



M8 AND M12 CONNECTIVITY FOR INDUSTRIAL APPLICATIONS

THE SOLUTION FOR UNCONTAMINATED AND SPECIAL ENVIRONMENTS

SICK
Sensor Intelligence.

CONNECTING EVERYWHERE

Industrial automation is demanding, not only of sensor solutions. The connectors used also have to have the resilience and performance to meet the daily challenges of harsh industrial environments.

SICK provides a wide range of connectivity solutions for the many requirements of industrial automation. You benefit from more than just a comprehensive portfolio of accessories:

You also save time and money, thanks to our simple order process and swift delivery of sensors with suitable connectors.



Applications in harsh environments are especially demanding when it comes to plug connectors and cables. Cleaning agents, oils, and lubricants, and heavy mechanical contamination demand different connectors which have special features designed precisely for the specific requirements.

In SICK's wide portfolio you will always find a solution for the following fields of application:

- Connectivity for hygienic and washdown zones
- Connectivity for zones with oils, coolants, or lubricants
- Connectivity for zones with chemicals and for all fields of application with no mechanical, chemical, or other contamination.



This compact brochure gives an overview of the fields of application and distinguishing features of the various M8 and M12 standard cables produced by SICK.

You will find further information about terms marked with a → in the glossary.

Fields of application	4
Cost-effectiveness and flexibility for installation on site	7
Selection guide	8
Product information	10
Glossary	41

CONNECTIVITY FOR HYGIENIC AND WASHDOWN ZONES



*1 PP variants. **1 PVC variants.

The challenge

As the connectors are used in cold stores and washdown zones, they must be highly resistant to chemical, thermal, and mechanical contamination. Complying with hygiene requirements is the highest priority. Using a suitable mounting tool ensures a watertight connection between the sensor and cable → [page 40](#).

The SICK solution

→ PVC cables

- Absolute impermeability provided by dual-action (axial and radial) profile seal.
- The special profile seal on these connecting cables provides even better impermeability than a classic O-ring seal.
- Good shock and vibration resistance up to 50 g with the dual action interlock.
- Integrated fixed stop prevents the plug connector from being screwed too tight

Essential features

The connectors for this area feature → IP enclosure ratings IP69K for protection from the effects of high pressure cleaning and steam cleaning. The Ecolab certification also indicates that the cables for this zone are particularly resistant to aggressive acidic and alkaline cleaning agents. In addition, these cables have coupling nuts made of stainless steel (V4A).

→ PP cables

- Consistent use of FDA approved materials
- Hygienic design based on EHEDG recommendations. Designed with very smooth surfaces and no gaps to prevent dirt getting trapped.
- Very high temperature resistance: -40 °C ... +105 °C
- Suitable for drag chains
- Resistant to lactic acid, → microbes and hydrolysis

Connectivity for hygienic and washdown zones		
Cable material	PVC overmolded with PUR	PP
Cable jacket color	Gray	White
Enclosure rating	IP65, IP67, IP69K	IP67, IP69K
Knurled nut material	Stainless steel (V4A/1.4404)	Stainless steel (V4A/1.4404)
Temperature range	-30 °C ... +80 °C for fixed installation -5 °C ... +80 °C for flexible use	-40 °C ... +105 °C for fixed installation -25 °C ... +105 °C for flexible use
Certifications	Ecolab ¹⁾ , CSA, UL	Ecolab ²⁾ , FDA
Hygienic design	No	Yes

¹⁾ Cleaning agents tested: P3-topactive DES, P3-topax 19, P3-topax 56, P3-topax 66, and P3-topax 99. All other cleaning agents must be tested before use to assess resistance to chemicals.

²⁾ Cleaning agents tested: P3-topax 52, P3-topax 66, P3-topax 91, P3-topactive 200, and P3-topactive DES. All other cleaning agents must be tested before use to assess resistance to chemicals.

CONNECTIVITY FOR ZONES WITH OILS, COOLANTS, OR LUBRICANTS



The challenge

The action of cutting oils and cooling lubricants on system components is extremely aggressive. To prevent sensor failure it is important for the connectors to have a high resistance to these aggressive substances.

Essential features

Because they are used in a harsh environment the connectors must be resistant to oils and lubricants, able to withstand heavy mechanical loads, and → suitable for drag chains.

The SICK solution

→ PUR cables

- High resistance to oils, coolants and lubricants
- Good wear resistance
- Suitable for drag chains
- Resistant to microbes and hydrolysis
- Flame resistant and self extinguishing
- Free of paint wetting impairment substances (→ PWIS free)
- → Silicone free
- → Halogen free
- UL approval

Connectivity for zones with oils, coolants, or lubricants	
Cable material	PUR
Cable jacket color	Black
Enclosure rating	IP65, IP66K, IP67
Knurled nut material	Nickel plated zinc die cast
Temperature range	-40 °C ... +80 °C for fixed installation -25 °C ... +80 °C for flexible use -25 °C ... +85 °C, head
Certifications	UL, CE ¹⁾

¹⁾ Applies to variants that are subject to the Low Voltage Directive. For more detailed information, see the product data sheet at www.sick.com.

CONNECTIVITY FOR UNCONTAMINATED APPLICATIONS



The challenge

PVC connectors can be used for all standard applications. This means all applications involving no cleaning processes or other challenges. They can support a large variety of industrial applications. As the PVC material is highly resistant to chemicals these standard connectors can also be used in processes involving chemical cleaning, once they have been tested.

Essential features

Connectors which are easy to use are a great advantage in all industrial applications. One factor that contributes to this is the fact that PVC cables are easy to strip. For fields of application with low to moderate contamination and flexible applications not involving forced guidance or tensile stress, the most important requirement for connectors is cost efficiency. They must be suitable for use in both dry and humid rooms.

The SICK solution

→ PVC cables

- Very easy to strip because of the nature of the jacket and the conductor insulation
- Free of paint wetting impairment substances (PWIS-free)
- Silicone free
- → Flame resistant and self extinguishing
- Excellent price/performance ratio
- UL approval

Connectivity for uncontaminated applications	
Cable material	PVC
Cable jacket color	Gray
Enclosure rating	IP65, IP66K, IP67
Knurled nut material	Nickel plated zinc die cast
Temperature range	-30 °C ... +80 °C for fixed installation -5 °C ... +80 °C for flexible use -25 °C ... +85 °C, head
Certifications	UL, CE ¹⁾

¹⁾ Applies to variants that are subject to the Low Voltage Directive. For more detailed information, see the product data sheet at www.sick.com.

COST-EFFECTIVENESS AND FLEXIBILITY FOR INSTALLATION ON SITE



The challenge

If it is difficult to plan the wiring for a machine because the requirements are unclear or keep changing, connecting cables and ready to assemble plug connectors together provide a good deal of flexibility and latitude in planning. Depending on the requirements a great variety of cable lengths can be produced and connectors can be matched to the conditions on site. This flexibility saves machine and system operators time and money.

Essential features

SICK plug connectors use the widespread screw connection as standard. However, the portfolio also includes special plug connectors with insulation displacement connection or Pierce connection. Both types of connection can save a lot of time during installation.

The SICK solution

Field wireable connectors

- M8 and M12 designs
- Many straight and angled variants
- Housing materials: e.g., zinc die cast, PBT or TPE
- Enclosure ratings up to IP69K available (screwed together)

Field wireable connectors	
Enclosure rating	IP65, IP67, IP68, IP69K
Housing materials	Zinc die cast, PBT or TPE
Temperature range	-40 °C ... +85 °C or -25 °C ... +90 °C
Certifications	UL

CONNECTIVITY FROM SICK – THE BENEFITS ARE CLEAR



Security – for maximum productivity

You can rely on SICK: First class product quality and safe sensor and cable connections ensure very high machine availability.



Service – SICK is available for you on site

One of SICK's strengths is its global presence. If necessary, our experts will visit you at your site to advise you about the right connectors for your sensors. We have high product availability, allowing us to deliver our products fast and worldwide. Your satisfaction is our goal.



Flexibility – customized solutions

Sometimes even a wide range of standard products for passive connectivity cannot fulfill all the specific requirements and application conditions in the automation industry. For these cases, SICK also offers customized modifications and solutions, for example new length variants or new connector/cable combinations.

SELECTION GUIDE

	Temperature range ¹⁾								Features				
	For flexible use			For fixed installation					Suitable for drag chains	Resistant to lactic acid	Resistant to hydrolysis and microbes	Hygienic design	Shielded variants available
	-5 °C ... +80 °C	-25 °C ... +80 °C	-25 °C ... +105 °C	-25 °C ... +90 °C	-30 °C ... +80 °C	-40 °C ... +80 °C	-40 °C ... +85 °C	-40 °C ... +105 °C					
PVC overmolded with PUR (for food and beverage zones)	■				■								
PP			■					■	■	■	■	■	
PUR		■				■			■		■		■
PVC	■				■								■
Field wireable connectors				■			■						■

¹⁾ For detailed information on temperature ranges for individual products see the product section starting on page → Page 10.

²⁾ SICK offers ready to assemble plug connectors with enclosure rating IP67 as standard versions. Special versions are also available with other enclosure ratings.

³⁾ Applies to variants that are subject to the Low Voltage Directive. For more detailed information, see the product data sheet at www.sick.com.



Performance – SICK adapts its products to your wishes

Our standard products have all the relevant certificates. In addition to the standard portfolio, SICK will provide you with solutions which match your customers’ needs exactly. SICK has the perfect combination of sensors and connectors to guarantee outstanding sensor performance.



Price – the best products at low cost

For SICK, complying with all the applicable product standards is a matter of course. Plus, SICK offers you an outstanding price/performance ratio.

	Enclosure rating				Certifications					Fields of application				Page
	IP65	IP66K	IP67	IP69K	UL	Ecolab	Compliant with FDA	CSA	CE	Hygienic and washdown zones	Zones with oils, coolants, or lubricants	Uncontaminated fields of application	Flexibility during installation of the machine on site	
	■		■	■	■	■		■		■				→ 10
			■	■		■	■			■				→ 10
	■	■	■		■				■ ³⁾		■			→ 17
	■	■	■		■				■ ³⁾			■		→ 27
			■ ²⁾		■								■	→ 33



At a glance

- Enclosure rating IP69K
- Ecolab certified
- Knurled nuts made of stainless steel (V4A)
- FDA conformity¹⁾
- Resistance to lactic acid¹⁾
- Hygienic design¹⁾
- Torsionable $\pm 180^\circ/m$ ¹⁾
- Weatherproof (resistant to ozone and UV)¹⁾
- Dual-action profile seal²⁾
- Halogen free¹⁾

¹⁾ PP (Polypropylene) variants.

²⁾ PVC (Polyvinyl chloride) variants.

Your benefits

- Durability and resistance to corrosion with the high quality cable material (PVC/PP) used
- High resistance to Ecolab-certified cleaning agents
- Resistance to the effects of high pressure cleaning and steam cleaning with protection classes IP67 and IP69K
- PVC cables have a special sealing concept with dual-action profile seal
- PP cables have a hygienic design which prevents trapping of dirt and is easy to clean
- Using a suitable mounting tool ensures a watertight connection between the sensor and cable
- Variants with 3 status display LEDs (Power, N/C, N/O)



= suitable for drag chains



= LED



= shielded

→ www.sick.de/plug_connectors_and_cables

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.


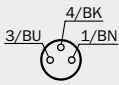

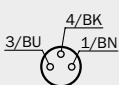



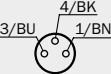

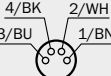

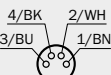


Ordering information

Other device versions available here → www.sick.de/plug_connectors_and_cables

Connecting cables with M8 female connector, PP

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PP	-40 °C ... +105 °C, for fixed installation -25 °C ... +105 °C, for flexible use	Ecolab, FDA	0.6 Nm	Female connector, M8, 3-pin
				Female connector, M8, 4-pin

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP67/ IP69K	4 A	≤ 60 V	Female connector, M8, 3-pin, straight 	Open cable end	2 m	DOL-0803-G02MRN	6058504
							10 m	DOL-0803-G10MRN	6058506
		IP67/ IP69K	4 A	≤ 60 V	Female connector, M8, 3-pin, angled, with LED 	Open cable end	2 m	DOL-0803-W02MRN	6058507
							10 m	DOL-0803-W10MRN	6058509


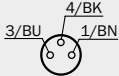
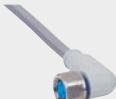
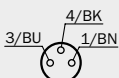
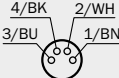

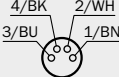
Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP67/ IP69K	4 A	≤ 60 V	Female connector, M8, 3-pin, angled, with LED 	Open cable end	2 m	DOL-0803-L02MRN	6058787
							5 m	DOL-0803-L05MRN	6058788
							10 m	DOL-0803-L10MRN	6058789
Female connector, M8, 4-pin		IP67/ IP69K	4 A	≤ 30 V	Female connector, M8, 4-pin, straight 	Open cable end	2 m	DOL-0804-G02MRN	6058510
							5 m	DOL-0804-G05MRN	6058511
							10 m	DOL-0804-G10MRN	6058512
							25 m	DOL-0804-G25MRN	6058513
		IP67/ IP69K	4 A	≤ 30 V	Female connector, M8, 4-pin, angled 	Open cable end	2 m	DOL-0804-W02MRN	6058514
							5 m	DOL-0804-W05MRN	6058515
							10 m	DOL-0804-W10MRN	6058517
							25 m	DOL-0804-W25MRN	6058518
		IP67/ IP69K	4 A	≤ 30 V	Female connector, M8, 4-pin, straight, with LED 	Open cable end	2 m	DOL-0804-L02MRN	6058790
							5 m	DOL-0804-L05MRN	6058791
10 m							DOL-0804-L10MRN	6058792	

Connecting cables with M8 female connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	Ecolab, CSA, UL	0.4 Nm	Female connector, M8, 3-pin
				Female connector, M8, 4-pin



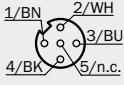


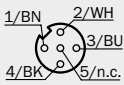



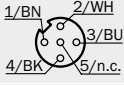


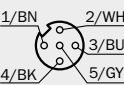
Suitable torque wrench

Figure	Description	Type	Part no.
	M08 torque wrench (AF10, 0.4 Nm)	TOOL-TW04M08AF10	5337210

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP65/ IP67/ IP69K	4 A	≤ 60 V	Female connector, M8, 3-pin, straight 	Open cable end	2 m	DOL-0803-G02MNI	6059177
							5 m	DOL-0803-G05MNI	6059178
							10 m	DOL-0803-G10MNI	6059179
							25 m	DOL-0803-G25MNI	6059191
		IP65/ IP67/ IP69K	4 A	≤ 60 V	Female connector, M8, 3-pin, angled 	Open cable end	2 m	DOL-0803-W02MNI	6059187
							5 m	DOL-0803-W05MNI	6059188
							10 m	DOL-0803-W10MNI	6059190
							25 m	DOL-0803-W25MNI	6059192
Female connector, M8, 4-pin		IP65/ IP67/ IP69K	4 A	≤ 30 V	Female connector, M8, 4-pin, straight 	Open cable end	2 m	DOL-0804-G02MNI	6059193
							5 m	DOL-0804-G05MNI	6059194
							10 m	DOL-0804-G10MNI	6059195
							25 m	DOL-0804-G25MNI	6059196
		IP65/ IP67/ IP69K	4 A	≤ 30 V	Female connector, M8, 4-pin, angled 	Open cable end	2 m	DOL-0804-W02MNI	6059197
							5 m	DOL-0804-W05MNI	6059198
							10 m	DOL-0804-W10MNI	6059199
							25 m	DOL-0804-W25MNI	6059200

Connecting cables with M12 female connector, PP

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PP	-40 °C ... +105 °C, for fixed installation -25 °C ... +105 °C, for flexible use	Ecolab, FDA	1 Nm	Female connector, M12, 4-pin
				Female connector, M12, 5-pin

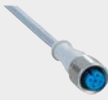
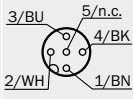

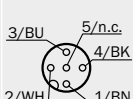

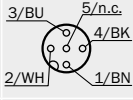

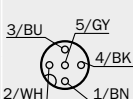
Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 4-pin	 	IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, straight 	Open cable end	2 m	DOL-1204-G02MRN	6058291
							5 m	DOL-1204-G05MRN	6058476
							10 m	DOL-1204-G10MRN	6058478
							15 m	DOL-1204-G15MRN	2092884
							25 m	DOL-1204-G25MRN	6058480
	 	IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, angled 	Open cable end	2 m	DOL-1204-W02MRN	6058474
							5 m	DOL-1204-W05MRN	6058477
							10 m	DOL-1204-W10MRN	6058479
							25 m	DOL-1204-W25MRN	6058481
	  	IP67/ IP69K	4 A	≤ 24 V	Female connector, M12, 4-pin, angled, with LED 	Open cable end	2 m	DOL-1204-L02MRN	6058482
							5 m	DOL-1204-L05MRN	6058483
							10 m	DOL-1204-L10MRN	6058484
25 m							DOL-1204-L25MRN	6058485	
Female connector, M12, 5-pin	 	IP67/ IP69K	4 A	≤ 60 V	Female connector, M12, 5-pin, straight 	Open cable end	2 m	DOL-1205-G02MRN	6058494
							5 m	DOL-1205-G05MRN	6058495
							10 m	DOL-1205-G10MRN	6058496
							25 m	DOL-1205-G25MRN	6058497

Connecting cables with M12 female connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	Ecolab, CSA, UL	0.6 Nm	Female connector, M12, 4-pin
				Female connector, M12, 5-pin



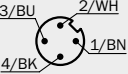

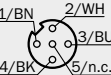
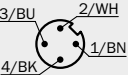
Suitable torque wrench

Figure	Description	Type	Part no.
	M12 torque wrench (AF14, 0.6 Nm)	TOOL-TW06M12AF14	5329575

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 4-pin		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, straight 	Open cable end	2 m	DOL-1204-G02MNI	6052613
							5 m	DOL-1204-G05MNI	6052615
							10 m	DOL-1204-G10MNI	6052617
							25 m	DOL-1204-G25MNI	6052619
		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, angled 	Open cable end	2 m	DOL-1204-W02MNI	6052614
							5 m	DOL-1204-W05MNI	6052616
							10 m	DOL-1204-W10MNI	6052618
							25 m	DOL-1204-W25MNI	6052620
Female connector, M12, 4-pin		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, angled, with LED 	Open cable end	2 m	DOL-1204-L02MNI	6052621
							5 m	DOL-1204-L05MNI	6052622
							10 m	DOL-1204-L10MNI	6052623
							25 m	DOL-1204-L25MNI	6052624
Female connector, M12, 5-pin		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 5-pin, straight 	Open cable end	2 m	DOL-1205-G02MNI	6052625
							5 m	DOL-1205-G05MNI	6052626
							10 m	DOL-1205-G10MNI	6052627
							25 m	DOL-1205-G25MNI	6052628

Connection cables with M12 female and male connector, PP

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PP	-40 °C ... +105 °C, for fixed installation -25 °C ... +105 °C, for flexible use	Ecolab, FDA	1 Nm	Female connector, M12, 4-pin



Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 4-pin		IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, angled 	Male connector, M12, 4-pin, straight 	0.6 m	DSL-1204-B0M6RN	6058501
							2 m	DSL-1204-B02MRN	6058502
							5 m	DSL-1204-B05MRN	6058503
		IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, straight 	Male connector, M12, 4-pin, straight 	0.6 m	DSL-1204-G0M6RN	6058498
							2 m	DSL-1204-G02MRN	6058499
							5 m	DSL-1204-G05MRN	6058500

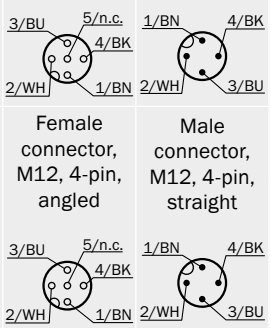
Connection cables with M12 female and male connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type head A	Type head B
PVC	-30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	Ecolab, CSA, UL	0.6 Nm	Female connector, M12, 4-pin, straight Female connector, M12, 4-pin, angled	Male connector, M12, 4-pin, straight Male connector, M12, 4-pin, straight

Suitable torque wrench

Figure	Description	Type	Part no.
	M12 torque wrench (AF14, 0.6 Nm)	TOOL-TW06M12AF14	5329575

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 4-pin		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, straight	Male connector, M12, 4-pin, straight	0.6 m	DSL-1204-G0M6NI	6052629
							2 m	DSL-1204-G02MNI	6052630
							5 m	DSL-1204-G05MNI	6052631
		IP65/ IP67/ IP69K	4 A	≤ 250 V	Female connector, M12, 4-pin, angled	Male connector, M12, 4-pin, straight	0.6 m	DSL-1204-B0M6NI	6052632
							2 m	DSL-1204-B02MNI	6052633
							5 m	DSL-1204-B05MNI	6052634





At a glance

- Very good resistance to oils, coolants, and lubricants
- PWIS free
- Silicone free
- Flame resistant and self extinguishing
- Meets the requirements of the IP65, IP66K, and IP67 enclosure ratings
- Suitable for drag chains
- Halogen free
- Resistant to microbes and hydrolysis

Your benefits

- The standard connecting cable for all industries which use oils, coolants, and lubricants.
- The high elasticity makes the product very flexible and easy to lay.
- The large number of bending cycles (over five million) make the product suitable for use in drag chains.
- Variants with 3 status display LEDs (Power, N/C, N/O)

= suitable for drag chains = LED = shielded

→ www.sick.de/plug_connectors_and_cables

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



Ordering information

Other device versions available here → www.sick.de/plug_connectors_and_cables


















Suitable torque wrenches

For more information → [see page 40](#)

Figure	Description	Type	Part no.
	M08 torque wrench (AF9, 0.4 Nm)	TOOL-TW06M08AF09	5337207
	M12 torque wrench (AF13, 0.6 Nm)	TOOL-TW06M12AF13	5337208

Connecting cables with M8 female connector, PUR







Cable material	Temperature resistance	Certifications	Tightening torque	Type
PUR, halogen free	-25 °C ... 85 °C, head -40 °C ... +80 °C, for fixed installation -25 °C ... +80 °C, for flexible use	UL	0.4 Nm	Female connector, M8, 3-pin
				Female connector, M8, 4-pin

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, straight	Open cable end	1 m	YF8U13-010UA1XLEAX	2094779
							2 m	YF8U13-020UA1XLEAX	2094782
							3 m	YF8U13-030UA1XLEAX	2094787
							5 m	YF8U13-050UA1XLEAX	2094788
							10 m	YF8U13-100UA1XLEAX	2094789
							20 m	YF8U13-200UA1XLEAX	2094790
	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, angled	Open cable end	2 m	YG8U13-020UA1XLEAX	2094794
							5 m	YG8U13-050UA1XLEAX	2095586
							10 m	YG8U13-100UA1XLEAX	2095588
  	IP65/ IP66K/ IP67	4 A	24 V	Female connector, M8, 3-pin, angled, with LED	Open cable end	2 m	YI8U13-020UA1XLEAX	2095593	
						5 m	YI8U13-050UA1XLEAX	2095594	
						10 m	YI8U13-100UA1XLEAX	2095595	
Female connector, M8, 4-pin	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight	Open cable end	2 m	YF8U14-020UA3XLEAX	2094791
							5 m	YF8U14-050UA3XLEAX	2094792
							10 m	YF8U14-100UA3XLEAX	2094793
							15 m	YF8U14-150UA3XLEAX	2095580
							20 m	YF8U14-200UA3XLEAX	2095582
	  	IP65/ IP66K/ IP67	4 A	30 V	Female connector, M8, 4-pin, straight, shielded	Open cable end	5 m	YF8U24-050UB4XLEAX	2096200
							10 m	YF8U24-100UB4XLEAX	2096201
	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, angled	Open cable end	2 m	YG8U14-020UA3XLEAX	2095589
							5 m	YG8U14-050UA3XLEAX	2095590
							10 m	YG8U14-100UA3XLEAX	2095591
	  	IP65/ IP66K/ IP67	4 A	24 V	Female connector, M8, 4-pin, angled, with LED	Open cable end	2 m	YI8U14-020UA3XLEAX	2095596
							5 m	YI8U14-050UA3XLEAX	2095597
							10 m	YI8U14-100UA3XLEAX	2095598




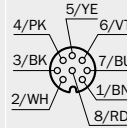



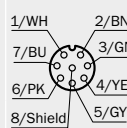



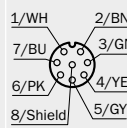
Connecting cables with M12 female connector, PUR

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PUR, halogen free	-25 °C ... 85 °C, head -40 °C ... +80 °C, for fixed installation -25 °C ... +80 °C, for flexible use	UL, CE ¹⁾	0.6 Nm	Female connector, M12, 3-pin
				Female connector, M12, 4-pin
				Female connector, M12, 5-pin
				Female connector, M12, 8-pin

¹⁾ Applies to cables with a rated voltage > 75 V DC.

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.						
Female connector, M12, 3-pin		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 3-pin, straight	Open cable end	1.5 m	YF2A13-015UB1XLEAX	2095603						
							2 m	YF2A13-020UB1XLEAX	2095604						
							5 m	YF2A13-050UB1XLEAX	2095605						
							10 m	YF2A13-100UB1XLEAX	2095606						
		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 3-pin, angled	Open cable end	2 m	YG2A13-020UB1XLEAX	2095752						
							5 m	YG2A13-050UB1XLEAX	2095753						
Female connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, straight	Open cable end	2 m	YF2A14-020UB3XLEAX	2095607						
							5 m	YF2A14-050UB3XLEAX	2095608						
							10 m	YF2A14-100UB3XLEAX	2095609						
							15 m	YF2A14-150UB3XLEAX	2095610						
							20 m	YF2A14-200UB3XLEAX	2095611						
							25 m	YF2A14-250UB3XLEAX	2095615						
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 4-pin, straight, shielded	Open cable end	5 m	YF2A24-050UB4XLEAX	2095729						
							10 m	YF2A24-100UB4XLEAX	2095730						
								IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, angled	Open cable end	1.2 m	YG2A14-012UB3XLEAX	2095765
													2 m	YG2A14-020UB3XLEAX	2095766
5 m	YG2A14-050UB3XLEAX	2095767													
10 m	YG2A14-100UB3XLEAX	2095768													
15 m	YG2A14-150UB3XLEAX	2095769													
20 m	YG2A14-200UB3XLEAX	2095770													
25 m	YG2A14-250UB3XLEAX	2095771													
	IP65/ IP66K/ IP67	4 A	24 V	Female connector, M12, 4-pin, angled, with LED	Open cable end	2 m	YI2A14-020UB3XLEAX	2095836							
						5 m	YI2A14-050UB3XLEAX	2095837							
						10 m	YI2A14-100UB3XLEAX	2095838							
						25 m	YI2A14-250UB3XLEAX	2095839							



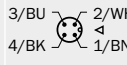


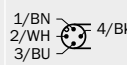
Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 5-pin	 	IP65/ IP66K/ IP67	4 A	125 V	Female connector, M12, 5-pin, straight 	Open cable end	2 m	YF2A15-020UB5XLEAX	2095617
							5 m	YF2A15-050UB5XLEAX	2095618
							9 m	YF2A15-090UB5XLEAX	2095846
							10 m	YF2A15-100UB5XLEAX	2095619
							15 m	YF2A15-150UB5XLEAX	2095620
							20 m	YF2A15-200UB5XLEAX	2095614
							30 m	YF2A15-300UB5XLEAX	2095621
	  	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 5-pin, straight, shielded 	Open cable end	1.5 m	YF2A25-015UB6XLEAX	2095833
							3 m	YF2A25-030UB6XLEAX	2095834
							5 m	YF2A25-050UB6XLEAX	2095733
							10 m	YF2A25-100UB6XLEAX	2095734
	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 5-pin, angled 	Open cable end	2 m	YG2A15-020UB5XLEAX	2095772
							5 m	YG2A15-050UB5XLEAX	2095773
							10 m	YG2A15-100UB5XLEAX	2095774
	  	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 5-pin, angled, shielded 	Open cable end	3 m	YG2A25-030UB6XLEAX	2095791
5 m							YG2A25-050UB6XLEAX	2095792	
10 m							YG2A25-100UB6XLEAX	2095793	
20 m							YG2A25-200UB6XLEAX	2095795	
Female connector, M12, 8-pin	 	IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, straight 	Open cable end	2 m	YF2A18-020UA5XLEAX	2095652
							5 m	YF2A18-050UA5XLEAX	2095653
							10 m	YF2A18-100UA5XLEAX	2095654
							15 m	YF2A18-150UA5XLEAX	2095679
							20 m	YF2A18-200UA5XLEAX	2095680
							30 m	YF2A18-300UA5XLEAX	2095681
	  	IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, straight, shielded 	Open cable end	5 m	YF2A28-050UA6XLEAX	2095835
							10 m	YF2A28-100UA6XLEAX	2095749
							15 m	YF2A28-150UA6XLEAX	2095750
	 	IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, angled 	Open cable end	2 m	YG2A18-020UA5XLEAX	2095779
							5 m	YG2A18-050UA5XLEAX	2095780
							10 m	YG2A18-100UA5XLEAX	2095781

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 8-pin	  	IP67	2 A	≤ 36 V AC/DC	Female connector, M12, 8-pin, straight, shielded 	Open cable end, shielded	2 m	DOL-1208-G02MAC1	6032866
							5 m	DOL-1208-G05MAC1	6032867
							10 m	DOL-1208-G10MAC1	6032868
							20 m	DOL-1208-G20MAC1	6032869
	  	IP65/ IP67	2 A	≤ 30 V	Female connector, M12, 8-pin, straight, shielded 	Open cable end, shielded	2.5 m	DOL-127SG2M5E-25KM0	2076540
							5 m	DOL-127SG05ME25KM0	2076541
							7.5 m	DOL-127SG7M5E25KM0	2076542
							10 m	DOL-127SG10ME-25KM0	2076543
							15 m	DOL-127SG15ME-25KM0	2076544
							20 m	DOL-127SG20ME25KM0	2076545
	  	IP65/ IP67	2 A	≤ 30 V	Female connector, M12, 8-pin, angled, shielded 	Open cable end, shielded	7.5 m	DOL-127SW7M5E-25KM0	2076549
							10 m	DOL-127SW10ME-25KM0	2076550
15 m							DOL-127SW15ME-25KM0	2076551	

Connecting cables with M12 male connector, PUR

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PUR, halogen free	-25 °C ... 85 °C, head -40 °C ... +80 °C, for fixed installation -25 °C ... +80 °C, for flexible use	UL, CE ¹⁾	0.6 Nm	Male connector, M12, 4-pin
				Male connector, M12, 5-pin
				Male connector, M12, 8-pin



¹⁾ Applies to cables with a rated voltage > 75 V DC.







Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Male connector, M12, 4-pin	 	IP65/ IP66K/ IP67	4 A	250 V	Male connector, M12, 4-pin, straight 	Open cable end	2 m	YM2A14-020UB3XLEAX	2095867
							5 m	YM2A14-050UB3XLEAX	2095858
							10 m	YM2A14-100UB3XLEAX	2095859
							15 m	YM2A14-150UB3XLEAX	2095866
	 	IP65/ IP66K/ IP67	4 A	250 V	Male connector, M12, 4-pin, angled 	Open cable end	5 m	YN2A14-050UB3XLEAX	2096628
							10 m	YN2A14-150UB3XLEAX	2096629

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Male connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	125 V	Male connector, M12, 5-pin, straight 	Open cable end	1 m	YM2A15-010UB5XLEAX	2095104
							2 m	YM2A15-020UB5XLEAX	2095840
							5 m	YM2A15-050UB5XLEAX	2095842
							10 m	YM2A15-100UB5XLEAX	2095843
Male connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	60 V	Male connector, M12, 5-pin, straight, shielded 	Open cable end	5 m	YM2A25-050UB6XLEAX	2096684
Male connector, M12, 8-pin		IP65/ IP66K/ IP67	2 A	30 V	Male connector, M12, 8-pin, straight 	Open cable end	1 m	YM2A18-010UA5XLEAX	2095871
							2 m	YM2A18-020UA5XLEAX	2095868
							5 m	YM2A18-050UA5XLEAX	2095869
							10 m	YM2A18-100UA5XLEAX	2095870
Male connector, M12, 8-pin		IP65/ IP66K/ IP67	2 A	30 V	Male connector, M12, 8-pin, angled, shielded 	Open cable end	10 m	YN2A28-100UA6XLEAX	2095794
Male connector, M12, 8-pin		IP65/ IP67	2 A	≤ 30 V	Male connector, M12, 8-pin, straight, shielded 	Open cable end, shielded	5 m	STL-127SG05ME25KM0	2075982
							15 m	STL-127SG15ME25KM0	2075983
							5 m	STL-127SW05ME25KM0	2075985
								15 m	STL-127SW15ME25KM0

Connection cables with M8 female and male connector, PUR

Cable material	Temperature resistance	Certifications	Tightening torque	Type head A	Type head B
PUR, halogen free	-25 °C ... 85 °C, head -40 °C ... +80 °C, for fixed installation -25 °C ... +80 °C, for flexible use	UL	0.4 Nm (M8) 0.6 Nm (M12)	Female connector, M8, 3-pin,	Male connector, M8, 3-pin
				Female connector, M8, 3-pin	Male connector, M12, 3-pin
				Female connector, M8, 4-pin	Male connector, M8, 4-pin
				Female connector, M8, 4-pin	Male connector, M12, 4-pin

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, straight	Male connector, M8, 3-pin, straight	0.3 m	YF8U13-C30UA1M8U13	2095961
							0.5 m	YF8U13-C50UA1M8U13	2096300
							0.6 m	YF8U13-C60UA1M8U13	2096298
							1 m	YF8U13-010UA1M8U13	2096301
							1.5 m	YF8U13-015UA1M8U13	2096302
							2 m	YF8U13-020UA1M8U13	2096304
							2.5 m	YF8U13-025UA1M8U13	2096305
							3 m	YF8U13-030UA1M8U13	2096306
							5 m	YF8U13-050UA1M8U13	2096308
							10 m	YF8U13-100UA1M8U13	2096309
20 m	YF8U13-200UA1M8U13	2096310							
Female connector, M8, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, straight	Male connector, M8, 3-pin, angled	0.1 m	YF8U13-C10UA1N8U13	2095990
							0.6 m	YF8U13-C60UA1M2A13	2096134
								YF8U13-020UA1M2A13	2096169
							5 m	YF8U13-050UA1M2A13	2096170
								0.6 m	YG8U13-C60UA1M2A13
							2 m		YG8U13-020UA1M2A13

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 4-pin	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight	Male connector, M8, 4-pin, straight	0.6 m	YF8U14-C60UA3M8U14	2096346
							2 m	YF8U14-020UA3M8U14	2096347
							5 m	YF8U14-050UA3M8U14	2096348
	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight	Male connector, M12, 4-pin, straight	0.6 m	YF8U14-C60UA3M2A14	2096135
							2 m	YF8U14-020UA3M2A14	2096136
							5 m	YF8U14-050UA3M2A14	2096137
	 	IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, angled	Male connector, M12, 4-pin, straight	0.6 m	YG8U14-C60UA3M2A14	2096681
							2 m	YG8U14-020UA3M2A14	2096682
							5 m	YG8U14-050UA3M2A14	2096683

Connection cables with M12 female and male connector, PUR

Cable material	Temperature resistance	Certifications	Tightening torque	Type head A	Type head B
PUR, halogen free	-25 °C ... 85 °C, head -40 °C ... +80 °C, for fixed installation -25 °C ... +80 °C, for flexible use	UL	0.4 Nm (M8) 0.6 Nm (M12)	Female connector, M12, 3-pin	Male connector, M8, 3-pin
				Female connector, M12, 3-pin	Male connector, M12, 3-pin
				Female connector, M12, 4-pin	Male connector, M8, 4-pin
				Female connector, M12, 5-pin	Male connector, M12, 5-pin
				Female connector, M12, 8-pin	Male connector, M12, 8-pin

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 3-pin, straight	Male connector, M8, 3-pin, straight	0.6 m	YF2A13-C60UA1M8U13	2095731
							2 m	YF2A13-020UA1M8U13	2095732
							5 m	YF2A13-050UA1M8U13	2095735
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 3-pin, straight	Male connector, M12, 3-pin, straight	0.6 m	YF2A13-C60UB1M2A13	2095991
							1 m	YF2A13-010UB1M2A13	2095992
							3 m	YF2A13-030UB1M2A13	2095994
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 3-pin, angled	Male connector, M12, 3-pin, straight	0.6 m	YG2A13-C60UB1M2A13	2095737
							1 m	YG2A13-010UB1M2A13	2095877
							2 m	YG2A13-020UB1M2A13	2095993
Female connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 4-pin, straight	Male connector, M8, 4-pin, straight	0.6 m	YF2A14-C60UA3M8U14	2096111
							2 m	YF2A14-020UA3M8U14	2096112
							5 m	YF2A14-050UA3M8U14	2096113
		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, straight	Male connector, M12, 4-pin, straight	0.2 m	YF2A14-C20UB3M2A14	2096013
							0.6 m	YF2A14-C60UB3M2A14	2095999
							1 m	YF2A14-010UB3M2A14	2095997
							2 m	YF2A14-020UB3M2A14	2096000
							5 m	YF2A14-050UB3M2A14	2096001
							10 m	YF2A14-100UB3M2A14	2096002
	IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, angled	Male connector, M12, 4-pin, straight	0.6 m	YG2A14-C60UB3M2A14	2095740	
						2 m	YG2A14-020UB3M2A14	2095741	
						5 m	YG2A14-050UB3M2A14	2095857	
	IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, straight	Male connector, M12, 4-pin, angled	0.6 m	YF2A14-C60UB3N2A14	2095728	
						5 m	YF2A14-050UB3N2A14	2095787	
						10 m	YF2A14-100UB3N2A14	2096114	
						15 m	YF2A14-150UB3N2A14	2096115	
Female connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	24 V	Female connector, M12, 4-pin, angled with LED	Male connector, 4-pin, angled	0.6 m	YI2A14-C60UB3N2A14	2095788
							2 m	YI2A14-020UB3N2A14	2095790

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	125 V	Female connector, M12, 5-pin, straight	Male connector, M12, 5-pin, straight	0,15 m	YF2A15-C15UB5M2A15	2096004
							0.6 m	YF2A15-C60UB5M2A15	2096006
							1 m	YF2A15-010UB5M2A15	2096007
							1.5 m	YF2A15-015UB5M2A15	2096008
							2 m	YF2A15-020UB5M2A15	2096009
							5 m	YF2A15-050UB5M2A15	2096010
							10 m	YF2A15-100UB5M2A15	2096011
							15 m	YF2A15-150UB5M2A15	2096171
							20 m	YF2A15-200UB5M2A15	2095844
							30 m	YF2A15-300UB5M2A15	2095845
Female connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	125 V	Female connector, M12, 5-pin, angled	Male connector, M12, 5-pin, straight	0.6 m	YG2A15-C60UB5M2A15	2095600
							2 m	YG2A15-020UB5M2A15	2095601
							5 m	YG2A15-050UB5M2A15	2095602
Female connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	24 V	Female connector, M12, 5-pin, angled with LED	Male connector, M12, 5-pin, straight	2 m	YI2A15-020UB5M2A15	2096138
Female connector, M12, 8-pin		IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, straight	Male connector, M12, 8-pin, straight	0.6 m	YF2A18-C60UA5M2A18	2096031
							1 m	YF2A18-010UA5M2A18	2096032
							1.5 m	YF2A18-015UA5M2A18	2096012
							2 m	YF2A18-020UA5M2A18	2096033
							5 m	YF2A18-050UA5M2A18	2096034
	10 m	YF2A18-100UA5M2A18	2096035						
		IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, straight, shielded	Male connector, M12, 8-pin, straight, shielded	1 m	YF2A28-010UA6M2A28	2096108
							2 m	YF2A28-020UA6M2A28	2096105
							5 m	YF2A28-050UA6M2A28	2096106
							10 m	YF2A28-100UA6M2A28	2096109
Female connector, M12, 8-pin								IP65/ IP67	2 A
Female connector, M12, 8-pin		IP65/ IP67	2 A	≤ 30 V	Female connector, M12, 8-pin, straight	Male connector, M12, 8-pin, straight	0.5 m	DSL-127SG0M5E-25KM0	2076627
							1 m	DSL-127SG01ME25KM0	2076628
							1.5 m	DSL-127SG1M5E25KM0	2076629
							20 m	DSL-127SG20ME25KM0	2078579



At a glance

- Very good resistance to chemicals
- PWIS free
- Silicone free
- Flame resistant and self extinguishing
- Enclosure rating IP65, IP66K, IP67

Your benefits

- Easy to use because the cables are very easy to strip
- Good quality at the best price
- Meets the requirements of the IP65, IP66K, and IP67 enclosure ratings
- Variants with 3 status display LEDs (Power, N/C, N/O)

= suitable for drag chains = LED = shielded

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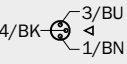



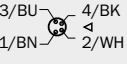

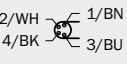
Suitable torque wrenches

For more information → [see page 40](#)

Figure	Description	Type	Part no.
	M08 torque wrench (AF9, 0.4 Nm)	TOOL-TW06M08AF09	5337207
	M12 torque wrench (AF13, 0.6 Nm)	TOOL-TW06M12AF13	5337208

Connecting cables with M8 female connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL	0.4 Nm	Female connector, M8, 3-pin
				Female connector, M8, 4-pin



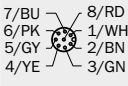


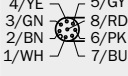
Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, straight 	Open cable end	2 m	YF8U13-020VA1XLEAX	2095860
							5 m	YF8U13-050VA1XLEAX	2095884
							10 m	YF8U13-100VA1XLEAX	2095885
							15 m	YF8U13-150VA1XLEAX	2095886
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, angled 	Open cable end	2 m	YG8U13-020VA1XLEAX	2096165
							5 m	YG8U13-050VA1XLEAX	2096166
							10 m	YG8U13-100VA1XLEAX	2096209
							15 m	YG8U13-150VA1XLEAX	2096210
Female connector, M8, 4-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight 	Open cable end	1.5 m	YF8U14-015VA3XLEAX	2095894
							2 m	YF8U14-020VA3XLEAX	2095888
							2.5 m	YF8U14-025VA3XLEAX	2095876
							3 m	YF8U14-030VA3XLEAX	2095896
							5 m	YF8U14-050VA3XLEAX	2095889
							10 m	YF8U14-100VA3XLEAX	2095890
							15 m	YF8U14-150VA3XLEAX	2095899
							20 m	YF8U14-200VA3XLEAX	2095891
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, angled 	Open cable end	2 m	YG8U14-020VA3XLEAX	2095962
							5 m	YG8U14-050VA3XLEAX	2095963
							10 m	YG8U14-100VA3XLEAX	2095964
							30 m	YG8U14-300VA3XLEAX	2095968

Connecting cables with M12 female connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL, CE ¹⁾	0.6 Nm	Female connector, M12, 4-pin
				Female connector, M12, 5-pin
				Female connector, M12, 8-pin


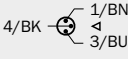
¹⁾ Applies to cables with a rated voltage > 75 V DC.

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, straight	Open cable end	2 m	YF2A14-020VB3XLEAX	2096234
							5 m	YF2A14-050VB3XLEAX	2096235
							10 m	YF2A14-100VB3XLEAX	2096236
							15 m	YF2A14-150VB3XLEAX	2096237
							20 m	YF2A14-200VB3XLEAX	2096238
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M12, 4-pin, straight, shielded	Open cable end	5 m	YF2A24-050VB4XLEAX	2096247
		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, angled	Open cable end	2 m	YG2A14-020VB3XLEAX	2095895
							5 m	YG2A14-050VB3XLEAX	2095897
							10 m	YG2A14-100VB3XLEAX	2095898
							15 m	YG2A14-150VB3XLEAX	2096213
							20 m	YG2A14-200VB3XLEAX	2096214
	IP65/ IP66K/ IP67	4 A	6 V	Female connector, M12, 4-pin, angled, shielded	Open cable end	5 m	YG2A24-050VB4XLEAX	2096221	
	IP65/ IP66K/ IP67	4 A	24 V	Female connector, M12, 4-pin, angled, with LED	Open cable end	2 m	YI2A14-020VB3XLEAX	2096222	
						5 m	YI2A14-050VB3XLEAX	2096223	
						10 m	YI2A14-100VB3XLEAX	2096231	
Female connector, M12, 5-pin		IP65/ IP66K/ IP67	4 A	125 V	Female connector, M12, 5-pin, straight	Open cable end	2 m	YF2A15-020VB5XLEAX	2096239
							5 m	YF2A15-050VB5XLEAX	2096240
							10 m	YF2A15-100VB5XLEAX	2096241
							15 m	YF2A15-150VB5XLEAX	2096242
		IP65/ IP66K/ IP67	4 A	125 V	Female connector, M12, 5-pin, angled	Open cable end	2 m	YG2A15-020VB5XLEAX	2096215
							5 m	YG2A15-050VB5XLEAX	2096216
							10 m	YG2A15-100VB5XLEAX	2096217

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 8-pin	 	IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, straight, shielded 	Open cable end	2 m	YF2A28-020VA6XLEAX	2096243
							5 m	YF2A28-050VA6XLEAX	2096244
							10 m	YF2A28-100VA6XLEAX	2096245
							15 m	YF2A28-150VA6XLEAX	2096356
							30 m	YF2A28-300VA6XLEAX	2096357
	 	IP65/ IP66K/ IP67	2 A	30 V	Female connector, M12, 8-pin, angled, shielded 	Open cable end	2 m	YG2A28-020VA6XLEAX	2096218
5 m	YG2A28-050VA6XLEAX	2096219							

Connecting cables with M8 male connector, PVC


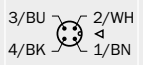


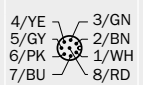
Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL	0.4 Nm	Male connector, M8, 3-pin

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Male connector, M8, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Male connector, M8, 3-pin, straight 	Open cable end	2 m	YM8U13-020VA1XLEAX	2096225
							5 m	YM8U13-050VA1XLEAX	2096226
							10 m	YM8U13-100VA1XLEAX	2096227

Connecting cables with M12 male connector, PVC


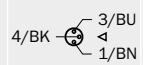
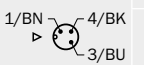
Cable material	Temperature resistance	Certifications	Tightening torque	Type
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL, CE ¹⁾	0.6 Nm	Male connector, M12, 4-pin
				Male connector, M12, 8-pin



¹⁾ Applies to cables with a rated voltage > 75 V DC.

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Male connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	250 V	Male connector, M12, 4-pin, straight 	Open cable end	5 m	YM2A14-050VB3XLEAX	2095616
							2 m	YM2A28-020VA6XLEAX	2096232
Male connector, M12, 8-pin	 	IP65/ IP66K/ IP67	2 A	30 V	Male connector, M12, 8-pin, straight, shielded 	Open cable end	5 m	YM2A28-050VA6XLEAX	2096233
							10 m	YM2A28-100VA6XLEAX	2096246

Connection cables with M8 female and male connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type head A	Type head B
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL	0.4 Nm (M8) 0.6 Nm (M12)	Female connector, M8, 3-pin	Male connector, M12, 3-pin
				Female connector, M8, 4-pin	Male connector, M8, 4-pin
				Female connector, M8, 4-pin	Male connector, M12, 4-pin



Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 3-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 3-pin, straight 	Male connector, M12, 3-pin, straight 	0.6 m	YF8U13-C60VA1M2A13	2096604
							2 m	YF8U13-020VA1M2A13	2096605
							5 m	YF8U13-050VA1M2A13	2096606

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M8, 4-pin		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight	Male connector, M8, 4-pin, straight	0.6 m	YF8U14-C60VA3M8U14	2096612
							1.5 m	YF8U14-015VA3M8U14	2096613
							2 m	YF8U14-020VA3M8U14	2096614
							3 m	YF8U14-030VA3M8U14	2096615
		IP65/ IP66K/ IP67	4 A	60 V	Female connector, M8, 4-pin, straight	Male connector, M12, 4-pin, straight	0.6 m	YF8U14-C60VA3M2A14	2096607
							2 m	YF8U14-020VA3M2A14	2096608
							5 m	YF8U14-050VA3M2A14	2096609
							10 m	YF8U14-100VA3M2A14	2096610
							20 m	YF8U14-200VA3M2A14	2096611

Connection cables with M12 female and male connector, PVC

Cable material	Temperature resistance	Certifications	Tightening torque	Type head A	Type head B
PVC	-25 °C ... 85 °C, head -30 °C ... +80 °C, for fixed installation -5 °C ... +80 °C, for flexible use	UL, CE ¹⁾	0.6 Nm	Female connector, M12, 3-pin, straight	Male connector, M12, 3-pin, straight
				Female connector, M12, 4-pin, straight	Male connector, M12, 4-pin, straight

¹⁾ Applies to cables with a rated voltage > 75 V DC.

Type	Figure	Enclosure rating	Current carrying capacity	Rated voltage	Head A connection type	Head B connection type	Length of cable	Type	Part no.
Female connector, M12, 3-pin		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 3-pin, straight	Male connector, M12, 3-pin, straight	0.6 m	YF2A13-C60VB1M2A13	2096358
							2 m	YF2A13-020VB1M2A13	2096359
							5 m	YF2A13-050VB1M2A13	2096360
Female connector, M12, 4-pin		IP65/ IP66K/ IP67	4 A	250 V	Female connector, M12, 4-pin, straight	Male connector, M12, 4-pin, straight	0.6 m	YF2A14-C60VB3M2A14	2096248
							1.5 m	YF2A14-015VB3M2A14	2096598
							2 m	YF2A14-020VB3M2A14	2096599
							5 m	YF2A14-050VB3M2A14	2096600
							10 m	YF2A14-100VB3M2A14	2096601
							20 m	YF2A14-200VB3M2A14	2096602



At a glance

- Great variety of M8 and M12 plug connectors
- Some of the plug connectors are pre-assembled

Your benefits

- A good deal of latitude in planning and flexibility for installation
- Many plug connectors have connectors which enable fast assembly
- Field wireable connectors also save time which brings the costs down
- Different connectors (differentiated by the type code ending):
 - PC = quick connection (→ Pierce connection)
 - QU = quick connection (→ Insulation displacement connection)
 - FE = quick connection (spring connection)
 - N = stainless steel knurled nut
 - X = enlarged cable feed-through

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Female connectors (field wireable), M8


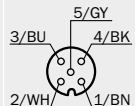

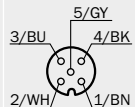

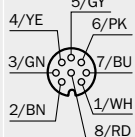

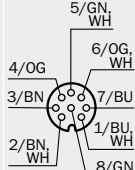
Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Female connector, M8, 3-pin, straight	IP67	4 A	≤ 60 V	0.4 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-0803-G	7902077
	Female connector, M8, 3-pin, straight	IP68	4 A	≤ 60 V	0.2 Nm	-25 °C ... +90 °C	-	●	-	-	-	DOS-0803-GPC	6042092

Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Female connector, M8, 3-pin, angled 	IP67	4 A	≤ 60 V	0.4 Nm	-40 °C ... +85 °C	-	-	●	-	-	DOS-0803-W	7902078
	Female connector, M8, 3-pin, angled 	IP67	4 A	≤ 60 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-0803-WSK	6053168
	Female connector, M8, 4-pin, straight 	IP67	4 A	≤ 30 V	0.4 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-0804-G	6009974
	Female connector, M8, 4-pin, straight 	IP68	4 A	≤ 30 V	0.2 Nm	-25 °C ... +90 °C	-	●	-	-	-	DOS-0804-GPC	6042090
	Female connector, M8, 4-pin, angled 	IP67	4 A	≤ 30 V	0.4 Nm	-40 °C ... +85 °C	-	-	●	-	-	DOS-0804-W	6009975
	Female connector, M8, 4-pin, angled 	IP67	4 A	≤ 30 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-0804-WSK	6053169

Female connectors (field wireable), M12

Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Female connector, M12, 4-pin, straight 	IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1204-G	6007302
	Female connector, M12, 4-pin, straight 	IP67/ IP69K	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1204-GN ¹⁾	6028357
	Female connector, M12, 4-pin, straight 	IP65/ IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	-	-	-	-	●	DOS-1204-GQU6	6042088
	Female connector, M12, 4-pin, straight 	IP65/ IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	-	-	-	-	●	DOS-1204-GQU8 ²⁾	6053328
	Female connector, M12, 4-pin, angled 	IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1204-W	6007303
	Female connector, M12, 4-pin, angled 	IP67/ IP69K	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1204-WN ¹⁾	6028358
	Female connector, M12, 5-pin, straight 	IP67	4 A	≤ 125 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1205-G	6009719
	Female connector, M12, 5-pin, straight 	IP67	4 A	≤ 125 V	0.6 Nm	-25 °C ... +90 °C	●	-	-	-	-	DOS-1205-GX ²⁾	6047950

¹⁾ Stainless steel knurled nut.²⁾ Extended/enlarged cable feed-through.

Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Female connector, M12, 5-pin, angled 	IP67	4 A	≤ 63 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1205-W	6009720
	Female connector, M12, 5-pin, angled 	IP67	4 A	≤ 63 V	0.6 Nm	-25 °C ... +90 °C	●	-	-	-	-	DOS-1205-WX ²⁾	6047951
	Female connector, M12, 8-pin, straight 	IP67	2 A	≤ 60 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	DOS-1208-G	6028422
	Female connector, M12, 8-pin, straight, A-coded 	IP67	1.75 A	≤ 30 V	0.4 Nm	-40 °C ... +85 °C	-	-	-	-	●	DOS-1208-GA01	6045001

¹⁾ Stainless steel knurled nut.

²⁾ Extended/enlarged cable feed-through.

Male connectors (field wireable), M8


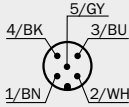

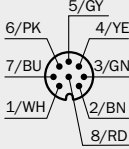

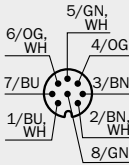
Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Male connector, M8, 3-pin, straight 	IP67	4 A	≤ 60 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-0803-G	6037322
	Male connector, M8, 3-pin, straight 	IP68	4 A	≤ 60 V	0.2 Nm	-25 °C ... +90 °C	-	●	-	-	-	STE-0803-GPC	6042093
	Male connector, M8, 3-pin, angled 	IP67	4 A	≤ 60 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-0803-WSK	6053170
	Male connector, M8, 4-pin, straight 	IP67	4 A	≤ 60 V	0.4 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-0804-G	6037323
	Male connector, M8, 4-pin, straight 	IP68	4 A	≤ 60 V	0.2 Nm	-25 °C ... +90 °C	-	●	-	-	-	STE-0804-GPC	6042091
	Male connector, M8, 4-pin, angled 	IP67	4 A	≤ 60 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-0804-WSK	6053171

Male connectors (field wireable), M12

Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Male connector, M12, 4-pin, straight 	IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-1204-G	6009932
	Male connector, M12, 4-pin, straight 	IP67/ IP69K	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-1204-GN ¹⁾	6028359
	Male connector, M12, 4-pin, straight 	IP67	4 A	≤ 250 V	0.4 Nm	-25 °C ... +90 °C	-	-	-	-	●	STE-1204-GQU6	6042089
	Male connector, M12, 4-pin, straight 	IP65/ IP67	4 A	≤ 250 V	0.4 Nm	-25 °C ... +80 °C	-	-	-	-	●	STE-1204-GQU8 ²⁾	6044998
	Male connector, M12, 4-pin, angled 	IP67	4 A	≤ 250 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-1204-W	6022084
	Male connector, M12, 5-pin, straight 	IP67	4 A	≤ 125 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-1205-G	6022083
	Male connector, M12, 5-pin, straight 	IP67	4 A	≤ 60 V	0.4 Nm	-40 °C ... +85 °C	-	-	-	●	-	STE-1205-GFE	6044999

¹⁾ Stainless steel knurled nut.

²⁾ Extended/enlarged cable feed-through.

Figure	Head A connection type	Enclosure rating	Current carrying capacity	Rated voltage	Tightening torque	Temperature resistance	Screw-type terminals	Pierce connection	Solder connection	Spring-cage connection	Cutting technology	Type	Part no.
	Male connector, M12, 5-pin, angled 	IP67	4 A	≤ 125 V	0.6 Nm	-40 °C ... +85 °C	●	-	-	-	-	STE-1205-W	6022082
	Male connector, M12, 8-pin, straight 	IP67	2 A	≤ 63 V	0.4 Nm	-25 °C ... +90 °C	●	-	-	-	-	STE-1208-G	6033269
	Male connector, M12, 8-pin, straight, A-coded 	IP67	1.75 A	≤ 30 V	0.4 Nm	-40 °C ... +85 °C	-	-	-	-	●	STE-1208-GA01	6044892

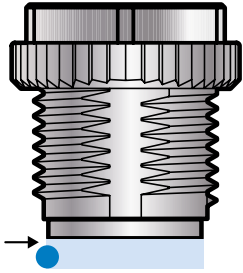
¹⁾ Stainless steel knurled nut.

²⁾ Extended/enlarged cable feed-through.

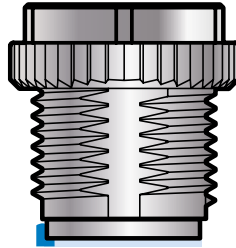
Accessories

SICK offers suitable torque wrenches as accessories for its M8 and M12 connector technologies. These guarantee that the connector is tightened securely, and ensures a perfect connection between the sensor and cable.

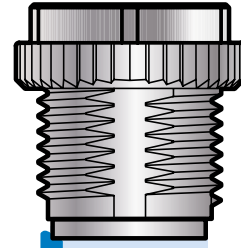
For comparison:



1. The connector is not screwed tight, thereby allowing medium to penetrate between the connector and O-ring.



2. The connector is screwed too tight. The connection is watertight, however the O-ring will be destroyed.



3. The connector has been tightened with the optimal tightening torque and is watertight.

Your benefits:

- Secure connection: machine downtimes due to loose screws or water ingress will be a thing of the past.
- Simple and safe: an audible “click” indicates that the defined torque has been reached.
- No more injured fingers.

Selecting a suitable torque wrench:

You will find a suitable torque wrench for your product at the start of every product overview table in this brochure.

Figure	Description	Type	Part no.
	M12 torque wrench (AF13, 0.6 Nm)	TOOL-TW06M12AF13	5337208
	M12 torque wrench (AF14, 0.6 Nm)	TOOL-TW06M12AF14	5329575
	M08 torque wrench (AF9, 0.4 Nm)	TOOL-TW06M08AF09	5337207
	M08 torque wrench (AF10, 0.4 Nm)	TOOL-TW04M08AF10	5337210

GLOSSARY

B

Bend radius

Bend radius refers to the smallest possible radius of any bends which may be made in the cable when it is installed without altering the cable properties. The bend radius is given in relation to the cable diameter.

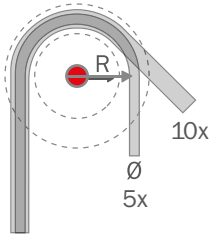


Fig.: Bend radius

Bending cycle

Bending cycles refers to the number of repetitions of bending in a cable. This property is particularly relevant when using a cable in a drag chain.

C

Color code and wire colors

M8 cables, 3-pin

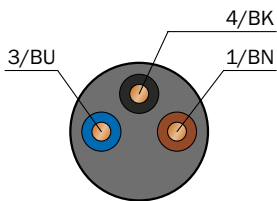


Fig.: Color code for M8 cables, 3-pin

M8 cables, 4-pin, PUR

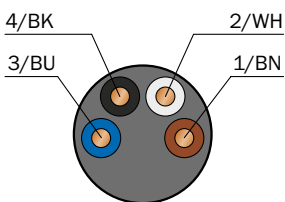


Fig.: Color code for M8 cables, 4-pin, PUR

M12 cables, 4-pin, PUR

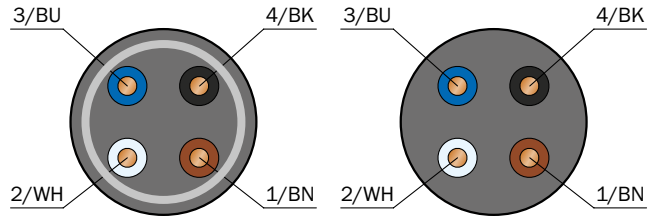


Fig.: Color code for M12 cables, 4-pin, PUR Left: shielded; right: unshielded

M12 cables, 5-pin

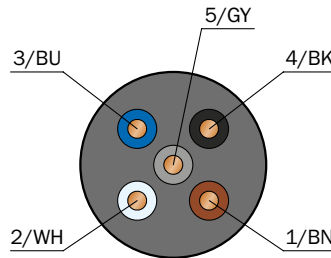


Fig.: Color code for M12 cables, 5-pin

Current carrying capacity

This is the value specified by the manufacturer for the current which a plug connector can conduct continuously and which flows through all of its contacts. In relation to this an upper limit of +40 °C is often specified for the ambient temperature for the plug connector, and this must not be exceeded.

F

Flame resistance

Materials which prevent fire from spreading or are adequately resistant to it are described as flame resistant.

H

Halogen free

Cables are said to be halogen free if the materials used do not contain halogens, e.g., salt forming chlorine, fluorine, bromine, or iodine. The insulation and jacket materials of these cables consist of polymers based on pure hydrocarbons. When such materials are burned, no corrosive or toxic gases are produced, but only water vapor and carbon dioxide.

I

Insulation displacement connection

An insulation displacement contact establishes a connection by cutting through the conductor insulation. It makes a flexible, shockproof, vibration proof, gas tight contact with the litz wire. In type code STE-1204-GQU6 the insulation displacement connection is identified by the suffix "QU".

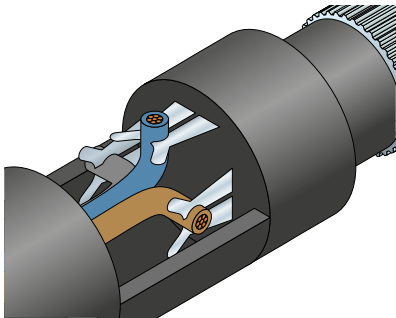


Fig.: Insulation displacement connection

IP enclosure ratings

The IP enclosure ratings define the degree of protection (ingress protection) afforded by the housing against contact, foreign bodies, and water. The first number indicates protection against contact and foreign bodies; the second number is for protection against water.

IP65

Protected against access by wire; dustproof; protection against water jets from any angle.

IP66K

Protected against access by wire; dustproof; protection against strong high-velocity water with increased pressure.

IP67

Protected against access by wire; dustproof; protection against temporary immersion in water (depth of 1 m, 30 minutes).

IP68

Protected against access by wire; dustproof; protection against lengthy immersion in water (the requirements must be higher than IP67).

IP69K

Protected against access by wire; dustproof; protection against water during high pressure cleaning and steam cleaning (100 bar at 80 °C) from a variety of angles.

Important note

Up to enclosure rating IPX6, the lower enclosure ratings are also fulfilled. With the higher enclosure ratings this does not automatically apply to the water protection grades 7, 8, and 9K. If a lower enclosure rating needs to be included this is stated using a double code.

M

Material compatibility

If different materials are used in a product, e.g., PVC cables overmolded with PUR, it is important to consider material compatibility. We recommend testing cables before laying them to check material compatibility.

	PVC	PUR	PP
Acetic acid, 10%	+++	++	+++
Acetone	-	-	+
Aluminum chloride, 10%	+++	++	*)
Ammonia	+	+++	+
Ammonium chloride	+++	++	+++
Aniline	-	-	++
ASTM fuel no. 1	+++	+++	*)
ASTM fuel no. 2	++	+	*)
ASTM oil no. 1	+++	+++	+++
ASTM oil no. 2	+++	+++	+++
ASTM oil no. 3	+++	+++	++
ATE brake fluid	++	-	+++
Benzene	-	-	-
Butanol	-	-	*)
Butyl acetate	-	-	+++
Calcium chloride, 40%	+++	++	+++
Carbon disulfide	-	-	-
Carbon tetrachloride	-	-	-
Chlorobenzene	-	-	-
Chloroform	-	-	-
Chromic acid	-	-	*)
Cyclohexanone	-	+	-
Diesel oil	-	-	*)
Dimethylformamide	-	++	+
Ethanol	++	++	+++
Ethyl acetate	-	+	*)
Ethyl ether	-	+	*)
Ethylene chloride	-	-	-
Ferric chloride, 40%	-	-	*)
Formic acid	-	-	+
Freon 12	++	+	*)
Freon 22	++	+	*)
Gear oil SAE 90	++	-	*)
Glycerol	+++	+++	+++
Glycol	+	+++	+++
Hydrochloric acid, 10%	+++	+++	++
Hydrogen peroxide, 3%	+++	-	+++
Isopropanol	-	+	*)
Kerosene (US), paraffin (GB)	-	++	*)

	PVC	PUR	PP
Lactic acid, 10%	-	+	+++
Magnesium chloride, 30%	+++	++	*)
Methanol	-	+	+++
Methyl acetate	-	-	*)
Methyl ethyl ketone	-	+	+++
Methyl glycol	-	-	*)
Methyl glycol acetate	-	-	*)
Methylene chloride	-	-	-
Nitric acid, 10%	-	-	+
Ozone	+++	+++	+
Perchloroethylene	+++	-	*)
Petroleum ether	-	+++	*)
Phosphoric acid, 10%	+++	-	+++
Potassium dichromate	+++	+++	++
Potassium hydroxide solution, 10%	+++	+++	++
Potassium nitrate	+++	+++	++
Potassium permanganate	+	-	+
Sodium chloride, 10%	+++	++	+++
Sodium hydroxide solution, 10%	+++	+++	+++
Sodium hypochlorite solution	+	+++	*)
Sulfuric acid, 30%	+++	+++	+++
Tetrachloroethylene	-	-	-
Tetrahydrofuran	-	-	-
Toluene	-	-	-
Trichloroethylene	-	-	-
Xylon	-	-	-

Resistant: +++, largely resistant: ++, slightly resistant: +, not resistant: -

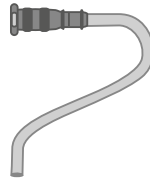
*) There are no test results or evidence concerning the behavior of polypropylene with this material.

Table: Material compatibility

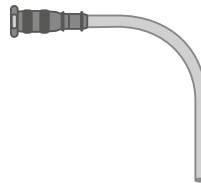
The user should always run tests to check the suitability for specific applications. The chemical resistance given applies only to unpressurized storage and, unless otherwise stated, at room temperature.

Mounting instructions

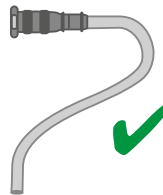
For fixed installation of cable, minimum radius: 5 x cable diameter



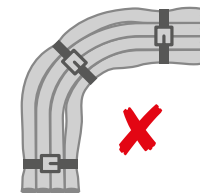
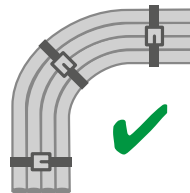
For fixed installation of cable, minimum radius: 10 x cable diameter



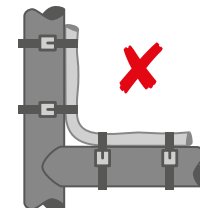
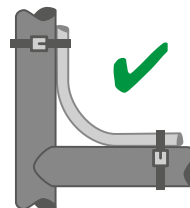
Cable bend radius



Bundling several cables



Fixed installation of cables



N

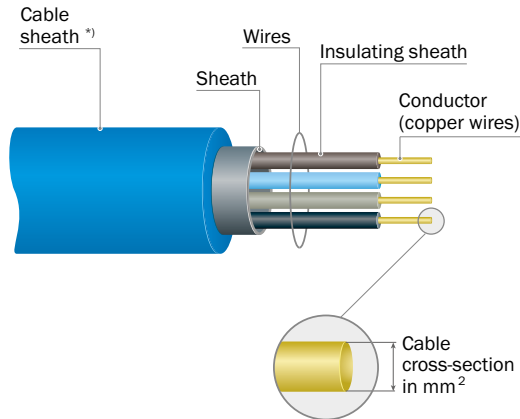
Notch sensitivity

Notch sensitivity describes the tendency of a plastic to crack at points with notches, sharp edges and abrupt changes in wall thickness, i.e., at places of stress concentration.

O

Outer jacket

The outer jacket indicates what the outer layer of the cable is made of.



*) Vital for cable material).

Fig.: Outer jacket

Overvoltage category

In various standards the possible overvoltages are divided into four categories. Three categories are relevant for plug connectors:

Overvoltage category I

Pieces of equipment, e.g., plug connectors, which are intended for use in devices or parts of systems where no overvoltage can occur. This covers mainly devices operated at low voltages.

Overvoltage category II

Pieces of equipment, e.g., plug connectors, which are intended for use in systems or parts of systems where only switching surges need to be considered, and not lightning surges. This category covers e.g., household appliances.

Overvoltage category III

Pieces of equipment, e.g., plug connectors, which are intended for use in systems or parts of systems where only switching surges need to be considered, and not lightning surges. In this category there are also special requirements for safety and availability of the equipment and the networks depending on it. It covers equipment for fixed installations, e.g., protective devices, contactors, switches and sockets.

P

Pierce connection

The contact pin pierces the individual core creating an electrical connection. The contact makes the individual cores into a contact zone.

In type code DOS-0803-GPC the Pierce connection is identified by the suffix "PC".

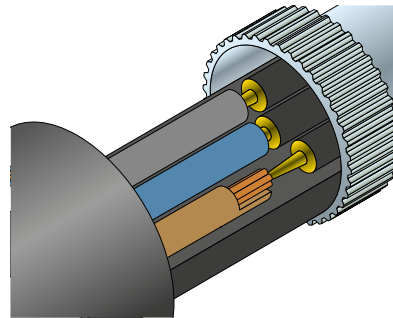


Fig.: Pierce connection

Pollution degree

The contamination to be expected in the immediate environment of a piece of equipment, e.g., a plug connector, is divided into four degrees in the IEC 60664-1 standard:

Pollution degree 1

There is no contamination or only dry, non-conductive contamination. The contamination has no effect. Examples of equipment with pollution degree 1: The inside of electrical measuring devices or electronic measuring devices.

Pollution degree 2

Normally only non-conductive contamination occurs. However, occasional, temporary conductivity caused by condensation is to be expected. Examples of equipment with pollution degree 2: Household appliances, installation material, lights, and power supply units for office equipment.

Pollution degree 3

Conductive contamination occurs or dry, non-conductive contamination that becomes conductive because condensation is to be expected. Examples of equipment with pollution degree 3: Electrical attachments for milling machines and production machines and low-voltage switchgear for machine tools.

Pollution degree 4

The contamination generates persistent conductivity caused by conductive dust, rain, or snow. Examples of equipment with pollution degree 4: Devices on the roofs and floors of electric locomotives and buses. Devices in electric underground locomotives.

PP: Polypropylene

PP is a very high quality jacket material. It is very stable. SICK's flexible PVC free polypropylene cables feature good resistance to the highly effective cleaning agents used in the food and beverage industry. In addition, these cables are highly resistant to microbes and chemicals and are suitable for drag chains. This makes them suitable for the food and beverage industry, and since they are also resistant to lactic acid, they are also ideal for dairies etc. Cables like these are also used in packaging and bottling plants and in industrial mechanical engineering and construction.

PUR: Polyurethane

PUR cables are characterized by particularly high tensile strength, crack resistance, notch resistance, and wear resistance. They are also suitable for drag chains and have high flexural fatigue strength. SICK's PUR cables are silicone and halogen free and suitable for drag chains. Their outer jacket is made of PUR and their conductor insulation out of polypropylene, which makes them very resistant to wear. They meet the requirements of VDE0472 for oil resistance and flame resistance. Other features of these cables: PVC free, PWIS free, and resistant to hydrolysis and microbes. These characteristics make PUR cables very good for flexible use in robotics, machine tools, and machining.

PVC: Polyvinyl chloride

While other thermoplastic plastics are mainly applied in the form of ready-to-use molding compound using a spray process, PVC is processed in powder form in an extruder. PVC is self extinguishing even without flame protection; it has good mechanical stability; however, it is notch sensitive. Cables made of pure PVC are suitable for moderate mechanical stress in packaging machines and assembly and production lines. They boast good resistance to acids and lyes, making them ideal for use in the food and beverage industry. SICK's PVC cables are also self extinguishing, PWIS free, and silicone free; however, they have little wear resistance and they are notch sensitive.

→ Silicone free

Product travel path

A machine's product travel path is the route a moving machine part travels along from one end position to the other.

PWIS free

The term "PWIS free" means that something is free of paint wetting impairment substances. These substances can be present in silicones, materials containing fluorine, and certain oils and fats. Components such as cables that are used in the automotive industry, especially in paint shops, must be PWIS free.

R

Rated voltage

The rated voltage is greater than or equal to the nominal voltage and it specifies the maximum value of voltage in normal operation.

Resistance to microbes and hydrolysis

Under very warm, humid climatic conditions, cables can be damaged by microbes or hydrolysis. Especially microorganisms that produce enzymes can cause severe damage to cables. The first visible sign of attack by microbes is discoloration. Then surface cracks appear, which give the microbes the opportunity to penetrate more deeply and cause complete destruction of the material.

Hydrolysis involves irreversibly breaking down polyester chains, which reduces the mechanical stability of materials. To prevent such defects, SICK provides polyurethane and polypropylene cables, which are more resistant to hydrolysis. These materials are also resistant to microbes, which can be measured by the saponification value.

Materials with a saponification value of up to 200 KOH/g are considered resistant to microbes.

Robot cables

By contrast with cables for drag chains, robot cables can withstand torsion stresses as well as bending stresses. In machines and plants sensor cables are increasingly being used in energy chains, revolving and tilting tables, and industrial robots. SICK does not currently have these cables in its portfolio; however it can supply them on request.

S

Screw connection

The screw connection is the standard for SICK M8 and M12 plug connectors. They can be used to assemble different cables and cable qualities quickly and correctly.

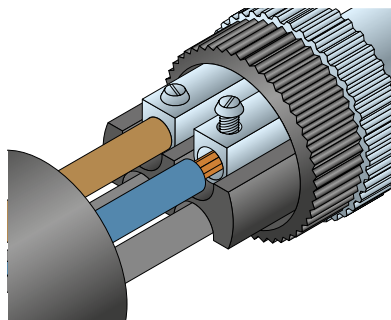
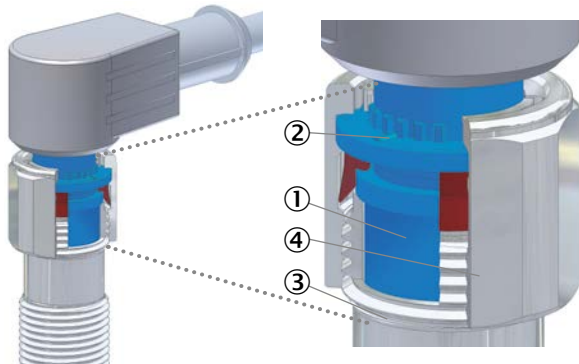


Fig.: Screw connection

Sealing concept

For PVC M12 connecting cables for hygienic and washdown zones



- ① Dual-action profile seal provides absolute impermeability.
- ② Reaching a torque of 0.6 Nm activates the mechanical vibration protection. This dual-acting interlock offers high shock and vibration resistance up to 50 G.
- ③ Integrated fixed stop prevents the plug connector from being screwed too tight.
- ④ High-quality material: Long service life and corrosion resistance verified by Ecolab certification.

→ See “Connectivity for hygienic and washdown zones” on page 4

Shielding

The devices must be made such that:

1. The generation of electromagnetic interference is limited to a level where it is possible to operate the devices as intended;
2. The devices have adequate resistance to electromagnetic interference so that it is possible to operate them as intended. With round connectors it is important to ensure that the braided shield of the cable is attached carefully to the shield connection of the plug connector. A wraparound attachment (360°) is best in this regard. However, good shielding values, often adequate in practice, can also be achieved by connecting the braided shield firmly to the conductive housing. Plug connectors made only of plastic with no metal sleeves cannot be used for this as the braided shield cannot be attached to them.

It is also important that when the connector is being plugged in that perfect contact is made with the mating connector, and that the mating connector also has a good contact with the device chassis.

Silicone free

In some areas, such as paint shops, silicones must be avoided. This is because silicones have low surface energy which can cause surface defects in paint films and adhesive layers, which are known as craters. It can even cause areas of glue to peel off. To avoid these paint wetting impairments SICK provides silicone free cables.

Standards and test parameters

Test parameters	Standards
Enclosure rating, housing	IEC 60529
Mechanical service life	IEC 60512-5
Upper limit temperature	IEC 60512-6
Lower limit temperature	IEC 60512-6
Rated voltage	IEC 60664-1
Rated impulse voltage	IEC 60664-1
Overvoltage category	IEC 60664-1
Pollution degree	IEC 60664-1
Insulating material groups	IEC 60664-1
Impulse test voltage	IEC 60664-1
Current carrying capacity	IEC 60512-3
Specific insulation resistance	IEC 60512-2
Insulation resistance	IEC 60512-2

Suitability for drag chains

A drag chain (also known as an energy chain) is a device used in mechanical engineering and construction which guides and protects flexible cables and pneumatic or hydraulic hoses. Drag chain cables are connected to machine parts exposed to repetitive movements, e.g., in machine tools, lathes, and high-bay warehouses, and they supply the connected machine parts with power and information. Drag chain cables must meet widely differing mechanical requirements depending on the application in different industry sectors, e.g., in terms of flexibility, bending and torsional properties, number of bend cycles, bend cycle frequency, travel speed, service life, wear resistance, and bend radius. If cables meet these requirements they are said to be suitable for drag chains.

Typical ranges for cables suitable for drag chains

Maximum speed	0 ... 300 m/min
Maximum acceleration	0 ... 30 m/s ²
Maximum travel length	0 ... 50 m
Minimum bend radius	> 7 x D *)
Maximum possible number of alternating bending movements	0 ... 20 million

*) D = outer diameter of drag chain.

→ Bend radius

→ Travel speed

T

TPU: thermoplastic polyurethane

TPU has good electrical properties, feels good, is very flexible over a wide temperature range, and is highly resistant to wear. Thermoplastic polyurethanes are also elastic and cold crack resistant. SICK often uses this material for overmolding plug connectors.

Travel speed

The speed at which the product travel path is covered.

→ [Product travel path](#)

W

Welding spark resistant

Radiation cross-linked PVC and PUR cables are generally resistant to welding sparks. In comparison to conventional cables they can withstand higher temperatures and they have better wear resistance so they can be used in areas where welding is being done.

Wire cross-section

Conductors or wires are made of copper. The wire cross-section is specified in mm^2 . The cross-sectional thickness is determined partly by the maximum current to be carried (amperes), and partly by the number of pins and the wires in the cable. With M8 and M12 plug connectors 0.25 mm^2 or 0.34 mm^2 wires are usually used.

DOL-0803-G02MNI ... DOS-1204-GQU8

Type	Partno.	Page	Type	Partno.	Page
DOL-0803-G02MNI	6059177	→ 12	DOL-1204-L05MRN	6058483	→ 13
DOL-0803-G02MRN	6058504	→ 10	DOL-1204-L10MNI	6052623	→ 14
DOL-0803-G05MNI	6059178	→ 12	DOL-1204-L10MRN	6058484	→ 13
DOL-0803-G10MNI	6059179	→ 12	DOL-1204-L25MNI	6052624	→ 14
DOL-0803-G10MRN	6058506	→ 10	DOL-1204-L25MRN	6058485	→ 13
DOL-0803-G25MNI	6059191	→ 12	DOL-1204-W02MNI	6052614	→ 14
DOL-0803-L02MRN	6058787	→ 11	DOL-1204-W02MRN	6058474	→ 13
DOL-0803-L05MRN	6058788	→ 11	DOL-1204-W05MNI	6052616	→ 14
DOL-0803-L10MRN	6058789	→ 11	DOL-1204-W05MRN	6058477	→ 13
DOL-0803-W02MNI	6059187	→ 12	DOL-1204-W10MNI	6052618	→ 14
DOL-0803-W02MRN	6058507	→ 10	DOL-1204-W10MRN	6058479	→ 13
DOL-0803-W05MNI	6059188	→ 12	DOL-1204-W25MNI	6052620	→ 14
DOL-0803-W10MNI	6059190	→ 12	DOL-1204-W25MRN	6058481	→ 13
DOL-0803-W10MRN	6058509	→ 10	DOL-1205-G02MNI	6052625	→ 14
DOL-0803-W25MNI	6059192	→ 12	DOL-1205-G02MRN	6058494	→ 13
DOL-0804-G02MNI	6059193	→ 12	DOL-1205-G05MNI	6052626	→ 14
DOL-0804-G02MRN	6058510	→ 11	DOL-1205-G05MRN	6058495	→ 13
DOL-0804-G05MNI	6059194	→ 12	DOL-1205-G10MNI	6052627	→ 14
DOL-0804-G05MRN	6058511	→ 11	DOL-1205-G10MRN	6058496	→ 13
DOL-0804-G10MNI	6059195	→ 12	DOL-1205-G25MNI	6052628	→ 14
DOL-0804-G10MRN	6058512	→ 11	DOL-1205-G25MRN	6058497	→ 13
DOL-0804-G25MNI	6059196	→ 12	DOL-1208-G02MAC1	6032866	→ 21
DOL-0804-G25MRN	6058513	→ 11	DOL-1208-G05MAC1	6032867	→ 21
DOL-0804-L02MRN	6058790	→ 11	DOL-1208-G10MAC1	6032868	→ 21
DOL-0804-L05MRN	6058791	→ 11	DOL-1208-G20MAC1	6032869	→ 21
DOL-0804-L10MRN	6058792	→ 11	DOL-127SG05ME25KM0	2076541	→ 21
DOL-0804-W02MNI	6059197	→ 12	DOL-127SG10ME25KM0	2076543	→ 21
DOL-0804-W02MRN	6058514	→ 11	DOL-127SG15ME25KM0	2076544	→ 21
DOL-0804-W05MNI	6059198	→ 12	DOL-127SG20ME25KM0	2076545	→ 21
DOL-0804-W05MRN	6058515	→ 11	DOL-127SG2M5E25KM0	2076540	→ 21
DOL-0804-W10MNI	6059199	→ 12	DOL-127SG7M5E25KM0	2076542	→ 21
DOL-0804-W10MRN	6058517	→ 11	DOL-127SW10ME25KM0	2076550	→ 21
DOL-0804-W25MNI	6059200	→ 12	DOL-127SW15ME25KM0	2076551	→ 21
DOL-0804-W25MRN	6058518	→ 11	DOL-127SW7M5E25KM0	2076549	→ 21
DOL-1204-G02MNI	6052613	→ 14	DOS-0803-G	7902077	→ 33
DOL-1204-G02MRN	6058291	→ 13	DOS-0803-GPC	6042092	→ 33
DOL-1204-G05MNI	6052615	→ 14	DOS-0803-W	7902078	→ 34
DOL-1204-G05MRN	6058476	→ 13	DOS-0803-WSK	6053168	→ 34
DOL-1204-G10MNI	6052617	→ 14	DOS-0804-G	6009974	→ 34
DOL-1204-G10MRN	6058478	→ 13	DOS-0804-GPC	6042090	→ 34
DOL-1204-G15MRN	2092884	→ 13	DOS-0804-W	6009975	→ 34
DOL-1204-G25MNI	6052619	→ 14	DOS-0804-WSK	6053169	→ 34
DOL-1204-G25MRN	6058480	→ 13	DOS-1204-G	6007302	→ 35
DOL-1204-L02MNI	6052621	→ 14	DOS-1204-GN	6028357	→ 35
DOL-1204-L02MRN	6058482	→ 13	DOS-1204-GQU6	6042088	→ 35
DOL-1204-L05MNI	6052622	→ 14	DOS-1204-GQU8	6053328	→ 35

Type	Partno.	Page
DOS-1204-GX	6026528	→ 35
DOS-1204-W	6007303	→ 35
DOS-1204-WN	6028358	→ 35
DOS-1205-G	6009719	→ 35
DOS-1205-GX	6047950	→ 35
DOS-1205-W	6009720	→ 36
DOS-1205-WX	6047951	→ 36
DOS-1208-G	6028422	→ 36
DOS-1208-GA01	6045001	→ 36
DSL-1204-B02MNI	6052633	→ 16
DSL-1204-B02MRN	6058502	→ 15
DSL-1204-B05MNI	6052634	→ 16
DSL-1204-B05MRN	6058503	→ 15
DSL-1204-B0M6NI	6052632	→ 16
DSL-1204-B0M6RN	6058501	→ 15
DSL-1204-G02MNI	6052630	→ 16
DSL-1204-G02MRN	6058499	→ 15
DSL-1204-G05MNI	6052631	→ 16
DSL-1204-G05MRN	6058500	→ 15
DSL-1204-G0M6NI	6052629	→ 16
DSL-1204-G0M6RN	6058498	→ 15
DSL-127SG01ME25KM0	2076628	→ 26
DSL-127SG0M5E25KM0	2076627	→ 26
DSL-127SG1M5E25KM0	2076629	→ 26
DSL-127SG20ME25KM0	2078579	→ 26
DSL-127SGM25E25KM0	2076626	→ 26
STE-0803-G	6037322	→ 37
STE-0803-GPC	6042093	→ 37
STE-0803-WSK	6053170	→ 37
STE-0804-G	6037323	→ 37
STE-0804-GPC	6042091	→ 37
STE-0804-WSK	6053171	→ 37
STE-1204-G	6009932	→ 38
STE-1204-GN	6028359	→ 38
STE-1204-GQU6	6042089	→ 38
STE-1204-GQU8	6044998	→ 38
STE-1204-W	6022084	→ 38
STE-1205-G	6022083	→ 38
STE-1205-GFE	6044999	→ 38
STE-1205-W	6022082	→ 39
STE-1208-G	6033269	→ 39
STE-1208-GA01	6044892	→ 39
STL-127SG05ME25KM0	2075982	→ 22
STL-127SG15ME25KM0	2075983	→ 22
STL-127SW05ME25KM0	2075985	→ 22
STL-127SW15ME25KM0	6021831	→ 22

Type	Partno.	Page
TOOL-TW04M08AF10	5337210	→ 40
TOOL-TW06M08AF09	5337207	→ 40
TOOL-TW06M12AF13	5337208	→ 40
TOOL-TW06M12AF14	5329575	→ 40
YF2A13-010UB1M2A13	2095992	→ 25
YF2A13-015UB1XLEAX	2095603	→ 19
YF2A13-020UA1M8U13	2095732	→ 25
YF2A13-020UB1XLEAX	2095604	→ 19
YF2A13-020VB1M2A13	2096359	→ 32
YF2A13-030UB1M2A13	2095994	→ 25
YF2A13-050UA1M8U13	2095735	→ 25
YF2A13-050UB1M2A13	2095995	→ 25
YF2A13-050UB1XLEAX	2095605	→ 19
YF2A13-050VB1M2A13	2096360	→ 32
YF2A13-100UB1XLEAX	2095606	→ 19
YF2A13-C60UA1M8U13	2095731	→ 25
YF2A13-C60UB1M2A13	2095991	→ 25
YF2A13-C60VB1M2A13	2096358	→ 32
YF2A14-010UB3M2A14	2095997	→ 25
YF2A14-015VB3M2A14	2096598	→ 32
YF2A14-020UA3M8U14	2096112	→ 25
YF2A14-020UB3M2A14	2096000	→ 25
YF2A14-020UB3XLEAX	2095607	→ 19
YF2A14-020VB3M2A14	2096599	→ 32
YF2A14-020VB3XLEAX	2096234	→ 29
YF2A14-050UA3M8U14	2096113	→ 25
YF2A14-050UB3M2A14	2096001	→ 25
YF2A14-050UB3N2A14	2095787	→ 25
YF2A14-050UB3XLEAX	2095608	→ 19
YF2A14-050VB3M2A14	2096600	→ 32
YF2A14-050VB3XLEAX	2096235	→ 29
YF2A14-100UB3M2A14	2096002	→ 25
YF2A14-100UB3N2A14	2096114	→ 25
YF2A14-100UB3XLEAX	2095609	→ 19
YF2A14-100VB3M2A14	2096601	→ 32
YF2A14-100VB3XLEAX	2096236	→ 29
YF2A14-150UB3N2A14	2096115	→ 25
YF2A14-150UB3XLEAX	2095610	→ 19
YF2A14-150VB3XLEAX	2096237	→ 29
YF2A14-200UB3XLEAX	2095611	→ 19
YF2A14-200VB3M2A14	2096602	→ 32
YF2A14-200VB3XLEAX	2096238	→ 29
YF2A14-250UB3XLEAX	2095615	→ 19
YF2A14-C20UB3M2A14	2096013	→ 25
YF2A14-C60UA3M8U14	2096111	→ 25
YF2A14-C60UB3M2A14	2095999	→ 25

YF2A14-C60UB3N2A14 ... YF8U14-025VA3XLEAX

Type	Partno.	Page	Type	Partno.	Page
YF2A14-C60UB3N2A14	2095728	→ 25	YF2A28-050UA6M2A28	2096106	→ 26
YF2A14-C60VB3M2A14	2096248	→ 32	YF2A28-050UA6XLEAX	2095835	→ 20
YF2A15-010UB5M2A15	2096007	→ 26	YF2A28-050VA6XLEAX	2096244	→ 30
YF2A15-015UB5M2A15	2096008	→ 26	YF2A28-100UA6M2A28	2096109	→ 26
YF2A15-020UB5M2A15	2096009	→ 26	YF2A28-100UA6XLEAX	2095749	→ 20
YF2A15-020UB5XLEAX	2095617	→ 20	YF2A28-100VA6XLEAX	2096245	→ 30
YF2A15-020VB5XLEAX	2096239	→ 29	YF2A28-150UA6XLEAX	2095750	→ 20
YF2A15-050UB5M2A15	2096010	→ 26	YF2A28-150VA6XLEAX	2096356	→ 30
YF2A15-050UB5XLEAX	2095618	→ 20	YF2A28-300VA6XLEAX	2096357	→ 30
YF2A15-050VB5XLEAX	2096240	→ 29	YF8U13-010UA1M8U13	2096301	→ 23
YF2A15-090UB5XLEAX	2095846	→ 20	YF8U13-010UA1XLEAX	2094779	→ 18
YF2A15-100UB5M2A15	2096011	→ 26	YF8U13-015UA1M8U13	2096302	→ 23
YF2A15-100UB5XLEAX	2095619	→ 20	YF8U13-020UA1M2A13	2096169	→ 23
YF2A15-100VB5XLEAX	2096241	→ 29	YF8U13-020UA1M8U13	2096304	→ 23
YF2A15-150UB5M2A15	2096171	→ 26	YF8U13-020UA1XLEAX	2094782	→ 18
YF2A15-150UB5XLEAX	2095620	→ 20	YF8U13-020VA1M2A13	2096605	→ 31
YF2A15-150VB5XLEAX	2096242	→ 29	YF8U13-020VA1XLEAX	2095860	→ 28
YF2A15-200UB5M2A15	2095844	→ 26	YF8U13-025UA1M8U13	2096305	→ 23
YF2A15-200UB5XLEAX	2095614	→ 20	YF8U13-030UA1M8U13	2096306	→ 23
YF2A15-300UB5M2A15	2095845	→ 26	YF8U13-030UA1XLEAX	2094787	→ 18
YF2A15-300UB5XLEAX	2095621	→ 20	YF8U13-050UA1M2A13	2096170	→ 23
YF2A15-C15UB5M2A15	2096004	→ 26	YF8U13-050UA1M8U13	2096308	→ 23
YF2A15-C60UB5M2A15	2096006	→ 26	YF8U13-050UA1XLEAX	2094788	→ 18
YF2A18-010UA5M2A18	2096032	→ 26	YF8U13-050VA1M2A13	2096606	→ 31
YF2A18-015UA5M2A18	2096012	→ 26	YF8U13-050VA1XLEAX	2095884	→ 28
YF2A18-020UA5M2A18	2096033	→ 26	YF8U13-100UA1M8U13	2096309	→ 23
YF2A18-020UA5XLEAX	2095652	→ 20	YF8U13-100UA1XLEAX	2094789	→ 18
YF2A18-050UA5M2A18	2096034	→ 26	YF8U13-100VA1XLEAX	2095885	→ 28
YF2A18-050UA5XLEAX	2095653	→ 20	YF8U13-150VA1XLEAX	2095886	→ 28
YF2A18-100UA5M2A18	2096035	→ 26	YF8U13-200UA1M8U13	2096310	→ 23
YF2A18-100UA5XLEAX	2095654	→ 20	YF8U13-200UA1XLEAX	2094790	→ 18
YF2A18-150UA5XLEAX	2095679	→ 20	YF8U13-C10UA1N8U13	2095990	→ 23
YF2A18-200UA5XLEAX	2095680	→ 20	YF8U13-C30UA1M8U13	2095961	→ 23
YF2A18-300UA5XLEAX	2095681	→ 20	YF8U13-C50UA1M8U13	2096300	→ 23
YF2A18-C60UA5M2A18	2096031	→ 26	YF8U13-C60UA1M2A13	2096134	→ 23
YF2A24-050UB4XLEAX	2095729	→ 19	YF8U13-C60UA1M8U13	2096298	→ 23
YF2A24-050VB4XLEAX	2096247	→ 29	YF8U13-C60VA1M2A13	2096604	→ 31
YF2A24-100UB4XLEAX	2095730	→ 19	YF8U14-015VA3M8U14	2096613	→ 32
YF2A25-015UB6XLEAX	2095833	→ 20	YF8U14-015VA3XLEAX	2095894	→ 28
YF2A25-030UB6XLEAX	2095834	→ 20	YF8U14-020UA3M2A14	2096136	→ 24
YF2A25-050UB6XLEAX	2095733	→ 20	YF8U14-020UA3M8U14	2096347	→ 24
YF2A25-100UB6XLEAX	2095734	→ 20	YF8U14-020UA3XLEAX	2094791	→ 18
YF2A25-200UB6XLEAX	2095738	→ 20	YF8U14-020VA3M2A14	2096608	→ 32
YF2A28-010UA6M2A28	2096108	→ 26	YF8U14-020VA3M8U14	2096614	→ 32
YF2A28-020UA6M2A28	2096105	→ 26	YF8U14-020VA3XLEAX	2095888	→ 28
YF2A28-020VA6XLEAX	2096243	→ 30	YF8U14-025VA3XLEAX	2095876	→ 28

Type	Partno.	Page
YF8U14-030VA3M8U14	2096615	→ 32
YF8U14-030VA3XLEAX	2095896	→ 28
YF8U14-050UA3M2A14	2096137	→ 24
YF8U14-050UA3M8U14	2096348	→ 24
YF8U14-050UA3XLEAX	2094792	→ 18
YF8U14-050VA3M2A14	2096609	→ 32
YF8U14-050VA3XLEAX	2095889	→ 28
YF8U14-100UA3XLEAX	2094793	→ 18
YF8U14-100VA3M2A14	2096610	→ 32
YF8U14-100VA3XLEAX	2095890	→ 28
YF8U14-150UA3XLEAX	2095580	→ 18
YF8U14-150VA3XLEAX	2095899	→ 28
YF8U14-200UA3XLEAX	2095582	→ 18
YF8U14-200VA3M2A14	2096611	→ 32
YF8U14-200VA3XLEAX	2095891	→ 28
YF8U14-300VA3XLEAX	2095900	→ 28
YF8U14-C60UA3M2A14	2096135	→ 24
YF8U14-C60UA3M8U14	2096346	→ 24
YF8U14-C60VA3M2A14	2096607	→ 32
YF8U14-C60VA3M8U14	2096612	→ 32
YF8U24-050UB4XLEAX	2096200	→ 18
YF8U24-100UB4XLEAX	2096201	→ 18
YG2A13-010UB1M2A13	2095877	→ 25
YG2A13-020UB1M2A13	2095993	→ 25
YG2A13-020UB1XLEAX	2095752	→ 19
YG2A13-050UB1M2A13	2095996	→ 25
YG2A13-050UB1XLEAX	2095753	→ 19
YG2A13-100UB1XLEAX	2095754	→ 19
YG2A13-150UB1XLEAX	2095755	→ 19
YG2A13-200UB1XLEAX	2095756	→ 19
YG2A13-C60UB1M2A13	2095737	→ 25
YG2A14-012UB3XLEAX	2095765	→ 19
YG2A14-020UB3M2A14	2095741	→ 25
YG2A14-020UB3XLEAX	2095766	→ 19
YG2A14-020VB3XLEAX	2095895	→ 29
YG2A14-050UB3M2A14	2095857	→ 25
YG2A14-050UB3XLEAX	2095767	→ 19
YG2A14-050VB3XLEAX	2095897	→ 29
YG2A14-100UB3XLEAX	2095768	→ 19
YG2A14-100VB3XLEAX	2095898	→ 29
YG2A14-150UB3XLEAX	2095769	→ 19
YG2A14-150VB3XLEAX	2096213	→ 29
YG2A14-200UB3XLEAX	2095770	→ 19
YG2A14-200VB3XLEAX	2096214	→ 29
YG2A14-250UB3XLEAX	2095771	→ 19
YG2A14-C60UB3M2A14	2095740	→ 25

Type	Partno.	Page
YG2A15-020UB5M2A15	2095601	→ 26
YG2A15-020UB5XLEAX	2095772	→ 20
YG2A15-020VB5XLEAX	2096215	→ 29
YG2A15-050UB5M2A15	2095602	→ 26
YG2A15-050UB5XLEAX	2095773	→ 20
YG2A15-050VB5XLEAX	2096216	→ 29
YG2A15-100UB5XLEAX	2095774	→ 20
YG2A15-100VB5XLEAX	2096217	→ 29
YG2A15-C60UB5M2A15	2095600	→ 26
YG2A18-020UA5XLEAX	2095779	→ 20
YG2A18-050UA5XLEAX	2095780	→ 20
YG2A18-100UA5XLEAX	2095781	→ 20
YG2A24-050VB4XLEAX	2096221	→ 29
YG2A25-030UB6XLEAX	2095791	→ 20
YG2A25-050UB6XLEAX	2095792	→ 20
YG2A25-100UB6XLEAX	2095793	→ 20
YG2A25-200UB6XLEAX	2095795	→ 20
YG2A28-020VA6XLEAX	2096218	→ 30
YG2A28-050VA6XLEAX	2096219	→ 30
YG8U13-020UA1M2A13	2095748	→ 23
YG8U13-020UA1XLEAX	2094794	→ 18
YG8U13-020VA1XLEAX	2096165	→ 28
YG8U13-050UA1XLEAX	2095586	→ 18
YG8U13-050VA1XLEAX	2096166	→ 28
YG8U13-100UA1XLEAX	2095588	→ 18
YG8U13-100VA1XLEAX	2096209	→ 28
YG8U13-150VA1XLEAX	2096210	→ 28
YG8U13-C60UA1M2A13	2095747	→ 23
YG8U14-020UA3M2A14	2096682	→ 24
YG8U14-020UA3XLEAX	2095589	→ 18
YG8U14-020VA3XLEAX	2095962	→ 28
YG8U14-050UA3M2A14	2096683	→ 24
YG8U14-050UA3XLEAX	2095590	→ 18
YG8U14-050VA3XLEAX	2095963	→ 28
YG8U14-100UA3XLEAX	2095591	→ 18
YG8U14-100VA3XLEAX	2095964	→ 28
YG8U14-300VA3XLEAX	2095968	→ 28
YG8U14-C60UA3M2A14	2096681	→ 24
YI2A14-020UB3N2A14	2095790	→ 25
YI2A14-020UB3XLEAX	2095836	→ 19
YI2A14-020VB3XLEAX	2096222	→ 29
YI2A14-050UB3XLEAX	2095837	→ 19
YI2A14-050VB3XLEAX	2096223	→ 29
YI2A14-100UB3XLEAX	2095838	→ 19
YI2A14-100VB3XLEAX	2096231	→ 29
YI2A14-250UB3XLEAX	2095839	→ 19

Type	Partno.	Page
YI2A14-C60UB3N2A14	2095788	→ 25
YI2A15-020UB5M2A15	2096138	→ 26
YI8U13-020UA1XLEAX	2095593	→ 18
YI8U13-050UA1XLEAX	2095594	→ 18
YI8U13-100UA1XLEAX	2095595	→ 18
YI8U14-020UA3XLEAX	2095596	→ 18
YI8U14-050UA3XLEAX	2095597	→ 18
YI8U14-100UA3XLEAX	2095598	→ 18
YM2A14-020UB3XLEAX	2095867	→ 21
YM2A14-050UB3XLEAX	2095858	→ 21
YM2A14-050VB3XLEAX	2095616	→ 31
YM2A14-100UB3XLEAX	2095859	→ 21
YM2A14-150UB3XLEAX	2095866	→ 21
YM2A15-010UB5XLEAX	2095104	→ 22
YM2A15-020UB5XLEAX	2095840	→ 22
YM2A15-050UB5XLEAX	2095842	→ 22
YM2A15-100UB5XLEAX	2095843	→ 22
YM2A18-010UA5XLEAX	2095871	→ 22
YM2A18-020UA5XLEAX	2095868	→ 22
YM2A18-050UA5XLEAX	2095869	→ 22
YM2A18-100UA5XLEAX	2095870	→ 22
YM2A25-050UB6XLEAX	2096684	→ 22
YM2A28-020VA6XLEAX	2096232	→ 31
YM2A28-050VA6XLEAX	2096233	→ 31
YM2A28-100VA6XLEAX	2096246	→ 31
YM8U13-020VA1XLEAX	2096225	→ 30
YM8U13-050VA1XLEAX	2096226	→ 30
YM8U13-100VA1XLEAX	2096227	→ 30
YN2A14-050UB3XLEAX	2096628	→ 21
YN2A14-150UB3XLEAX	2096629	→ 21
YN2A28-100UA6XLEAX	2095794	→ 22

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