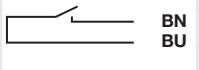
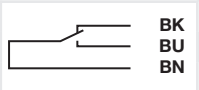
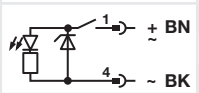
- **Suitable for all cylinder ranges with magnetic piston**
- **Switches can be mounted flush with the delivered special adaptor**
- **LED indicator on LSU models**
- **Alternative variants allows a wide range of application**

Technical features

Operation:
M/50/LSU Normally open with LED (yellow)
Switching voltage (Ub):
10 ... 240 V a.c./170 V d.c.
Switching voltage output:
Ub - 2,7 V
Switching current (see graph overleaf):
0,18 A max.
Switching power:
10 W/10 VA max.
Contact resistance:
150 mΩ
Response time:
1,8 ms
Operating temperature:
-25°C ... +80°C (-13°F ... +176°F)
High temperature version:
+150°C max.(+302 °F)
Protection rating (EN 60529):
IP 66
Shock resistance:
50 g (during 11 ms)
Vibration resistance:
35 g (at 2000 Hz)
Cable type:
2 x 0,25: PVC, PUR or silikone
3 x 0,25 PVC
Cable length:
2, 5 or 10 m
Electromagnetic compatibility according to:
EN 60947-5-2
Materials:
Body: plastic
Cable: see table below

Technical data

Symbol	Voltage (V a.c.)	Voltage (V d.c.)	Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model
 ± BN ~ BU	10 ... 240	10 ... 170	180	Closer	-25 ... +80	•	IP66	—	2, 5 or 10	PVC 2 x 0,25	37	M/50/LSU/*V
	10 ... 240	10 ... 170	180	Closer	-25 ... +80	•	IP66	—	5	PUR 2 x 0,25	37	M/50/LSU/5U
 BN BU	10 ... 240	10 ... 170	180	Closer	-25 ... +150	—	IP66	—	2	Silicon 2 x 0,25	37	TM/50/RAU/2S
 BK BU BN	10 ... 240	10 ... 170	180	Changeover	-25 ... +80	—	IP66	—	5	PVC 3 x 0,25	37	M/50/RAC/5V
 1 + ~ BN 4 ~ BK	10 ... 60	10 ... 60	180	Closer	-25 ... +80	•	IP66	M8 x 1	0,3	PVC 3 x 0,25	16	M/50/LSU/CP *1)

* Insert cable length; *1) Plug-in connector see page 2; Color code: BK = black, BN = brown, BU = blue

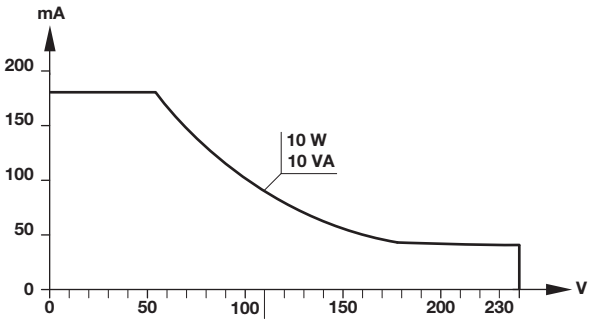
Options selector

★M/50/★★★/★★★

Variants	Substitute
High temperature (+150°C)	T
Type	Substitute
Reed with LED	L
Reed without LED	R
Switching voltage	Substitute
Standard	S
Special	A
Function	Substitute
Closer	U
Changeover	C

Cable	Substitute
Silicone	S
PVC	V
PUR	U
Cable length/plug	**Substitute**
2 m	2
5 m	5
10 m	10
Cable (0,3 m) with plug M8 x 1	CP

Switching current and switching voltage M/50/LSU, M/50/RAC, M/50/RAU



Accessories

Plug-in connector cable with nut

Outer cover	Cable length (m)	Weight (kg)	Connector	Connector
PVC 3 x 0,25	5 m	0,18	M8 x 1	M/P73001/5
PUR 3 x 0,25	5 m	0,18	M8 x 1	M/P73002/5
PUR 3 x 0,34	5 m	0,21	M12 x 1	M/P34594/5

Mounting elements for magnetic switches

Cylinder with external tie rods RA/8000/M, KA/8000/M RA/28000/M, RM/900/M

Roundline cylinder RM/55401/M

Roundline cylinder KM/55001/M, VSM/55640/N2

Roundline cylinder R./57100/M, R./57200/M R./57300/M

Roundline cylinder < 25 mm stroke RM/8000/M, KM/8000/M RM/28000/M

Roundline cylinder > 25 mm stroke RM/8000/M, KM/8000/M RM/28000/M

Mounting elements






Cylinder Ø(mm)	Model	Cylinder Ø(mm)	Model	Cylinder Ø(mm)	Model	Cylinder Ø(mm)	Model	Cylinder Ø(mm)	Model	Cylinder Ø(mm)	Model
32 ... 200	QM/27/2/1	32	QM/33/432/22	32	QM/33/432/22	10	QM/33/010/22	10	QM/33/010/22	10	QM/33/010/23
		40	QM/33/440/22	40	QM/33/440/22	12	QM/33/012/22	12	QM/33/012/22	12	QM/33/016/23
		50	QM/33/450/22	50	QM/33/450/22	16	QM/33/016/22	16	QM/33/016/22	16	QM/33/016/23
		63	QM/33/463/22	63	QM/33/463/22	20	QM/33/020/22	20	QM/33/020/22	20	QM/33/020/23
		80	QM/33/480/22	80	QM/33/080/22	25	QM/33/025/22	25	QM/33/025/22	25	QM/33/025/23
		100	QM/33/410/22	100	QM/33/100/22	32	QM/33/032/22				
				125	QM/33/125/22	40	QM/33/040/22				
						50	QM/33/050/22				
						63	QM/33/063/22				

Dimensions see relevant cylinder sheets.

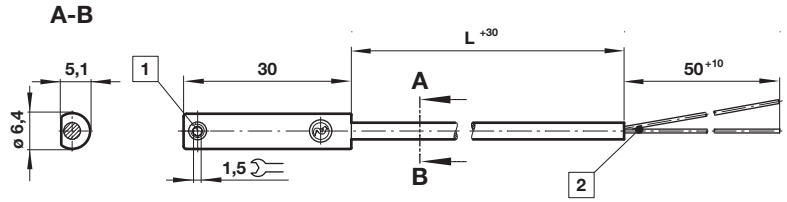
Drawings

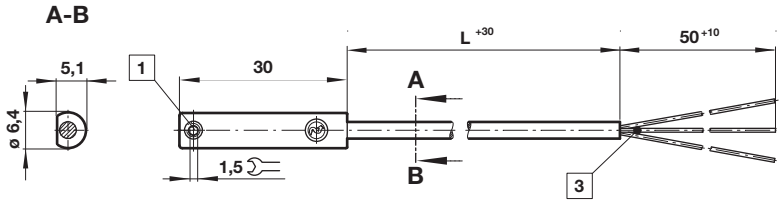
M/50/LSU/*V, M/50/LSU/5U, TM/50/RAU/2S
Cable length L = 2, 5 or 10 m

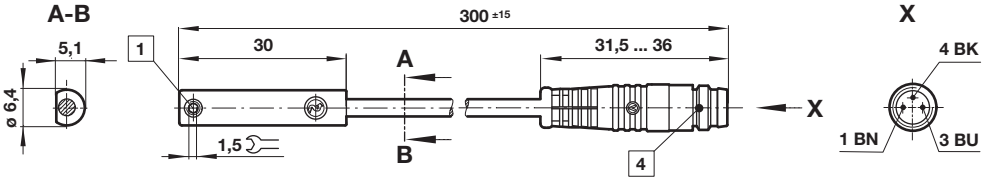
M/50/RAC/5V
Cable length L = 5 m

M/50/LSU/CP

Dimensions in mm
Projection/First angle







1 Fixing screw
2 + BN = brown; - BU = blue (output)
3 - BK = black; + BN = brown; - ≠BU = blue
4 Plug M8 x 1, color code: BK = black; BN = brown; BU = blue

Warning

These products are intended for use in industrial systems only. Do not use these products where values can exceed those listed under **»Technical features/data«**.

Before using these products with non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in control systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

- **Magnetically operated solid state switch - round style**
- **IO-Link version available**
- **Suitable for all cylinder ranges with magnetic piston**
- **Switches can be mounted flush in all profile cylinders**
- **Reliable switching with a very fast reponse time**
- **Particularly suited for use in high levels of vibration**
- **LED indicator as standard**
- **CE certified**
- **UL listed**

IO-Link

c UL us LISTED

CE

Technical features

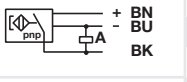
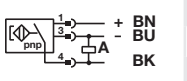
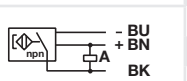
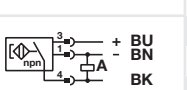
Operation:
M/50/EAP (PNP) open collector output with LED (yellow)
M/50/EAN (NPN) grounded emitter output with LED (yellow)
M/50/IOP (PNP) Easy IO-Link open collector output with LED (yellow)
Switching voltage (Ub):
10 ... 30 V d.c.
Switching voltage output:
Ub - 2 V
Inducted voltage:
0,5 V

Switching current (see graph overleaf):
100 mA max.
Switching power:
4,5 W max.
Response time:
< 0,5 ms for EAP switch
< = 1 ms for IOP switch
Operating frequency:
1 kHz
Protection rating (EN 60529):
IP67 (standard)
IP68 for type: M/50/EAP/5U

Operating temperature:
-40 ... +80°C (-40 ... 176°F)
(IP67 & IP68)
Cable type:
PVC 3 x 0,12 (standard)
PUR 3 x 0,14 (M/50/EAP/5U)
Cable length:
2, 5 and 10 m
Electromagnetic compatibility according to:
EN 60947-5-2

Materials:
Body: plastic
Cable: see table below

Technical data - Solid state

Symbol	Voltage (V d.c.)	Current maximum (mA)	Function	IO-Link *2)	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 30	100	PNP		-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAP/*V
	10 ... 30	100	PNP	•	-40 ... +80	•	IP67	—	5	PVC 3 x 0,12	37	M/50/IOP/5V
	10 ... 30	100	PNP		-40 ... +80	•	IP68	—	5	PUR 3 x 0,14	37	M/50/EAP/5U
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CP *1)
	10 ... 30	100	PNP	•	-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/IOP/CP *1)
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M12 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CC *1)
	10 ... 30	100	NPN		-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAN/*V
	10 ... 30	100	NPN		-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAN/CP *1)

* Insert cable length; *1) Plug-in connector below; Color code: BK = black, BN = brown, BU = blue

IO-Link function *2)

· Visual installation aid
· Counter
· Temperature diagnostic
· Power LED

IO-Link Switch conforming to IEC 61131-9

Properties and Functionality	Typical magnetically operated switches	M/50/IOP	
			IO-Link
Operating Mode	Standard	Standard	
Power LED		•	•
LED sensor signal	•	•	•
Normally open (delivery status)	•	•	•
Normally closed		**O**	•
Delay mode		**O**	•
Installation aid		•	•
Temperature measurement			•
Detection counter			•

Note: IODD for the M/50/IOP switches available on the IMI Precision Engineering homepage.
https://www.imi-precision.com/uk/en/technical-support/software

• included
O manufacture pre-setting required

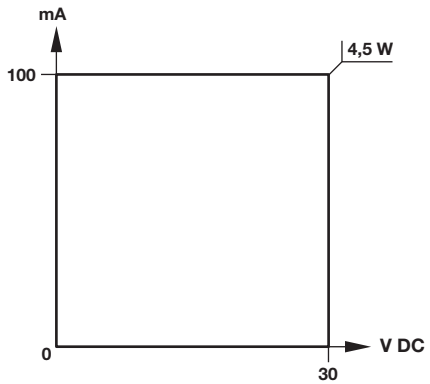
Option selector

M/50/★★★/★★★

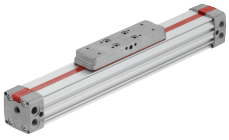
Function	Substitute
PNP	**EAP**
NPN	**EAN**
IO-Link	**Substitute**
PNP	**IOP**

Cable	Substitute
PVC (Standard)	**V**
PUR	**U**
Cable length/plug	**Substitute**
2 m	**2**
5 m	**5**
10 m	**10**
Cable (0,3 m) with plug M8 x 1	**CP**
Cable (0,3 m) with plug M12 x 1	**CC**

Switching current and switching voltage



Cylinder ranges suitable for flush switch mounting

ø 32 ... 125 mm ISO 15552	ø 20 ... 125 mm ISO 21287	ø 16 ... 80 mm	ø 32 ... 125 mm	ø 32 ... 100 mm	ø 10 ... 40 mm
ISOLine™ Clean Line IVAC Industrie	**Compact Cylinder**	**LINTRA® Plus**	**Rotary Cylinder**	**Cylinder with guiding**	**Sort stroke unit Slide tables**
					
Type	**Type**	**Type**	**Type**	**Type**	**Type**
PRA/802000/M	RA/192000/M	M/146000/M	M/162000/M	M/61000/M	M/60100/M
PRA/822000/M		M/146100/M			M/61200/M
PRA/862000/M		M/146200/M			

Mounting brackets for magnetic switches

Cylinder with external tie rods RA/80*000/M, RA/8000/M, KA/8000/M, RM/900/M	Roundline cylinder RM/55401/M	Roundline cylinder KM/55001/M, VSM/55640/N2	Roundline cylinder R./57*00/M	Roundline cylinder < 25 mm stroke RM/8000/M, KM/8000/M RM/28000/M	Roundline cylinder > 25 mm stroke RM/8000/M, KM/8000/M RM/28000/M
					

Mounting brackets






Cylinder Ø (mm)	Model	Cylinder Ø (mm)	Model	Cylinder Ø (mm)	Model	Cylinder Ø (mm)	Model	Cylinder Ø (mm)	Model	Cylinder Ø (mm)	Model
32 ... 200	QM/27/2/1	32	QM/33/432/22	32	QM/33/432/22	10	QM/33/010/22	10	QM/33/010/22	10	QM/33/010/23
250	QM/27/2/2	40	QM/33/440/22	40	QM/33/440/22	12	QM/33/012/22	12	QM/33/012/22	12	QM/33/016/23
320	QM/27/2/3	50	QM/33/450/22	50	QM/33/450/22	16	QM/33/016/22	16	QM/33/016/22	16	QM/33/016/23
		63	QM/33/463/22	63	QM/33/463/22	20	QM/33/020/22	20	QM/33/020/22	20	QM/33/020/23
		80	QM/33/480/22	80	QM/33/080/22	25	QM/33/025/22	25	QM/33/025/22	25	QM/33/025/23
		100	QM/33/100/22	100	QM/33/100/22	32	QM/33/032/22				
				125	QM/33/125/22	40	QM/33/040/22				
						50	QM/33/050/22				
						63	QM/33/063/22				

Dimensions see relevant cylinder data sheets.

Accessories

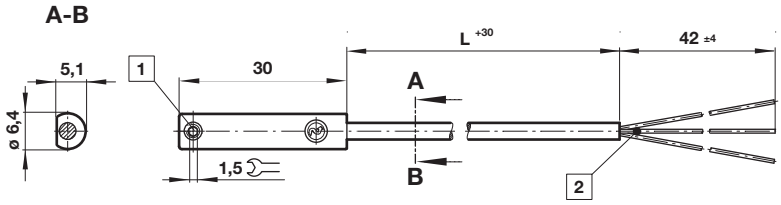
Plug-in connector cable with nut

Outer cover	Cable length (m)	Weight (kg)	Connector	Model
PVC 3 x 0,25	5 m	0,18	M8 x 1	M/P73001/5
PUR 3 x 0,25	5 m	0,18	M8 x 1	M/P73002/5
PUR 3 x 0,34	5 m	0,21	M12 x 1	M/P34594/5

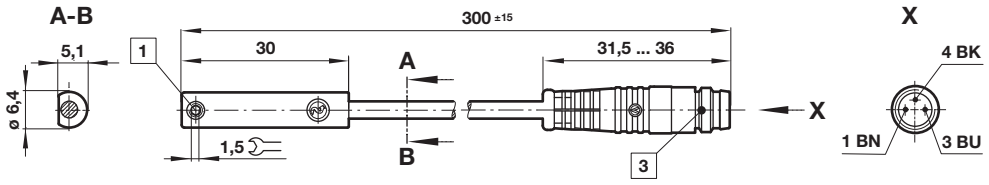
Dimensions

Dimensions in mm
Projection/First angle

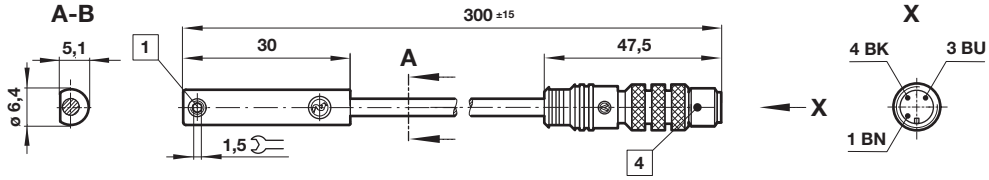
M/50/EAP/*V,
M/50/EAN/*V
M/50/IOP/5V
Cable length L = 2, 5 or 10 m



M/50/EAP/CP,
M/50/EAN/CP
M/50/IOP/CP



M/50/EAP/CC



1 Fixing screw
2 Color code: BK = black; BN = brown; BU = blue
3 Plug M8 x 1
4 Plug M12 x 1

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult
IMI Precision Engineering, Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

- **Alternative materials allows a wide range of application**
- **Switch with plug**

Technical features

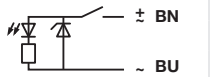
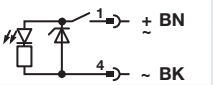
Operation:
TQM/31, QM/32 normally open with LED (yellow)
Switching voltage (Ub):
10 ... 240 V a.c./d.c.
Switching voltage output:
Ub - 2 V (QM/32)
Switching current (see graph overleaf):
1 A max. (QM/32)
Switching power:
50 W/50 VA max.

Contact resistance:
100 mΩ
Response time:
3 ms
Operating temperature:
-20 ... +80°C (-4 ... +176°F)
High temperature version:
+150°C max. (TQM/31) (+302°F)
Protection rating (EN 60529):
IP 66
Shock resistance:
50 g (during 11 ms)

Vibration resistance:
35 g (50 to 2000 Hz)
Cable type:
PVC 2 x 0,75, PUR 2 x 0,75
VMQ 2 x 0,75 (TQM/31)
Cable length:
2, 5 or 10 m
Electromagnetic compatibility according to:
EN 60947-5-2

Materials:
Body: plastic
Cable: see table below

Technical data

Symbol	Voltage (V a.c.)	Voltage (V d.c.)	Current max. (A)	Function	Operating temperature (°C)	LED	Protection class	Features	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 240	10 ... 240	1	Closer	-20 ... +80	•	IP66	—	2, 5 or 10	PVC 2 x 0,75	108 (2 m)	QM/32/*
	10 ... 240	10 ... 240	1	Closer	-20 ... +80	•	IP66	—	2	PUR 2 x 0,75	108	QM/32/2/PU
	10 ... 240	10 ... 240	2	Closer	-20 ... +150	—	IP66	High temperature	2, 5 or 10	Silicon 2 x 0,75	102 (2 m)	TQM/31/*
	10 ... 240	10 ... 240	1	Closer	-20 ... +80	•	IP66	Plug M12 x 1	—	—	15	QM/32/P *1)

* Insert cable length
*1) Plug-in connector see page 2
Color code: BK = black, BN = brown, BU = blue

Options selector

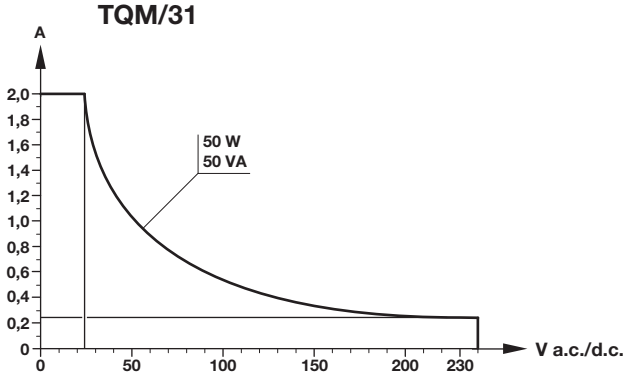
★QM/3★/★★/★★

Variants	Substitute
High temperature (+150°C), for TQM/31/* only	T
Type	**Substitute**
Reed wi h LED	2
Reed wi hout LED, for TQM/31/* only	1

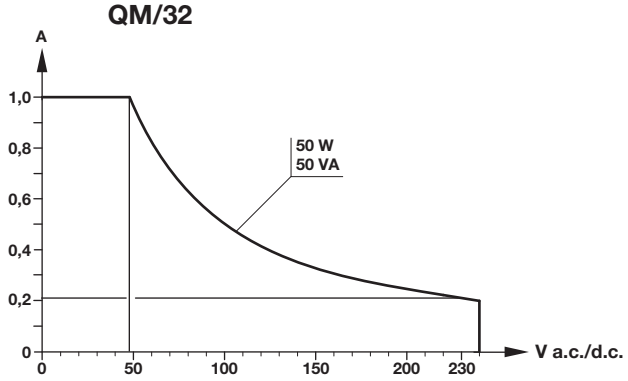
Cable	Substitute
PVC	Without
PUR	PU
Cable length/plug	**Substitute**
2 m	2
5 m	5
10 m	10
With plug	**Substitute**
M12 x 1	P

Switching current and switching voltage

TQM/31



QM/32



Mounting elements for magnetic switches

Cylinder with external tie rods RA/8000/M, RA/28000/M

Cylinder with external tie rods RM/900/M

Mounting elements

Mounting elements

Cylinder Ø (mm)	Model	Cylinder Ø (inch)	Model
32 ... 63	QM/31/032/22	1 1/4"	QM/31/032/22
80 ... 125	QM/31/080/22	1 3/4" + 2"	QM/31/080/22
160 + 200	QM/31/160/22	2 1/2" ... 4"	QM/31/2/22
250	QM/31/250/22		
320	QM/31/320/22		

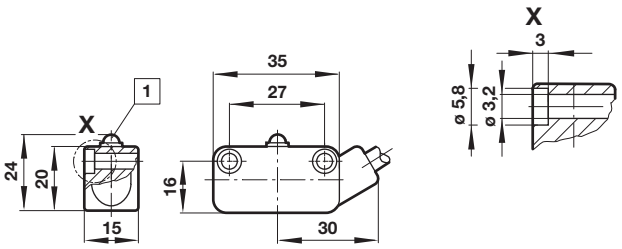
Dimensions see relevant cylinder sheets.

Accessories

Plug-in connector cable with nut

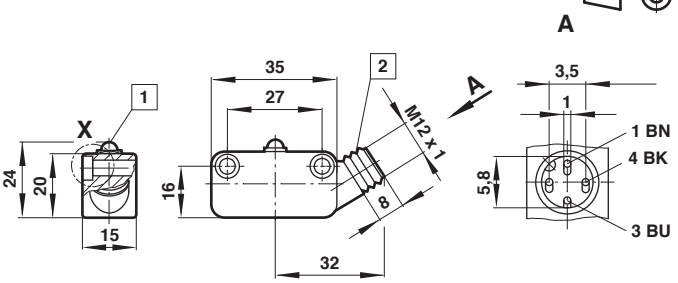
Outer cover	Cable length	Weight (kg)	Connector	Model
PVC 3 x 0,34	5 m	0,182	M12 x 1	M/P34692/5
PUR 3 x 0,34	5 m	0,182	M12 x 1	M/P34594/5

Dimensions
TQM/31, QM/32



QM/32/P

Dimensions in mm
Projection/First angle



1 LED (yellow)
2 Plug M12 x 1
Color code: BK = black, BN = brown, BU = blue

Warning

These products are intended for use in industrial systems only. Do not use these products where values can exceed those listed under **»Technical features/data«**.

Before using these products with non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in control systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.