. www.pepperl-fuchs.com

PEPPERL+FUCHS SENSING YOUR NEEDS

Date of issue: 04/08/2015



Properties

- Ø12 mm housing
- 2 mm, flush and 4 mm, non-flush mountable versions
- DC, 3-wire switching output
- Cable version

Technical Data

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

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 17 mA
Reverse polarity protection	✓
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68 / IP69K
Connection type	cabl PVC , 2 m



Model Number

		NBB2-12GK50-E0	NBB2-12GK50-E2	NBN4-12GK50-E0	NBN4-12GK50-E2
Rated operating distance	2 mm	●	●		
	4 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Switching element function	NPN NO	●		●	
	PNP NO		●		●
Switching frequency	0 ... 1200 Hz			●	●
	0 ... 1500 Hz	●	●		

Approvals and Certificates

		NBB2-12GK50-E0	NBB2-12GK50-E2	NBN4-12GK50-E0	NBN4-12GK50-E2
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

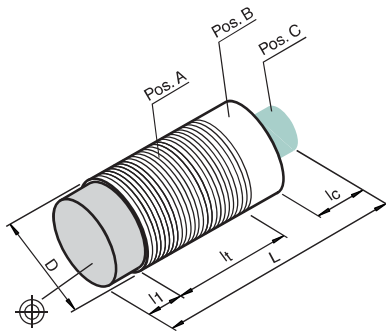
Length L [mm]	50
Diameter D [mm]	12
Thread length l _t [mm]	40
Cap length l ₁ [mm]	1
Connector area l _c [mm]	0
LED position	Pos. C

Accessories

This and more accessories can be found in chapter 10

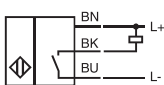
BF 12

Mounting flange, 12 mm

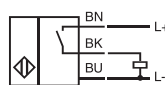


Electrical Connection

NBB2-12GK50-E0
NBN4-12GK50-E0



NBB2-12GK50-E2
NBN4-12GK50-E2



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

Technical Data

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

General Data

Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68
Connection type	cablE PUR , 2 m



Properties

- Ø12 mm plastic housing
- 2 mm, flush and 4 mm, non-flush mountable versions
- DC, 3-wire switching output
- Cable version

Model Number

		NJ2-12GK40-E	NJ2-12GK40-E1	NJ2-12GK40-E2	NJ2-12GK40-E3	NJ4-12GK40-E	NJ4-12GK40-E1	NJ4-12GK40-E2	NJ4-12GK40-E3
Rated operating distance	2 mm	●	●	●	●				
	4 mm					●	●	●	●
Installation	flush	●	●	●	●				
	non-flush					●	●	●	●
Switching element function	NPN	●							
	NO		●						
	NC			●					
	PNP				●				
Switching frequency	0 ... 2000 Hz				●	●	●	●	●
	0 ... 3000 Hz	●	●	●	●				

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]		40	40
Diameter D [mm]			12
Thread length l _t [mm]		35	35
Cap length l ₁ [mm]			1
Connector area l _c [mm]			0

Accessories

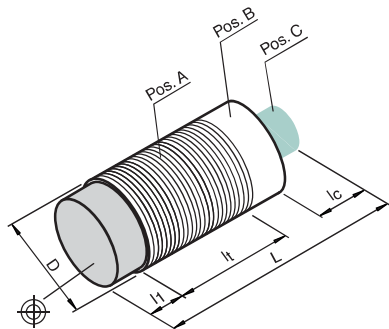
This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

BF 12

Mounting flange, 12 mm



Electrical Connection

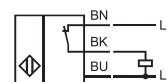
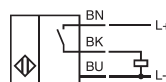
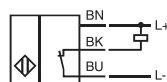
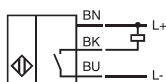


NJ2-12GK40-E
NJ4-12GK40-E

NJ2-12GK40-E1
NJ4-12GK40-E1

NJ2-12GK40-E2
NJ4-12GK40-E2

NJ2-12GK40-E3
NJ4-12GK40-E3





Technical Data

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

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 60 V
Reverse polarity protection	✓
Switching frequency	0 ... 3000 Hz
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Model Number

			NJ2-12GM40-E	NJ2-12GM40-E2	NJ2-12GM40-E3	NJ2-12GM40-E-V1	NJ2-12GM40-E2-V1	NJ2-12GM40-E3-V1
Switching element function	NPN	NO	●			●		
	PNP	NO		●			●	
	PNP	NC			●			●
No-load supply current	≤ 11 mA		●	●		●	●	●
	≤ 15 mA				●			●
Connection type	Device connector M12 x 1, 4-pin		●	●	●	●	●	●
	cable PUR, 2 m							

Approvals and Certificates

		NJ2-12GM40-E	NJ2-12GM40-E2	NJ2-12GM40-E3	NJ2-12GM40-E-V1	NJ2-12GM40-E2-V1	NJ2-12GM40-E3-V1
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●

Dimensions

		NJ2-12GM40-E	NJ2-12GM40-E2	NJ2-12GM40-E3
Length L [mm]		40		50
Diameter D [mm]			12	
Thread length l _t [mm]		40		50
Cap length l ₁ [mm]			0	
Connector area l _c [mm]			0	
LED position			Pos. A	

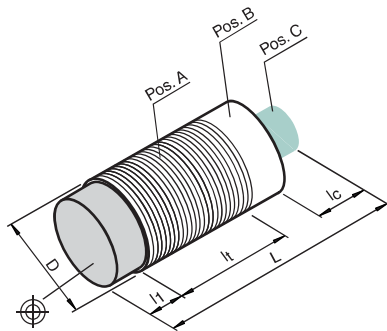
Accessories

This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

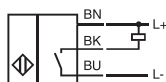
- BF 12** Mounting flange, 12 mm
- EXG-12** Quick mounting bracket with dead stop
- V1-G-BK** 4-pin, M12 female field-attachable connector
- V1-W-BK** 4-pin, M12 female field-attachable connector
- V1-G-2M-PUR** Cable socket, M12, 4-pin, PUR cable
- V1-W-2M-PUR** Cable socket, M12, 4-pin, PUR cable



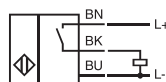
Electrical Connection



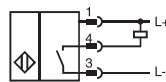
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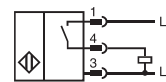
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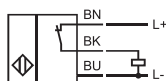
NJ2-12GM40-E-V1



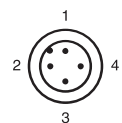
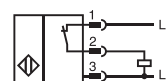
NJ2-12GM40-E2-V1



NJ2-12GM40-E3



NJ2-12GM40-E3-V1



Wire colors in accordance with EN 60947-5-2

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

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Proximity Sensors, Inductive Sensors, cylindrical



Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

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

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB2-12GM30-E2	NBB2-12GM40-E0	NBB2-12GM40-E1	NBB2-12GM40-E2	NBB2-12GM40-E3	NBB2-12GM30-E2-V1	NBB2-12GM40-E0-V1	NBB2-12GM40-E2-V1
Switching element function	NPN	NO		●					●	
	NPN	NC			●					
	PNP	NO	●			●		●		●
	PNP	NC					●			
Switching frequency	0 ... 1000 Hz			●	●	●	●		●	●
	0 ... 800 Hz		●					●		
Operating current	0 ... 100 mA		●	●	●	●	●		●	●
	0 ... 200 mA		●					●	●	●
Connection type	Device connector M12 x 1 , 4-pin		●	●	●	●	●	●	●	●
	cable PVC , 2 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.									

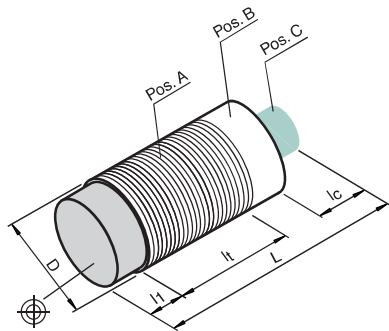
Dimensions

Length L [mm]	30	40	45	50
Diameter D [mm]			12	
Thread length l _t [mm]	27	37	30	50
Cap length l ₁ [mm]			0	
Connector area l _c [mm]		0		6
LED position			Pos. C	

Accessories

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

- BF 12** Mounting flange, 12 mm
- EXG-12** Quick mounting bracket with dead stop
- 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

NBB2-12GM40-E0

NBB2-12GM30-E2
NBB2-12GM40-E2

NBB2-12GM40-E1

NBB2-12GM40-E3

NBB2-12GM40-E0-V1

NBB2-12GM30-E2-V1
NBB2-12GM40-E2-V1

Wire colors in accordance with EN 60947-5-2

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



Technical Data

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

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB2-12GM50-E0	NBB2-12GM50-E1	NBB2-12GM50-E2	NBB2-12GM60-A0	NBB2-12GM60-A2	NBB2-12GM50-E0-V1	NBB2-12GM50-E1-V1	NBB2-12GM50-E2-V1	NBB2-12GM60-E2-V1	NBB2-12GM60-A0-V1	NBB2-12GM60-A2-V1
Switching element function	NPN NO/NC	●					●					
	NPN NO		●					●				
	NPN NC			●					●			
	PNP NO/NC					●						●
	PNP NO									●		●
	No-load supply current	≤ 15 mA										
Switching frequency	≤ 20 mA	●	●	●	●	●	●	●	●	●	●	●
	0 ... 1000 Hz	●	●	●	●	●	●	●	●	●	●	●
Indication of the switching state	0 ... 1500 Hz	●	●	●	●	●	●	●	●	●	●	●
	LED, yellow	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)								●			
Connection type	Device connector M12 x 1, 4-pin	●	●	●	●	●	●	●	●	●	●	●
	cable PVC, 2 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]	50	50	50	60	60	65	65	65	70	70	70
Diameter D [mm]						12					
Thread length l _t [mm]	50	50	50	60	60	50	50	50	40	70	70
Cap length l ₁ [mm]						0					
Connector area l _c [mm]						0	6	10	0		
LED position	Pos.:	C	C	C	C	C	C	C	-	C	C

Accessories

This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

BF 12	Mounting flange, 12 mm
EXG-12	Quick mounting bracket with dead stop
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



Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire and 4-wire switching output versions
- Cable and connector versions

Further Products

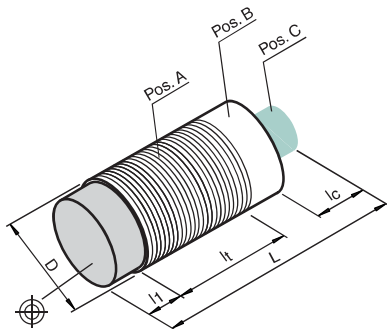
In this series, we offer additionally:

NBB2-12GM60-E2-T

Technical data similar to NBB2-12GM50-E2 but:
 Operating voltage: 10 ... 65 V
 No-load supply current: ≤ 10 mA
 Operating current: 0 ... 300 mA
 Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)

NBB2-12GM50-E2-T-V1

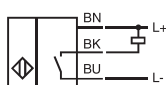
Technical data similar to NBB2-12GM50-E2-V1 but:
 Operating voltage: 10 ... 65 V
 No-load supply current: ≤ 10 mA
 Operating current: 0 ... 300 mA
 Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)



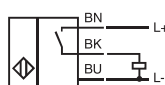
Electrical Connection



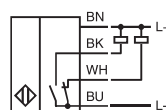
NBB2-12GM50-E0



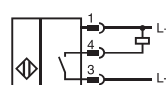
NBB2-12GM50-E2
NBB2-12GM60-E2-T



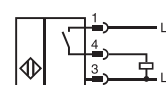
NBB2-12GM60-A0



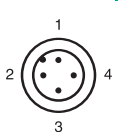
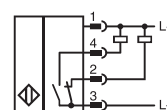
NBB2-12GM50-E0-V1



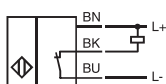
NBB2-12GM60-E2-V1
NBB2-12GM50-E2-T-V1
NBB2-12GM50-E2-V1



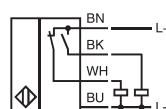
NBB2-12GM60-A0-V1



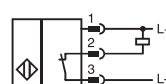
NBB2-12GM50-E1



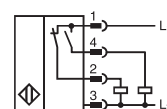
NBB2-12GM60-A2



NBB2-12GM50-E1-V1



NBB2-12GM60-A2-V1



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Proximity Sensors, Inductive Sensors, cylindrical



Technical Data

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

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 2000 Hz
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Model Number

			NJ4-12GM40-E	NJ4-12GM40-E1	NJ4-12GM40-E2	NJ4-12GM40-E3	NJ4-12GM40-E-V1	NJ4-12GM40-E2-V1	NJ4-12GM40-E3-V1
Switching element function	NPN	NO	●				●		
	NPN	NC		●					
	PNP	NO			●			●	
	PNP	NC				●			●
Connection type	Device connector M12 x 1 , 4-pin			●	●	●	●	●	●
	cable PUR , 2 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]		40	50
Diameter D [mm]			12
Thread length l _t [mm]		35	45
Cap length l ₁ [mm]			5
Connector area l _c [mm]			0
LED position			Pos. A

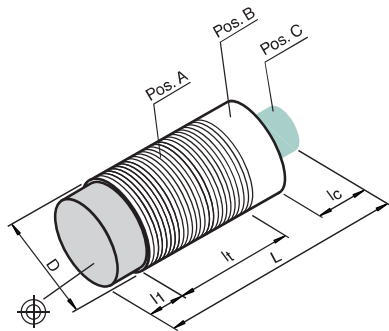
Accessories

This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

- BF 12** Mounting flange, 12 mm
- 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

NJ4-12GM40-E

NJ4-12GM40-E1

NJ4-12GM40-E2

NJ4-12GM40-E3

NJ4-12GM40-E-V1

NJ4-12GM40-E2-V1

NJ4-12GM40-E3-V1

Wire colors in accordance with EN 60947-5-2

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



Technical Data

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

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

	green = preferred type	NBB4-12GM30-E2	NBB4-12GM30-E3	NBB4-12GM40-E0	NBB4-12GM40-E2	NBB4-12GM30-E2-V3	NBB4-12GM30-E2-V1	NBB4-12GM30-E3-V1
Switching element function	NPN NO PNP NO PNP NC	•	•	•	•	•	•	•
No-load supply current	≤ 15 mA ≤ 20 mA	•	•	•	•	•	•	•
Switching frequency	0 ... 1000 Hz 0 ... 800 Hz	•	•	•	•	•	•	•
Operating current	0 ... 150 mA 0 ... 200 mA	•	•	•	•	•	•	•
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F) -40 ... 80 °C (-40 ... 176 °F) -40 ... 85 °C (-40 ... 185 °F)	•	•	•	•	•	•	•
Connection type	Device connector M12 x 1, 4-pin Device connector M8 x 1, 3-pin cable PVC, 2 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]	30	40	44	45
Diameter D [mm]		12		
Thread length l _t [mm]	27	37	35	30
Cap length l ₁ [mm]		0		
Connector area l _c [mm]		0	9	6
LED position			Pos. C	

Accessories

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

BF 12	Mounting flange, 12 mm
EXG-12	Quick mounting bracket with dead stop
V3-GM-2M-PUR	Cable socket, M8, 3-pin, PUR cable
V1-G-2M-PUR H/S	Female cordset, M12, 4-pin, irradiated PUR cable
V1-G-BK	4-pin, M12 female field-attachable connector
V3-WM-2M-PUR	Cable socket, M8, 3-pin, PUR cable
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable

Properties

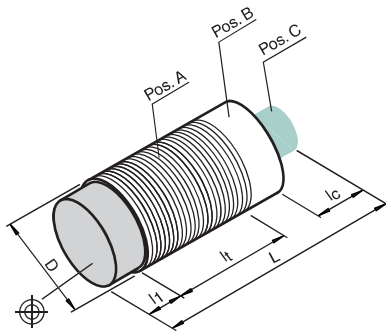
- Ø12 mm housing
- 4 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Further Products

In this series, we offer additionally:

NBB4-12GM30-E2-T-V1

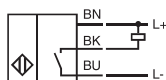
Technical data similar to NBB4-12GM30-E2-V1 but:
Operating current: 0 ... 100 mA
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)



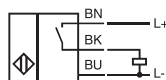
Electrical Connection



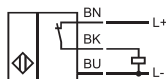
NBB4-12GM40-E0



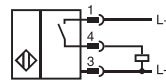
NBB4-12GM40-E2
NBB4-12GM30-E2



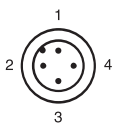
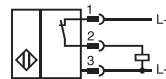
NBB4-12GM30-E3



NBB4-12GM30-E2-T-V1
NBB4-12GM30-E2-V1
NBB4-12GM30-E2-V3



NBB4-12GM30-E3-V1



Wire colors in accordance with EN 60947-5-2

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

Technical Data

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

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 800 Hz
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Protection degree	IP67

Model Number

		green = preferred type	NBB4-12GM50-E0	NBB4-12GM50-E1	NBB4-12GM50-E2	NBB4-12GM50-E3	NBB4-12GM50-E0-V1	NBB4-12GM50-E1-V1	NBB4-12GM50-E2-V1	NBB4-12GM50-E3-V1	NCB4-12GM50-E2-V1
Switching element function	NPN NO		●				●				
	NPN NC			●				●			
	PNP NO				●				●		●
	PNP NC					●				●	
	PNP NC						●				
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)								●		
Housing material	Stainless steel 1.4305 / AISI 303		●	●	●	●	●	●	●	●	●
	brass, nickel-plated		●	●	●	●	●	●	●	●	●
Connection type	Device connector M12 x 1, 4-pin		●	●	●	●	●	●	●	●	●
	cable PVC, 2 m		●	●	●	●					

Properties

- Ø12 mm housing
- 4 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Approvals and Certificates

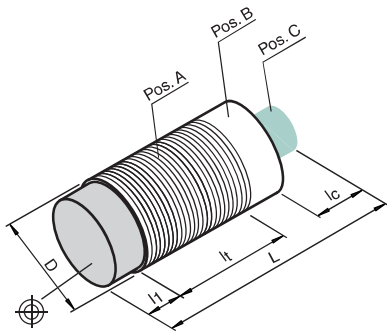
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.										

Dimensions

Length L [mm]	50	65
Diameter D [mm]		12
Thread length l _t [mm]	47	49
Cap length l ₁ [mm]		0
Connector area l _c [mm]	0	6
LED position		Pos. C

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

V1-G-BK	4-pin, M12 female field-attachable connector
BF 12	Mounting flange, 12 mm
V1-W-BK	4-pin, M12 female field-attachable connector
EXG-12	Quick mounting bracket with dead stop
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable



Electrical Connection

<p>NBB4-12GM50-E0</p>	<p>NBB4-12GM50-E2</p>	<p>NBB4-12GM50-E0-V1</p>	<p>NCB4-12GM50-E2-V1 NBB4-12GM50-E2-V1</p>	<p>1 2 3 4</p> <p>Wire colors in accordance with EN 60947-5-2</p> <p>1 BN (brown) 2 WH (white) 3 BU (blue) 4 BK (black)</p>
<p>NBB4-12GM50-E1</p>	<p>NBB4-12GM50-E3</p>	<p>NBB4-12GM50-E1-V1</p>	<p>NBB4-12GM50-E3-V1</p>	

Proximity Sensors, Inductive Sensors, cylindrical

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Technical Data

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

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 4 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Further Products

In this series, we offer additionally:

NBB4-12GM30-E2-V3

Technical data like NBB4-12GM30-E2-V1 but:
Connection type: Device connector M8 x 1 , 3-pin

Model Number

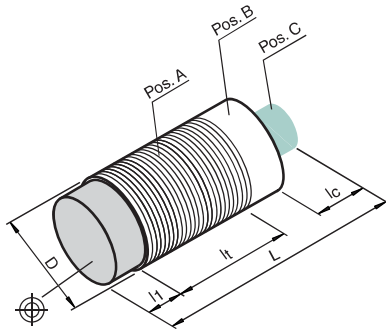
			NBB4-12GM30-E2	NBB4-12GM30-E3	NBB4-12GM50-E0	NBB4-12GM50-E1	NBB4-12GM50-E2	NBB4-12GM50-E3	NBB4-12GM50-A2	NBB4-12GM30-E2-V1	NBB4-12GM30-E3-V1	NBB4-12GM50-E0-V1	NBB4-12GM50-E1-V1	NBB4-12GM50-E2-V1	NBB4-12GM50-E3-V1	NBB4-12GM50-A2-V1
Switching element function	green = preferred type															
	NPN NO		●								●					
	NPN NC				●							●				
	PNP NO		●			●				●			●			
	PNP NC			●					●			●				
No-load supply current	≤ 15 mA		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	≤ 20 mA															
Switching frequency	0 ... 800 Hz				●											
	0 ... 1000 Hz		●							●						
	0 ... 1500 Hz								●							
Operating current	0 ... 150 mA		●							●						
	0 ... 200 mA				●							●				
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)													●		
Connection type	Device connector M12 x 1 , 4-pin		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	cable PVC , 2 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]	30	50	45	65
Diameter D [mm]			12	
Thread length l _t [mm]	27	47	30	49
Cap length l ₁ [mm]			0	
Connector area l _c [mm]		0		6
LED position			Pos. C	

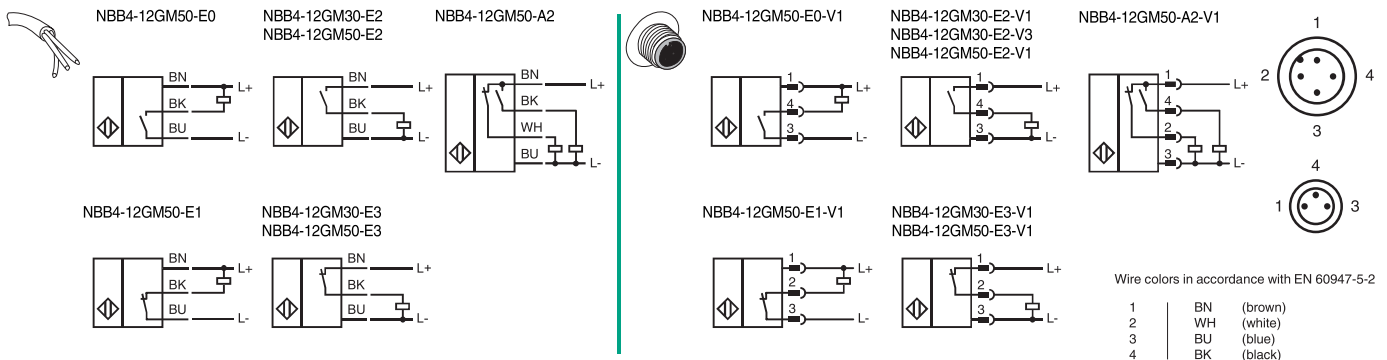


Accessories This and more accessories can be found in chapter 10

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

- BF 12** Mounting flange, 12 mm
- EXG-12** Quick mounting bracket with dead stop
- 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



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



Technical Data

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

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 17 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1200 Hz
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Further Products

In this series, we offer additionally:

NBN4-12GM40-E2-T-V1
NBN4-12GM60-E2-T-V1

Technical data:
PNP NO
-25 ... 100 °C (-13 ... 212 °F)
Device connector M12 x 1, 3-pin

Model Number

Switching element function	NPN	NO	●	●	●	●	●	●	●
	NPN	NC	●	●	●	●	●	●	●
Connection type	PNP	NO	●	●	●	●	●	●	●
	PNP	NC	●	●	●	●	●	●	●
Device connector M12 x 1, 4-pin			●	●	●	●	●	●	●
cable PVC, 2 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.	●

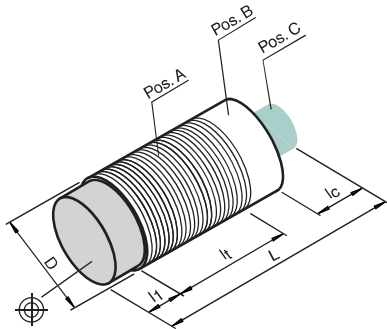
Dimensions

Length L [mm]	50	65
Diameter D [mm]	12	
Thread length l _t [mm]	42	45
Cap length l ₁ [mm]	5	
Connector area l _c [mm]	0	6
LED position	Pos. C	

Accessories

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

- BF 12** Mounting flange, 12 mm
- 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

<p>NBN4-12GM50-E0</p>	<p>NBN4-12GM50-E2</p>	<p>NBN4-12GM50-E0-V1</p>	<p>NBN4-12GM40-E2-T-V1 NBN4-12GM60-E2-T-V1 NBN4-12GM50-E2-V1</p>													
<p>NBN4-12GM50-E1</p>	<p>NBN4-12GM50-E3</p>	<p>NBN4-12GM50-E1-V1</p>	<p>NBN4-12GM50-E3-V1</p>	<p>Wire colors in accordance with EN 60947-5-2</p> <table border="0"> <tr><td>1</td><td>BN</td><td>(brown)</td></tr> <tr><td>2</td><td>WH</td><td>(white)</td></tr> <tr><td>3</td><td>BU</td><td>(blue)</td></tr> <tr><td>4</td><td>BK</td><td>(black)</td></tr> </table>	1	BN	(brown)	2	WH	(white)	3	BU	(blue)	4	BK	(black)
1	BN	(brown)														
2	WH	(white)														
3	BU	(blue)														
4	BK	(black)														



Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- DC, 4-wire switching outputs
- Cable and connector versions

Technical Data

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

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBN4-12GM60-A0	NBN4-12GM60-A2	NBN4-12GM35-A0-V1	NBN4-12GM35-A2-V1	NBN4-12GM60-A0-V1	NBN4-12GM60-A2-V1
Switching element function	NPN	NO/NC	●		●		●	●
	PNP	NO/NC		●		●		●
No-load supply current	≤ 15 mA		●	●	●	●	●	●
	≤ 20 mA							
Switching frequency	0 ... 1000 Hz		●	●	●	●		
	0 ... 1200 Hz						●	●
	0 ... 800 Hz				●	●	●	●
Connection type	Device connector M12 x 1, 4-pin		●	●	●	●	●	●
	cable PVC, 2 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]		60	50	70
Diameter D [mm]			12	
Thread length l _t [mm]		55	30	65
Cap length l ₁ [mm]			5	
Connector area l _c [mm]		0	6	0
LED position		Pos. C		Pos. B

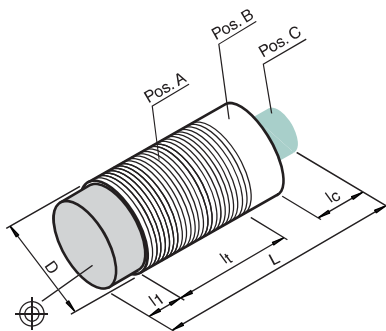
Accessories

This and more accessories can be found in chapter 10

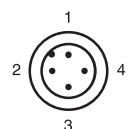
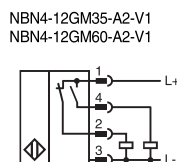
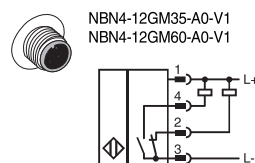
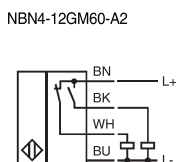
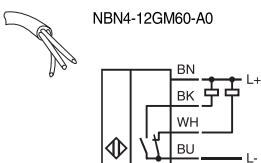
See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

- V1-G-BK** 4-pin, M12 female field-attachable connector
- BF 12** Mounting flange, 12 mm
- 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



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

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

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Properties

- Ø12 mm housing
- 6 mm, virtually flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

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

General Data

Rated operating distance	6 mm
Installation	virtually flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 800 Hz
Operating current	0 ... 200 mA, above 70°C ≤ 150 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NEB6-12GM50-E0	NEB6-12GM50-E1	NEB6-12GM50-E2	NEB6-12GM50-E3	NEB6-12GM50-E0-V1	NEB6-12GM50-E1-V1	NEB6-12GM50-E2-V1	NEB6-12GM50-E3-V1
Switching element function	green = preferred type	●				●			
	NPN NO		●				●		
	NPN NC			●				●	
	PNP NO				●				●
Connection type	PNP NC				●				●
	Device connector M12 x 1, 4-pin cable PUR, 2 m	●	●	●		●	●	●	●

Approvals and Certificates

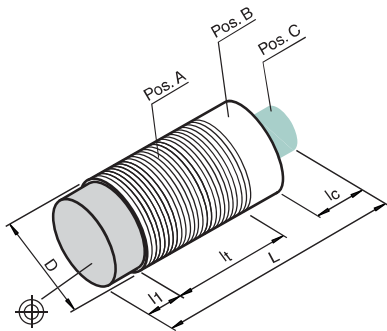
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.								

Dimensions

Length L [mm]	50	60
Diameter D [mm]	12	
Thread length l _t [mm]	49	40
Cap length l ₁ [mm]	0	
Connector area l _c [mm]	0	6
LED position	Pos. A	

Accessories This and more accessories can be found in chapter 10

BF 12	Mounting flange, 12 mm	See pages 972 ... for cordsets	See pages 1068 ... for mounting aids
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

<p>NEB6-12GM50-E0</p>	<p>NEB6-12GM50-E2</p>	<p>NEB6-12GM50-E0-V1</p>	<p>NEB6-12GM50-E2-V1</p>	<p>Wire colors in accordance with EN 60947-5-2</p> <table border="0"> <tr> <td>1</td> <td>BN</td> <td>(brown)</td> </tr> <tr> <td>2</td> <td>WH</td> <td>(white)</td> </tr> <tr> <td>3</td> <td>BU</td> <td>(blue)</td> </tr> <tr> <td>4</td> <td>BK</td> <td>(black)</td> </tr> </table>	1	BN	(brown)	2	WH	(white)	3	BU	(blue)	4	BK	(black)
1	BN	(brown)														
2	WH	(white)														
3	BU	(blue)														
4	BK	(black)														
<p>NEB6-12GM50-E1</p>	<p>NEB6-12GM50-E3</p>	<p>NEB6-12GM50-E1-V1</p>	<p>NEB6-12GM50-E3-V1</p>													



Technical Data

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

General Data

Rated operating distance	7 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 300 Hz
Operating current	0 ... 100 mA
Short-circuit protection	pulsing
Indication of the switching state	all direction LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 7 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Model Number

		green = preferred type		
Switching element function	PNP NO	●	●	●
	PNP NC			●
Connection type	Device connector M12 x 1, 4-pin cable PVC, 2 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]	35	50
Diameter D [mm]		12
Thread length l_t [mm]	27	30
Cap length l_1 [mm]		5
Connector area l_c [mm]	0	6
LED position	Pos. C	Pos. B

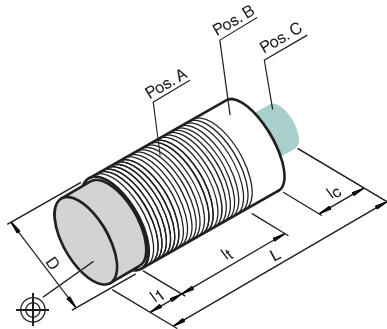
Accessories

This and more accessories can be found in chapter 10

See pages from 972 ... for cordsets

See pages 1068 ... for mounting aids

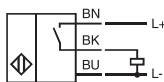
BF 12	Mounting flange, 12 mm
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable



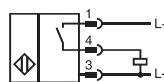
Electrical Connection



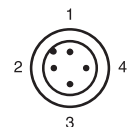
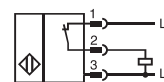
NBN7-12GM35-E2



NBN7-12GM35-E2-V1



NBN7-12GM35-E3-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

1
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Proximity Sensors, Inductive Sensors, cylindrical



Technical Data

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

General Data

Rated operating distance	8 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 16 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Operating current	0 ... 200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 8 mm, non-flush mountable
- DC, 3-wire and 4-wire switching output versions
- Cable and connector versions

Model Number

Switching element function	green = preferred type						
	NPN NO/NC						
	NPN NO	●	●				
	PNP NO/NC			●			●
	PNP NO		●			●	●
	Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)					●	●
	Connection type	Device connector M12 x 1 , 4-pin	●	●	●	●	●
	cable PVC , 2 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.						

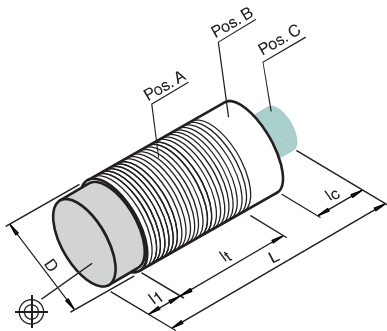
Dimensions

Length L [mm]	50	65
Diameter D [mm]		12
Thread length l _t [mm]	39	41
Cap length l ₁ [mm]		8
Connector area l _c [mm]	0	6
LED position		Pos. C

Accessories

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

- BF 12** Mounting flange, 12 mm
- 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

NBN8-12GM50-E0

NBN8-12GM50-A0

NBN8-12GM50-E0-V1

NBN8-12GM50-A0-V1

NBN8-12GM50-E2

NBN8-12GM50-A2

NBN8-12GM50-E2-V1

NBN8-12GM50-A2-V1

Wire colors in accordance with EN 60947-5-2

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



Technical Data

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

General Data

Rated operating distance	10 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 600 Hz
Operating current	0 ... 200 mA , above 70°C ≤ 150 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 10 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Model Number

Switching element function	green = preferred type	NEN10-12GM50-E0	NEN10-12GM50-E1	NEN10-12GM50-E2	NEN10-12GM50-E3	NEN10-12GM50-E0-V1	NEN10-12GM50-E1-V1	NEN10-12GM50-E2-V1	NEN10-12GM50-E3-V1
	NPN NO	●				●			
Connection type	NPNC		●				●		
	PNP NO			●				●	
Connection type	PNP NC				●				●
	Device connector M12 x 1 , 4-pin cable PUR , 2 m	●	●	●	●		●	●	●

Approvals and Certificates

UL approval	cULus 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.								

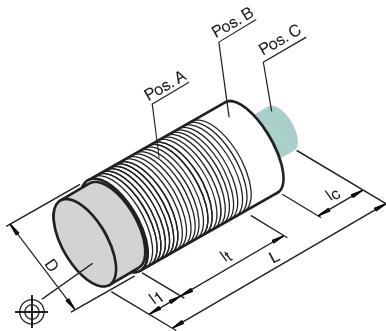
Dimensions

Length L [mm]		50	60
Diameter D [mm]			12
Thread length l _t [mm]		44	34
Cap length l ₁ [mm]			5,7
Connector area l _c [mm]		0	6
LED position			Pos. A

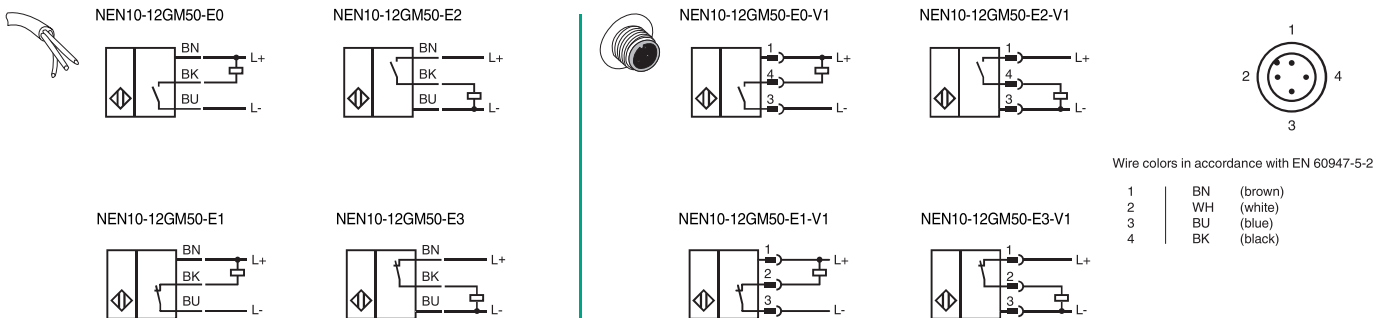
Accessories

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

BF 18	Mounting flange, 18 mm
EXG-12	Quick mounting bracket with dead stop
BF 12	Mounting flange, 12 mm
EXG-18	Quick mounting bracket with dead stop
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



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

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Proximity Sensors, Inductive Sensors, Cylindrical



Properties

- Ø12 mm housing
- 2 mm, flush and 4 mm, non-flush mountable versions
- AC, 2-wire switching output
- Cable version

Further Products

In this series, we offer additionally:
NBB2-12GM60-WS
 Technical data like NJ2-12GM50-WS but:
 Operating voltage: 20 ... 150 V AC
 Switching frequency: 0 ... 25 Hz
 Operating voltage indicator: LED, green
 Housing material: Brass, nickel plated
 Length L: 60 mm
 Thread length l_t : 60 mm

Technical Data

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

General Data

Type of voltage	AC
Operating voltage	20 ... 253 V
Reverse polarity protection	tolerant
Switching frequency	0 ... 20 Hz
Operating current	5 ... 200 mA
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	cabl PVC , 2 m

Model Number

Rated operating distance	2 mm	4 mm		
Installation	flush			
	non-flush			
Switching element function	AC NO			
	AC NC			



Approvals and Certificates

UL approval	cULus Listed, General Purpose				
CSA approval	cCSAus Listed, General Purpose				
CCC approval	Certified by China Compulsory Certification (CCC)				

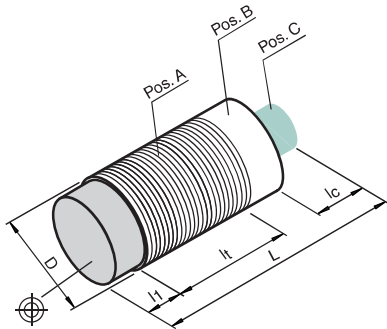
Dimensions

Length L [mm]			50	
Diameter D [mm]			12	
Thread length l_t [mm]		50		45
Cap length l_1 [mm]		0		5
Connector area l_c [mm]			0	
LED position				Pos. A

Accessories

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

BF 12	Mounting flange, 12 mm
EXG-12	Quick mounting bracket with dead stop

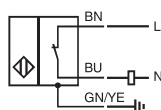
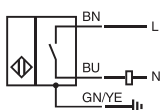


Electrical Connection



NJ4-12GM50-WS
 NJ2-12GM50-WS
 NBB2-12GM60-WS

NJ4-12GM50-WO
 NJ2-12GM50-WO





Technical Data

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

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	AC
Operating voltage	20 ... 150 V
Reverse polarity protection	tolerant
Switching frequency	0 ... 25 Hz
Operating current	5 ... 200 mA
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- AC, 2-wire switching output
- Cable and connector versions

Model Number

	NBN4-12GM60-WO	NBN4-12GM60-WS	NBN4-12GM60-WO-V12	NBN4-12GM60-WS-V11	NBN4-12GM60-WS-V12
Switching element function	AC NO	AC NC			
Connection type	Device connector 1/2"-20 UN , 3-pin				
	Device connector M12, 3-pin				
	cable PVC , 2 m				

Approvals and Certificates

UL approval	cULus Listed, General Purpose				
CSA approval	cCSAus Listed, General Purpose				
CCC approval	Certified by China Compulsory Certification (CCC)				

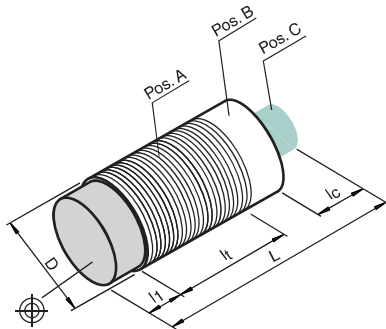
Dimensions

Length L [mm]	60	70		
Diameter D [mm]		12		
Thread length l _t [mm]	55	50	65	50
Cap length l ₁ [mm]		5		
Connector area l _c [mm]	0	12		
LED position		Pos. A		

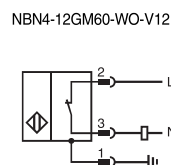
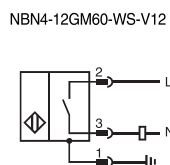
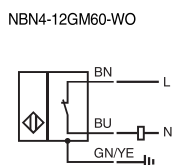
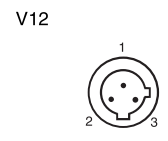
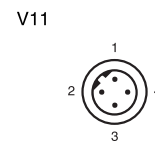
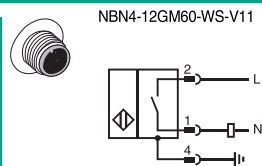
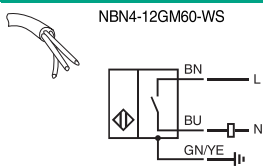
Accessories

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

- BF 12** Mounting flange, 12 mm
- EXG-12** Quick mounting bracket with dead stop



Electrical Connection



Wire colors

1	BU (blue)
2	BN (brown)
4	GN/YE (green/yellow)

Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

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

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Properties

- Ø12 mm housing
- 4 mm, flush and 8 mm, non-flush mountable versions
- AC/DC, 2-wire switching output
- Cable and connector versions

Technical Data

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

General Data

Switching element function	AC/DC	NO
Type of voltage	AC/DC	
Operating voltage	20 ... 250 V AC/20 ... 300 V DC	
Reverse polarity protection	tolerant	
Switching frequency	30 Hz	
Operating current	8 ... 200 mA AC/DC	
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	brass, nickel-plated	
Protection degree	IP67	

Model Number

		NBB4-12GM75-US	NBN8-12GM75-US	NBB4-12GM65-US-V12	NBN8-12GM65-US-V12
Rated operating distance	4 mm	●	●	●	●
	8 mm	●	●	●	●
Installation	flush	●	●	●	●
	non-flush	●	●	●	●
Connection type	Device connector 1/2"-20 UN , 3-pin	●	●	●	●
	cable PUR , 2 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

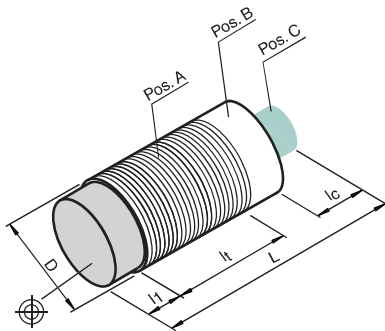
Length L [mm]	75		82	
Diameter D [mm]	12			
Thread length l _t [mm]	72	64	65	64
Cap length l ₁ [mm]	0	8	0	8
Connector area l _c [mm]	0		8	
LED position	Pos. B			

Accessories

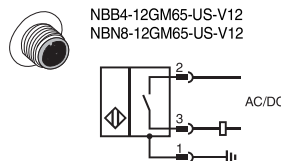
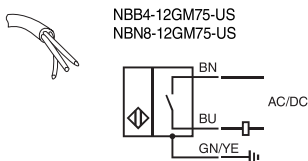
This and more accessories can be found in chapter 10
 See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

EXG-12

Quick mounting bracket with dead stop



Electrical Connection



Wire colors
 1 | GN (green)
 2 | RD/BK (red/black)
 3 | RD/WH (red/white)



Technical Data

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

General Data

Measurement range	0 ... 6 mm
Installation	virtually flush
Type of voltage	DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Limit frequency (3dB)	1000 Hz
Short-circuit protection	✓
Adjustment tolerance zero point	≤ ± 10 % of full-scale value
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	chromium plated brass
Protection degree	IP67
Connection type	Device connector M12 x 1 , 4-pin



Properties

- Ø12 mm housing
- 6 mm, virtually flush mountable
- DC, 3-wire analog output
- Connector version

Your Benefit

- Inductive position measurement
- Distance proportional analog value
- Suitable for positioning tasks

Model Number

Switching element function	green = preferred type analog voltage output analog, current or voltage output	IA6-12GM35-U-V1	IA6-12GM50-IU-V1
Operating voltage	10 ... 30 V 15 ... 30 V , residual ripple 20 % U _B	●	●
Output type	0 ... 5 V 0 ... 10 V / 4 ... 20 mA	●	●
Load resistor	≥ 500 Ω voltage output: ≥ 500 Ω current output: ≤ 500 Ω	●	●

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.		

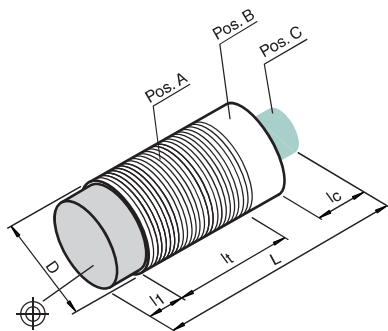
Dimensions

Length L [mm]	45	60
Diameter D [mm]	12	
Thread length l _t [mm]	29	44
Cap length l ₁ [mm]	0	
Connector area l _c [mm]	8	
LED position	45	60

Accessories

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

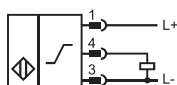
BF 12	Mounting flange, 12 mm
V1-W-BK	4-pin, M12 female field-attachable connector
V1-G-2M-PUR	Cable socket, M12, 4-pin, PUR cable
V1-W-2M-PUR	Cable socket, M12, 4-pin, PUR cable



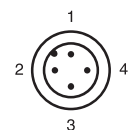
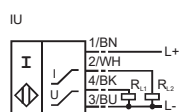
Electrical Connection



IA6-12GM35-U-V1



IA6-12GM50-IU-V1



Wire colors in accordance with EN 60947-5-2

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

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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