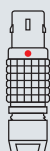


D Series Rugged Push-Pull connectors



LEMO Solutions Portfolio



1 ORIGINALS

Your configurable solution

- Self-latching Push-Pull locking
- Wide & modular range
- Broad application reach
- Indoor & outdoor

Series	B, K, T
	S, E



2 REDEL

Your trusted medical solution

- Medical and Industrial grade plastics
- Device ergonomics
- Electrical safety
- High density & modularity

Series	P
	SP
	MP



3 OPTIMA

Your optimised solution

- Compact & miniature
- Lightweight & low-profile
- High vibration resistance
- IP68 & MIL-STD tested

Series	M
	F
	D



4 SUPREME

Your extreme solution

- High/Low pressure
- Radiation & corrosion
- High Voltage
- Regulated environments

Series	N
	W
	Y



5 SPECIALTIES

Your specialised solution

- Industry standards
- Special configurations
- Historical products

Series	3K.93C.Y, 00 Nim-Camac
	V, 2G/2C, R, ...



6 CABLES

Your unique cable solution

- Design expertise
- In house prototype to production
- Custom cables
- Conductive & hybrid

Series	Technical cables
	Biocompatibility
	Automation & high-flex
	Retractable coil cords
	Ruggedised

SERVICES

Cable assembly services (single-end, double-end, custom harness, overmolding, ...)

Custom solution (connector, cable, device)

Signal integrity end-to-end services

Understanding LEMO's product selection benefits:

Standard versus Special.

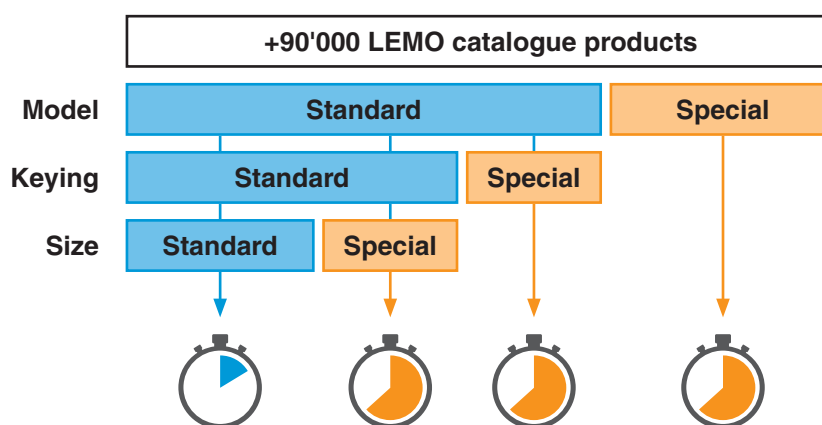
LEMO has a +80 years history of developing custom connectivity solutions. Our very broad offering of models combined with our modular insert design results in a range of over 90'000 connector solutions. This vast product portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in the most demanding markets, including yours.

In this product catalogue we have structured our product offering into two categories:

- **STANDARD** products (in blue) – Most commonly used products for which we can ensure the best availability and shorter lead times. For these products a 10 pcs minimum order quantity (MOQ) applies.
- **SPECIAL** products (in orange) – More niche products designed for customers with specific requirements. For these products a higher minimum order quantity (MOQ) will apply, prices might be higher and lead times are typically longer.

And this differentiation between **STANDARD** and **SPECIAL** applies on three different levels:

1. **MODEL** – Outershell / Backshell shape
2. **KEYING** – Alignment key for differentiated mating
3. **SIZE** – Physical dimensions of the connector



Only if Model + Keying + Size are all within the STANDARD product offering, you will have the best availability and shorter lead time. We recommend you find as much as possible the right solution for your connectivity challenge within our standard product offer.

For all other, special products, we recommend you contact your local LEMO representative to discuss your overall project's life span and long-term needs, so we can align your forecast with applicable MOQ quantities.

By clearly distinguishing between Standard and Special products, LEMO ensures maximum flexibility while still offering the perfect solution to fully meet our customer needs.

Introduction

This catalogue provides a complete description of the LEMO D series portfolio. D series connectors are very compact connectors with push-pull latching designed for harsh environment including military and many other civil applications.

The D series is a COTS (Commercial Off-The-Shelf) product, that exceeds soldier battlefield MIL-STD-810 requirements.

LEMO's engagement for supplying innovative solutions which meet user's highest expectations translates into product like D series being a highly reliable interconnect solution that helps our customers be successful in their critical missions while reducing maintenance and downtime.

The LEMO quality arises from years of expertise in design, manufacturing and quality system where all connectors get identified with a laser engraved part number and production batch number identification on the packaging for full traceability from raw materials to fully assembled product.

All D Series models are rated IP68 in both mated and unmated conditions, ensuring reliable performance even in the most extreme environments. This high level of protection guarantees resistance to dust ingress and water immersion making the D Series perfectly suited for mission-critical applications exposed to harsh field conditions.

The LEMO D Series plugs and free cable sockets are specifically designed for overmolding only. To support this, LEMO provides a complete turnkey solution, including cable selection, precision cable assembly, professional overmolding services, and socket PCB design support.



Product safety notice & disclaimers

Please read and follow all instructions specified on the last page or on our [website](http://www.lemo.com) carefully and consult all relevant national and international safety regulations for your application. Improper handling, cable assembly, or wrong use of connectors can result in hazardous situations.

LEMO products and services are provided "as is." LEMO makes no warranties or representations with regard to LEMO product & services or use of them, express, implied or statutory, including for accuracy, completeness, or security.

In no event shall LEMO be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of LEMO's products.

Table of contents

OPTIMA's D series	6
LEMO Push-Pull self-latching system	7
D series: Interconnections	8
Part section showing internal components	8
Standard models part numbering system	9
Others models part numbering system.....	9
Standard models	10
Alignment key and polarized keying system.....	11
Multipole insert configuration	12
Mixed insert configuration.....	14
High speed models	15
High speed insert configuration	16
Coaxial models	17
Coaxial, hybrid coaxial + low voltage, multi coaxial insert configuration	18
Pre-terminated cable assembly solution	20
Spare parts	24
Accessories	25
Tooling	27
Panel cut-outs	28
PCB drilling pattern	29
Technical characteristics	31
Product safety notice & Disclaimers	4, 35

OPTIMA's D Series

Compact and miniature connector for extreme conditions

OPTIMA D Series has been designed to meet the demands of **modern miniature systems when failure is not an option**. Engineered with a **new patented latching ring**, this connector is optimized for high vibration resistance and **unparalleled reliability**.

Its lightweight, low-profile structure is combined with **a stealth, non-reflective, conductive surface treatment**, making it ideal for military and aerospace applications. Built to withstand most demanding requirements, Optima's D Series has been tested according to military standards such as **MIL-STD-810H**.

Thanks to LEMO's **modular connector design**, the OPTIMA D series integrates configurations from other series, offering a variety of multipole combinations, **high-speed data transfer** options via USB and Ethernet protocols, and **high-frequency coaxial solutions**.



LEMO Push-Pull self-latching system

Discover the power of precision: LEMO Push-Pull self-latching connectors

In today's fast-paced world, **reliability**, **speed**, and **precision** are crucial for any high-performance application. That's why engineers and innovators across industries trust **LEMO's Push-Pull self-latching connectors** — the gold standard in secure and efficient connectivity.

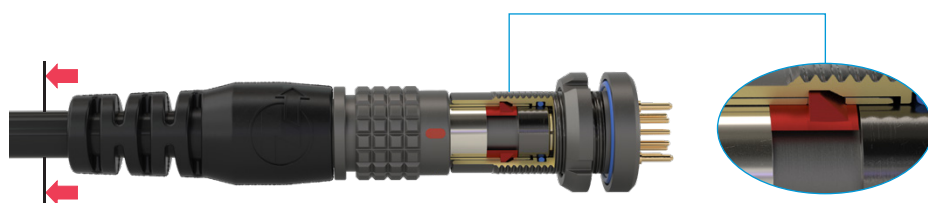
What is Push-Pull self-latching technology ?

LEMO's Push-Pull latching system ensures that your connectors lock securely in place with a simple push and are easily released with a gentle pull. This innovative design combines the convenience of quick connection with uncompromising security, making it perfect for applications where performance and reliability matter most.



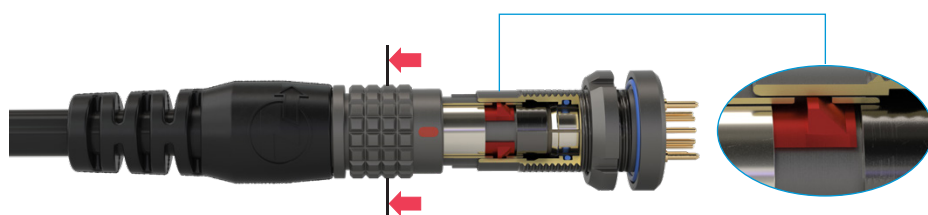
Fast and easy connections

The LEMO self-latching system allows the connector to be mated by simply pushing the plug axially into the socket.



Secure latching system

Once firmly latched, connection cannot be broken by pulling on the cable or any other component part other than the outer release sleeve.

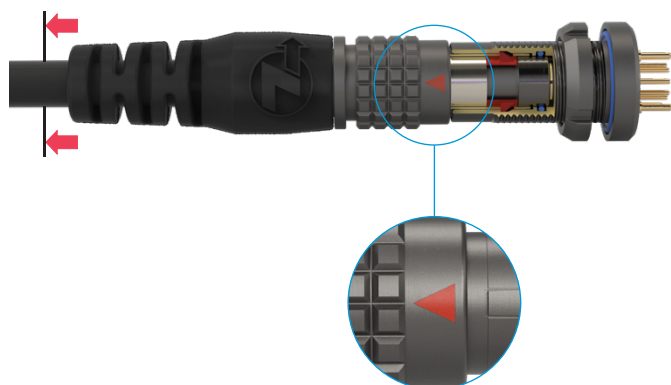


Easy release

When required, the connector is disengaged by a single axial pull on the outer release sleeve. This first disengages the latches and then withdraws the plug from the socket.

What is Break-Away latching technology ?

Break-away latching technology is designed for quick, effortless disconnection in critical moments. With a hard pull on the cable with a force above a certain threshold, the connection is released instantly, ensuring rapid responses in emergencies while maintaining a secure and reliable connection when engaged.



Quick disconnection

In **emergency situations**, the connector can be disengaged by **pulling on the cable**, thanks to a specially designed latching system that disconnects at a **specific force**. Under normal conditions, it is recommended to unmate the connector by pulling on the outer shell as for a standard Push-Pull connector.

Specific marking

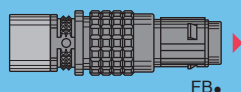
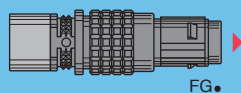
To differentiate **break-away** latching from the **standard push-pull latching**, a **red arrow** is used as a visual indicator. This red arrow ensures that users can easily identify the break-away feature and select the appropriate disconnection method based as needed.

For differences in mating and unmating forces see page 33.

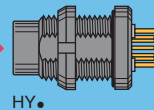
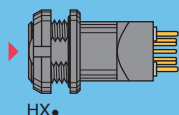
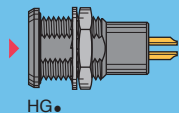
D Series

Standard models IP68 (mated and unmated) (page 10)

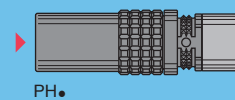
Straight plugs



Sockets

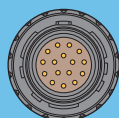


Free cable socket

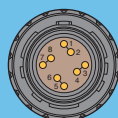


Configurations

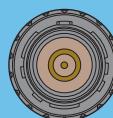
Multipole (page 12)



High Speed (page 16)



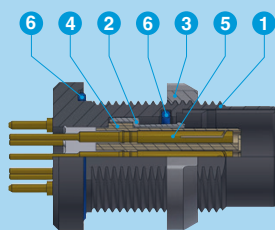
Coaxial (page 18)



Part section showing internal components

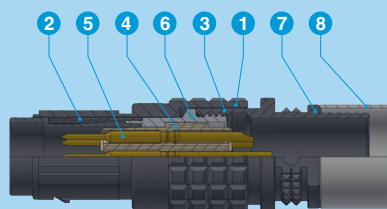
Socket

- 1 outer shell
- 2 earthing crown
- 3 notched nut
- 4 insulator
- 5 female contact
- 6 o-ring



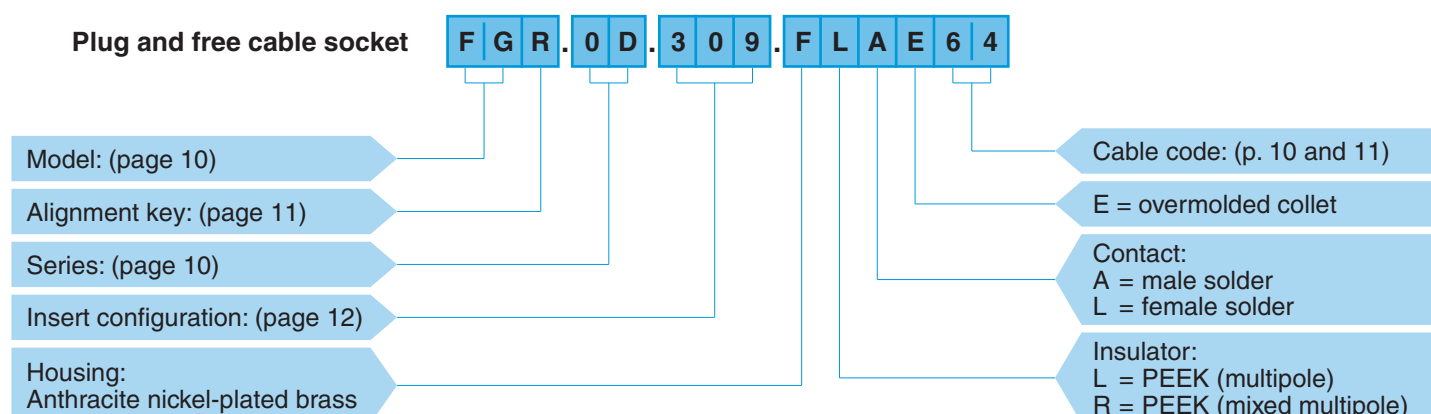
Straight plug

- 1 outer shell
- 2 latching ring
- 3 inner shell
- 4 insulator
- 5 male contact
- 6 split insert carrier
- 7 backnut
- 8 crimping ring

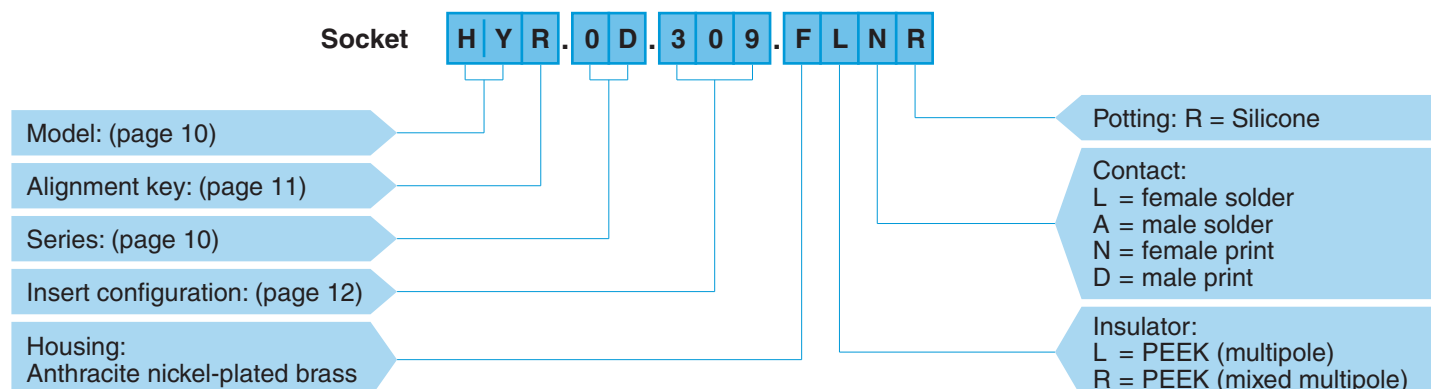


Part numbering system

Standard models part numbering system



FGR.0D.309.FLAE64 = straight plug with key (R), 0D series, multipole type with 9 contacts, outer shell in anthracite nickel-plated brass, PEEK insulator, male solder contacts, overmolded collet for 5.8 mm diameter cable with push-pull latching.



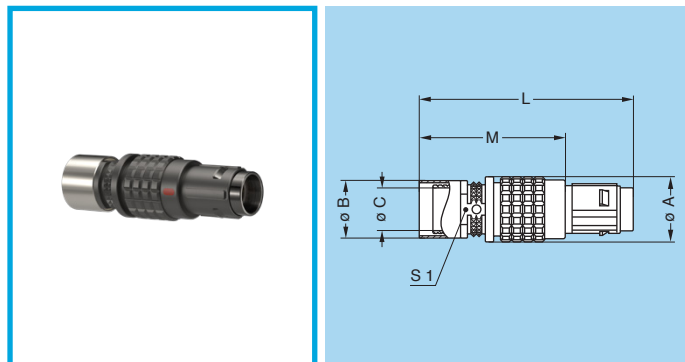
HYR.0D.309.FLNR = socket, nut fixing, with key (R), 0D series, multipole type with 9 contacts, outer shell in anthracite nickel-plated brass, PEEK insulator, female print contacts, potted.

Others part numbering system

- **High Speed** (page 15)
- **Coaxial** (page 17)

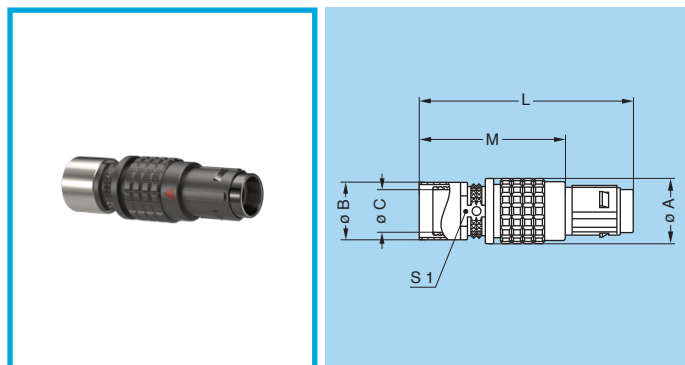
Standard models

FG Straight plug, push-pull latching, key (R or S, N), for overmolding



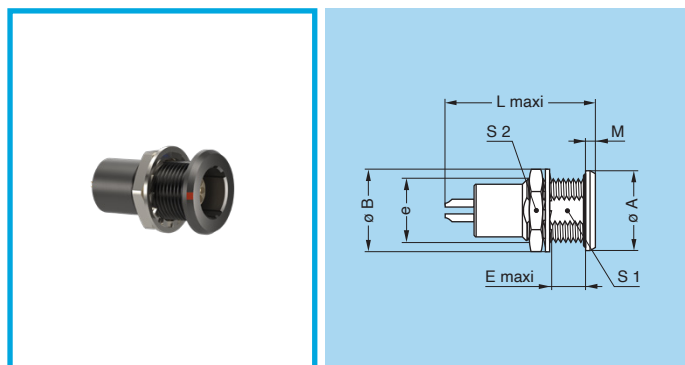
Reference		Dimensions (mm)						Cable ø max. (mm)	Cable code
Model	Series	A	B	C	L	M	S1		
FG●	DD	7.0	5.3	3.6	26.9	18.9	4.4	3.2	43
FG●	0D	9.5	8.4	6.2	31.1	21.2	7.0	5.8	64
FG●	1D	12.0	10.0	7.1	36.5	25.1	8.0	6.7	75
FG●	2D	15.0	13.0	10.1	42.9	30.6	11.0	9.7	A3
FG●	3D	18.8	15.5	12.1	49.3	34.3	14.0	11.7	C6

FB Straight plug, break-away latching, key (R or S, N), for overmolding



Reference		Dimensions (mm)						Cable ø max. (mm)	Cable code
Model	Series	A	B	C	L	M	S1		
FB●	DD	7.0	5.3	3.6	26.9	18.9	4.4	3.2	43
FB●	0D	9.5	8.4	6.2	31.1	21.2	7.0	5.8	64
FB●	1D	12.0	10.0	7.1	36.5	25.1	8.0	6.7	75
FB●	2D	15.0	13.0	10.1	42.9	30.6	11.0	9.7	A3
FB●	3D	18.8	15.5	12.1	49.3	34.3	14.0	11.7	C6

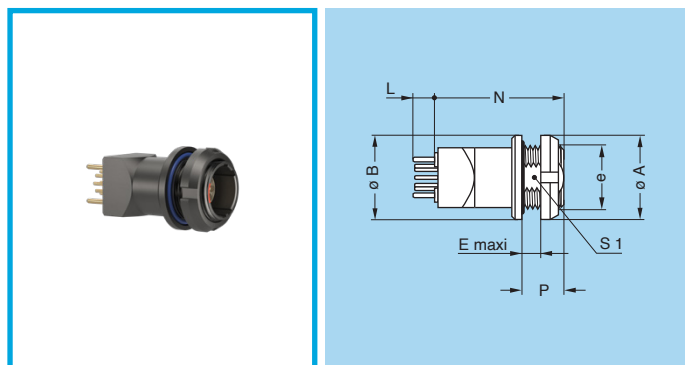
HG Socket, nut fixing, key (R or S, N) (front panel mounting)



Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S2
HG●	DD	10.0	10.2	M7x0.5	5.6	19.5	1.2	6.3	9.0
HG●	0D	12.0	12.5	M9x0.6	6.7	23.0	1.5	8.2	11.0
HG●	1D	15.5	16.0	M12x0.5	6.8	26.0	1.8	11.0	14.0
HG●	2D	18.5	19.6	M15x0.5	7.9	31.0	1.8	14.0	17.0
HG●	3D	23.5	25.1	M18x0.5	12.0	36.1	2.5	17.0	22.0

Panel cut-out (page 28)

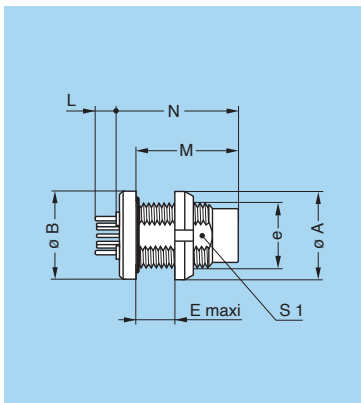
HX Socket, nut fixing, key (R or S, N), for printed circuit (back panel mounting)



Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	N	P	S1
HX●	DD	10.0	10.0	M7x0.5	3.5	3.5	15.0	6.0	6.3
HX●	0D	12.0	12.0	M9x0.6	3.5	3.5	18.5	6.0	8.2
HX●	1D	16.0	15.5	M12x0.5	3.5	3.5	21.5	7.0	11.0
HX●	2D	20.0	18.5	M15x0.5	3.5	3.5	25.0	7.0	14.0
HX●	3D	24.0	23.5	M18x0.5	3.5	3.5	27.3	7.0	17.0

Panel cut-out (page 28)

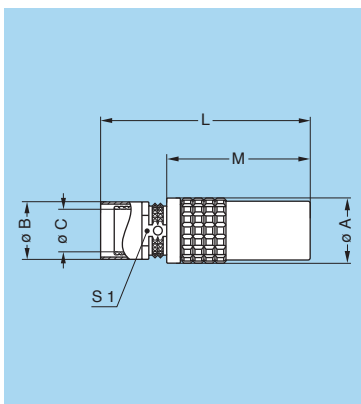
PCB drilling pattern (page 29)

**HY●** Socket, nut fixing, key (R or S, N), for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	N	S1
HY●	DD	10.0	10.0	M7x0.5	6.4	3.5	12.0	15.0	6.3
HY●	0D	12.0	12.0	M9x0.6	9.0	3.5	15.5	18.5	8.2
HY●	1D	16.0	15.5	M12x0.5	9.9	3.5	18.5	21.5	11.0
HY●	2D	20.0	18.5	M15x0.5	12.8	3.5	22.0	25.0	14.0
HY●	3D	24.0	23.5	M18x0.5	13.2	3.5	24.3	27.3	17.0

Panel cut-out (page 28)

PCB drilling pattern (page 29)

PH● Free cable socket, key (R or S, N), for overmolding

Reference		Dimensions (mm)						Cable ϕ max. (mm)	Cable code
Model	Series	A	B	C	L	M	S1		
PH●	DD	7.0	5.3	3.6	25.9	17.7	4.4	3.2	43
PH●	0D	9.5	8.4	6.2	30.5	20.9	7.0	5.8	64
PH●	1D	12.0	10.0	7.1	34.1	22.3	8.0	6.7	75
PH●	2D	15.0	13.0	10.1	40.4	25.0	11.0	9.7	A3
PH●	3D	18.8	15.5	12.1	46.2	27.4	14.0	11.7	C6

**Alignment key and polarized system**

D Series connector models are composed of three letters and the last one indicates the keys corresponding to different keying angle. All keyings are composed by 5 robust spurs and can be fitted with both female or male contacts. To protect users from electrocution, female contacts must be used when voltage is present. Standard gender is when female contacts are used in the socket. Contact selection must be done with a separate letter in the part numbering system.

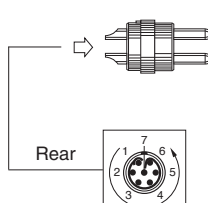
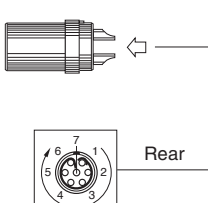
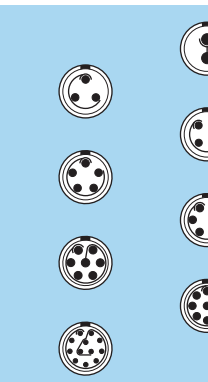
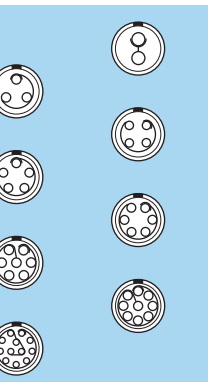
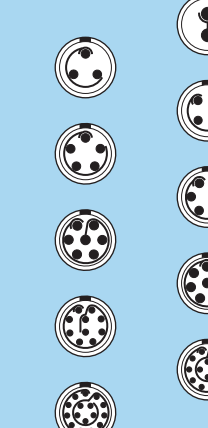
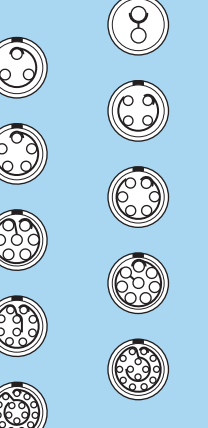
Front view of a socket				Ref.	Contact type		
R	N	S			Gender	Plug	Socket
				R	standard	male	female
				N	standard	male	female
				S	reverse	female	male

● Standard
● Special



Multipole insert configuration

Multipole

	Male solder contacts	Female solder contacts	Reference	Number of contacts	Contact ø (mm)	Contact type		AWG solder (max.)	Solder contact		Rated current (A)
						Solder	Print (straight)		Test voltage (kV DC) Contact-contact	Test voltage (kV DC) Contact-shell	
DD			302	2	0.5	●	●	30	1.40	1.40	4.0
			303	3	0.5	●	●	30	1.10	1.40	3.5
			304	4	0.5	●	●	30	1.10	0.90	2.5
			305	5	0.35	●	●	30	1.10	1.40	1.7
			306	6	0.35	●	●	30	0.60	0.80	1.5
0D			302	2	0.9	●	●	20	1.90	1.50	10.0
			303	3	0.9	●	●	20	1.70	1.30	8.0
			304	4	0.7	●	●	22	1.20	1.00	7.0
			305	5	0.7	●	●	22	1.40	1.10	6.5
			306	6	0.5	●	●	28	1.20	0.90	3.0
			307	7	0.5	●	●	28	1.10	1.00	3.0
			309	9	0.5	●	●	28	1.10	1.60	2.5
			312	12	0.35	●	●	30	1.10	1.50	1.7
1D			302	2	1.3	●	●	20	2.10	2.00	15.0
			303	3	1.3	●	●	20	1.90	2.20	12.0
			304	4	0.9	●	●	22	2.00	2.00	10.0
			305	5	0.9	●	●	22	1.80	1.70	9.0
			306	6	0.7	●	●	22	1.50	1.70	7.0
			307	7	0.7	●	●	22	1.40	1.50	7.0
			308	8	0.7	●	●	22	1.10	1.00	5.0
			310	10	0.5	●	●	28	1.30	2.10	2.0
			314	14	0.5	●	●	28	1.10	1.70	2.0
			316	16	0.5	●	●	28	1.10	1.80	2.0

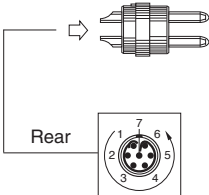
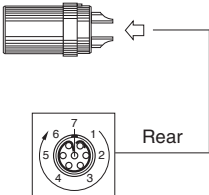
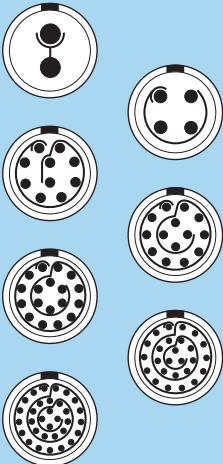
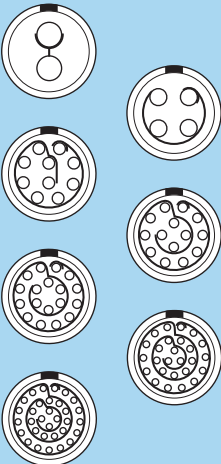
● Standard

Multipole

	Male solder contacts	Female solder contacts	Reference	Number of contacts	Contact ø (mm)	Contact type		AWG solder (max.)	Solder contact		Rated current (A)
						Solder	Print (straight)		Test voltage (kV DC) Contact-contact	Test voltage (kV DC) Contact-shell	
2D			302	2	2.0	●	●	16	3.00	2.90	20.5
			303	3	1.6	●	●	18	3.50	2.60	17.0
			304	4	1.3	●	●	20	2.60	2.60	15.0
			305	5	1.3	●	●	20	2.50	2.30	14.0
			306	6	1.3	●	●	20	2.00	2.00	12.0
			307	7	1.3	●	●	20	2.50	2.30	11.0
			308	8	0.9	●	●	22	2.10	1.80	10.0
			310	10	0.9	●	●	22	2.00	1.90	8.0
			312	12	0.7	●	●	22	1.80	2.00	7.0
			314	14	0.7	●	●	22	1.70	2.00	6.5
			316	16	0.7	●	●	22	1.40	1.80	6.0
			318	18	0.7	●	●	22	1.20	1.70	5.5
			319	19	0.7	●	●	22	1.40	1.80	5.0
			326	26	0.5	●	●	28	1.00	1.90	1.5
			332	32	0.5	●	●	28	1.10	2.00	1.3

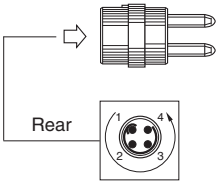
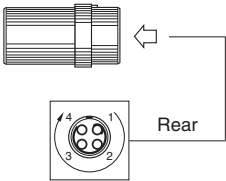
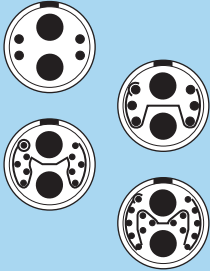
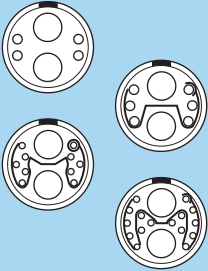
● Standard

Multipole

3D	Male solder contacts		Female solder contacts		Reference	Number of contacts	Contact ø (mm)	Contact type		AWG solder (max.)	Solder contact		Rated current (A)
								Solder	Print (straight)		Test voltage (kV DC) Contact-contact	Test voltage (kV DC) Contact-shell	
					302	2	3.0	●	●	12	3.00	2.20	35.0
					304	4	2.0	●	●	16	2.00	1.80	17.0
					310	10	1.3	●	●	20	1.80	1.30	12.0
					314	14	0.9	●	●	22	1.70	1.70	9.0
					318	18	0.9	●	●	22	1.70	1.50	7.0
				326	26	0.7	●	●	22	1.40	1.10	3.5	
				332	32	0.7	●	●	22	1.10	1.40	3.0	
● Standard ● Special													

Mixed insert configuration

Mixed multipole

3D	Male insert		Female insert		Reference	Number of contacts	Contact ø (mm)	Contact type		AWG	Solder contact		Rated current (A) ⁽²⁾
								Solder	Print (straight)		Test voltage (kV DC) ⁽¹⁾ Contact-contact	Test voltage (kV DC) ⁽¹⁾ Contact-shell	
				306	4 2	0.9 3.0	●	●	20-22-24 10-12-14	2.9 3.0	1.8	8.5 41.5	
				308	6 2	0.9 3.0	●	●	20-22-24 10-12-14	2.9 3.0	1.8	8.5 41.5	
				312	10 2	0.7 3.0	●	●	22-24-26 10-12-14	1.4 2.6	1.6	4.5 40.0	
				318	16 2	0.7 3.0	●	●	22-24-26 10-12-14	1.4 2.6	1.6	4.5 40.0	
● Standard ● Special													

Note: ¹⁾ test voltage according to IEC 60512-4-1 test 4a. Altitude correction factor is given in IEC 60664-1 table A.2. ²⁾ the specified rated current can be applied simultaneously to all the contacts. It corresponds to an average temperature rise of 40°C of the connector (measured according to IEC 60512-5-1 test 5a).



High speed models

High speed models part numbering system

Plug and free cable socket

F G R . 0 D . 3 0 7 . F R A E 6 4

Model: (page 10)

Alignment key: (page 11)

Series: (page 10)

Insert configuration: (page 16)

Housing:
Anthracite nickel-plated brass

Cable code: (p. 10 and 11)

E = overmolded collet

Contact:
A = male solder
L = female solder

Insulator:
L = PEEK (multipole)
T = FEP (512 only)
R = PEEK (mixed multipole)
(307 only)

FGR.0D.307.FRAE64 = straight plug with key (R), 0D series, mixed multipole type with 7 contacts, outer shell in anthracite nickel-plated brass, PEEK insulator, male solder contacts, overmolded collet for 5.8 mm diameter cable with push-pull latching.

Socket

H Y R . 0 D . 3 0 7 . F R N R

Model: (page 10)

Alignment key: (page 11)

Series: (page 10)

Insert configuration: (page 16)

Housing:
Anthracite nickel-plated brass

Potting: R = Silicone

Contact:
L = female solder
A = male solder
N = female print
D = male print

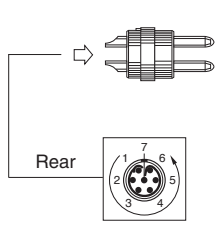
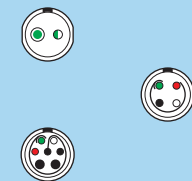
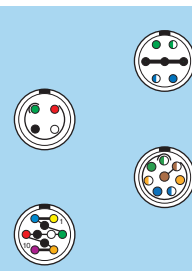
Insulator:
L = PEEK (multipole)
T = FEP (512 only)
R = PEEK (mixed multipole)
(307 only)

HYR.0D.307.FRNR = socket, nut fixing, with key (R), 0D series, mixed multipole type with 7 contacts, outer shell in anthracite nickel-plated brass, PEEK insulator, female print contacts, potted.

Protocol	USB 2.0	USB 3.2 Gen 2	10G Base T1 / SPE	1000 Base T1 (2 x SPE)	1000 Base T4		10G Base T4
Standard	USB 2.0	USB 3.2 Gen 2	IEEE 802.3ch	IEEE 802.3bp	IEEE 802.3ab		IEEE 802.3an
Max data transfer speed	480 Mb/s	10 Gb/s	10 Gb/s	1 Gb/s	1 Gb/s		10 Gb/s
Number of twisted pairs	1	3	1	2	4		4
Cable category	USB 2.0	USB 3.2 Gen 2	SPE	CAT 5e	CAT 5e	CAT 6	CAT 6A
Serie	0D & 1D	1D	0D	1D	1D	2D	2D
Insert configuration	304 & 307	U32	511	512	308	514	514

High speed insert configuration

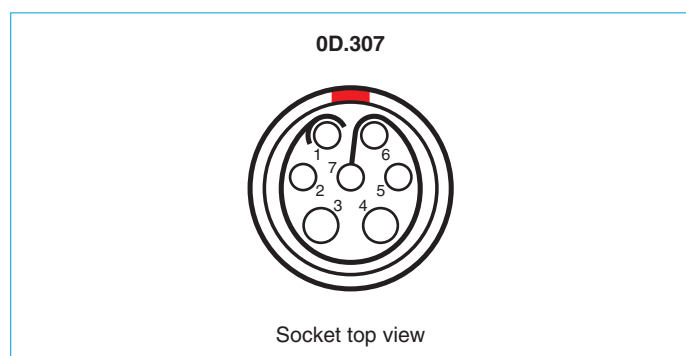
USB and ethernet configuration allows high speed data transfer over twisted pair cable harnesses up to 10 Gb/s.

	Male solder contacts 	Reference	Protocol	Max data transfer speed	Number of twisted pair	Number of contacts	Contact ø (mm)	Contact type		AWG solder (max.) ¹⁾	Test voltage (kV DC) ¹⁾ Contact-contact	Rated current (A) ¹⁾
								Solder	Print (straight)			
0D		511	10G Base T1 SPE	10 Gb/s	1	2	0.5	●	●	26	2.20	5
		304	USB 2.0	480 Mb/s	1	4	0.7	●	●	22	0.60	7
		307	USB 2.0	480 Mb/s	1	5 2	0.5 0.7	●	●	28 22	1.10	0.5 8
1D		512	1000 Base T1 2xSPE	1 Gb/s	2	4	0.5	●	●	26	1.50	3
		304	USB 2.0	480 Mb/s	—	4	0.9	●	●	22	0.95	10
		308	1000 Base T4	1 Gb/s	4	8	0.7	●	●	22	0.67	5
		U32	USB 3.2 Gen 2	10 Gb/s	3	10	0.5	●	●	28	0.50	5
2D		514	10G Base T4	10 Gb/s	4	8	0.7	●	●	22	1.13	5

Note: ¹⁾ see calculation method, caution and suggested standard on BKT catalogue.

● Standard

USB 2.0 recommended layout for Nett Warrior / STANAG 4695 protocol compatibility



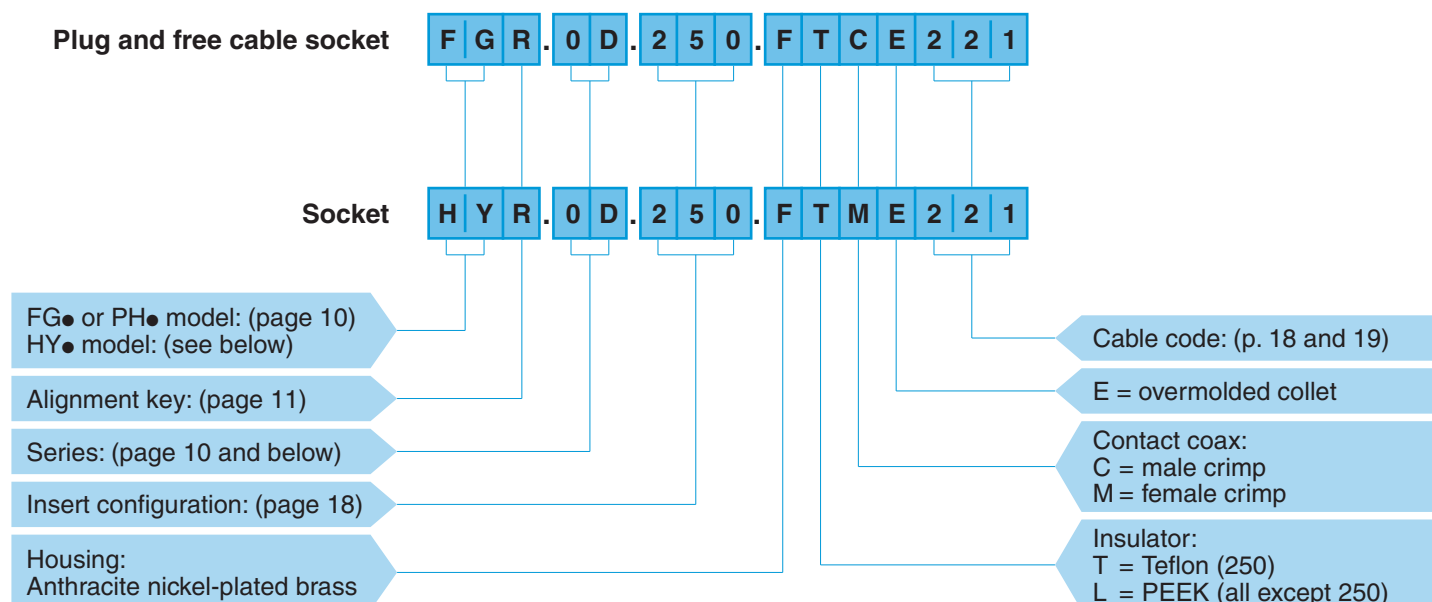
Pin ID	Power ports	PAN / EUD ports
1	USB- / SM Bus Clock	USB-
2	Not connected	CC line
3	Power (10-20 VDC, 10A peak)	Power (10-20 VDC, 10A peak)
4	Ground	Ground
5	Power (5 VDC)	Power (5 VDC)
6	USB+ / SM Bus Data	USB+
7	NC / USB drain wire / Ground	NC / USB drain wire / Ground



Coaxial models

D Series offer connectors with coaxial and hybrid contacts which include coaxial and low voltage contact configurations, as well as multi-coaxial contact configurations.

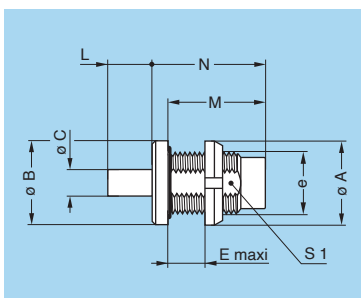
Coaxial models part numbering system



FGR.0D.250.FTCE221 = straight plug with key (R), 0D series, coaxial type, outer shell in anthracite nickel-plated brass, Teflon insulator, male solder contacts, overmolded collet, push-pull latching.

HYR.0D.250.FTME221 = socket, nut fixing, with key (R), 0D series, coaxial type, outer shell in anthracite nickel-plated brass, Teflon insulator, female crimp contacts, overmolded collet.

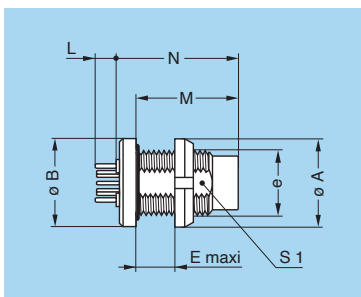
HY● Socket, nut fixing, key (R or S, N), cable mount (back panel mounting)



Reference		Dimensions (mm)								
Model	Series	A	B	C	e	E	L	M	N	S1
HY●	0D	12.0	12.0	3.8	M9x0.6	9.0	6.5	14.5	17.0	8.2

Panel cut-out (page 28)

HY● Socket, nut fixing, key (R or S, N), for printed circuit (back panel mounting)



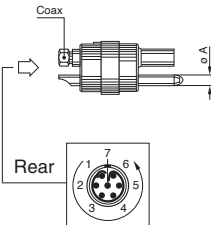
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	N	S1
HY●	2D	20.0	18.5	M15x0.5	12.8	3.5	22.0	25.0	14.0
HY●	3D	24.0	23.5	M18x0.5	13.2	3.5	24.3	27.3	17.0

Panel cut-out (page 28)

PCB drilling pattern (page 29)

Coaxial insert configuration

Coaxial, hybrid coaxial + low voltage, multi coaxial 50 Ohm

	Male insert	Reference	Coaxial							Low voltage							Cable code	
			Number of contacts	Impedance (Ω)	Contact type	Recommended cable	Max frequency (GHz) ⁽³⁾	VSWR	Test voltage (kV DC)	Rated current (A)	Number of contacts	ϕ A (mm)	Contact type	AWG	Test voltage (kV DC) ⁽¹⁾ Contact-contact	Test voltage (kV DC) ⁽¹⁾ Contact-shell		Rated current (A) ⁽²⁾
0D		250	1	50	crimp	LMR-100A	8 15	<1.3 <1.5	0.9	9	–	–	–	–	–	–	–	221
2D		810 ⁽⁴⁾	1	50	crimp	RG 316/U	6	< 1.3	2.2	2	10	0.7	solder ⁽⁵⁾ print ⁽⁶⁾	22 24 26	0.95	1.35	7	A31
3D		850 ⁽⁴⁾	2	50	crimp	RG 316/U	6	< 1.3	2.2	2	10	0.7	solder ⁽⁵⁾ print ⁽⁶⁾	22 24 27	0.75	1.05	8	C61
		843 ⁽⁴⁾	3	50	crimp	RG 316/U	6	< 1.3	2.2	2	–	–	–	–	–	–	–	C61

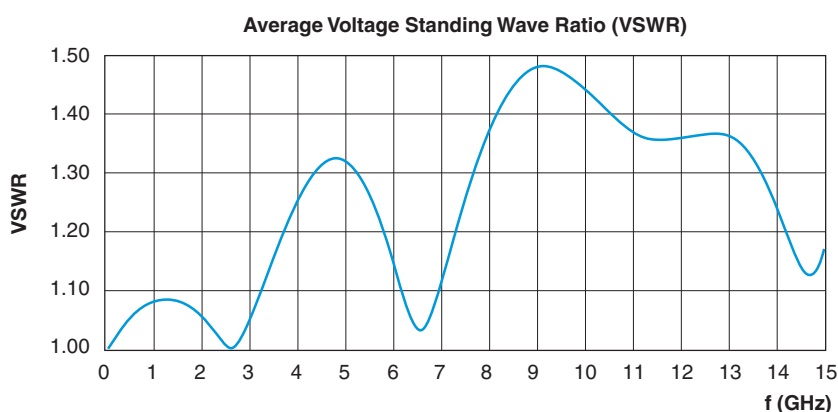
Note:

- 1) test voltage according to IEC 60512-4-1 test 4a. Altitude correction factor is given in IEC 60664-1 table A.2.
- 2) the specified rated current can be applied simultaneously to all the contacts. It corresponds to an average temperature rise of 40°C of the connector (measured according to IEC 60512-5-1 test 5a).
- 3) these contacts require specific tools for assembly on the cable.
- 4) coming soon. Please contact us for more information.
- 5) solder contact for plug and free cable socket.
- 6) print contact for socket.

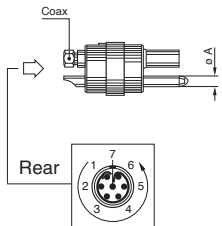
Typical VSWR performance curve

Coaxial contact of 0D.250 configuration:

Able to reach a frequency up to 8 GHz with a VSWR of 1.3 and up to 15 GHz with a VSWR of 1.5 when terminated with 1 meter Times microwaves LMR100 or Multiflex_86.



Coaxial, hybrid coaxial + low voltage, multi coaxial 75 Ohm

	Male insert 	Reference	Coaxial							Low voltage						Cable code		
			Number of contacts	Impedance (Ω)	Contact type	Recommended cable	Max frequency (GHz) ⁽³⁾	VSWR	Test voltage (kV DC)	Rated current (A)	Number of contacts	ø A (mm)	Contact type	AWG	Test voltage (kV DC) ⁽¹⁾ Contact-contact		Test voltage (kV DC) ⁽¹⁾ Contact-shell	Rated current (A) ⁽²⁾
2D		830 ⁽⁴⁾	1	75	crimp	Belden 179DT	6	< 1.3	2.2	2	10	0.7	solder ⁽⁵⁾ print ⁽⁶⁾	22 24 26	0.95	1.35	7	A33
3D		870 ⁽⁴⁾	2	75	crimp	Belden 179DT	6	< 1.3	1.2	2	10	0.7	solder ⁽⁵⁾ print ⁽⁶⁾	22 24 27	0.75	1.05	8	C63
		263 ⁽⁴⁾	3	75	crimp	Belden 179DT	6	< 1.3	1.2	1	—	—	—	—	—	—	—	C63

Note:

¹⁾ test voltage according to IEC 60512-4-1 test 4a. Altitude correction factor is given in IEC 60664-1 table A.2.

²⁾ the specified rated current can be applied simultaneously to all the contacts. It corresponds to an average temperature rise of 40°C of the connector (measured according to IEC 60512-5-1 test 5a).

³⁾ these contacts require specific tools for assembly on the cable.

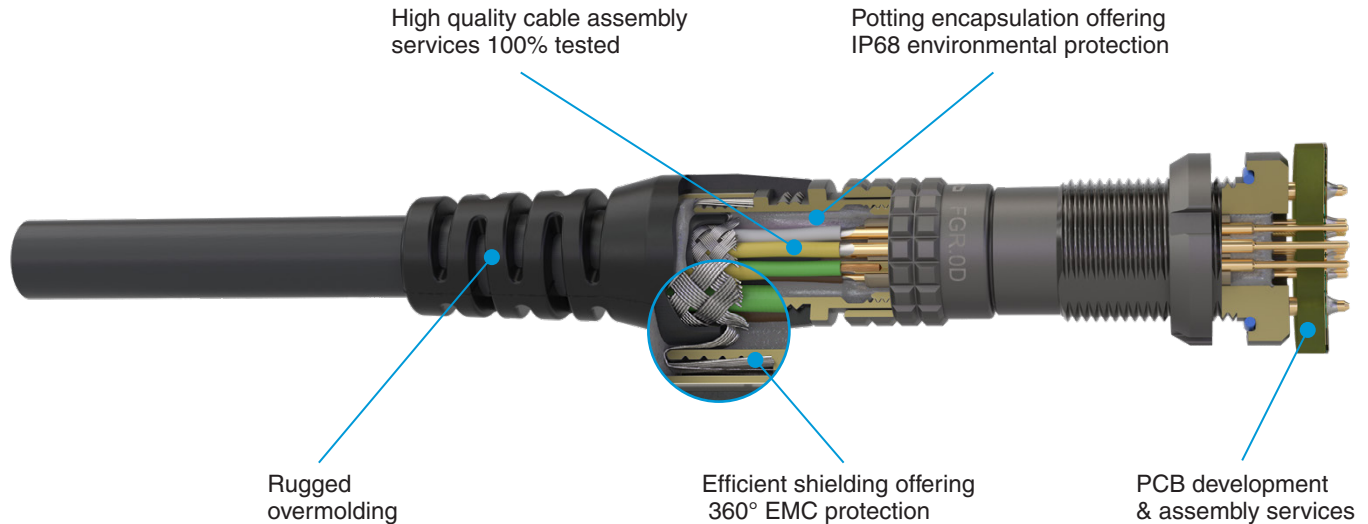
⁴⁾ coming soon. Please contact us for more information.

⁵⁾ solder contact for plug and free cable socket.

⁶⁾ print contact for socket.

Pre-terminated cable assembly solution

LEMO offers complete solutions including cable selection, meticulous cable assembly, and proficient overmolding services as well as socket PCB development. Our local subsidiaries adhere to stringent guidelines, ensuring unparalleled reliability with the best guarantees in terms of product quality and signal integrity.



Cable assemblies you can trust

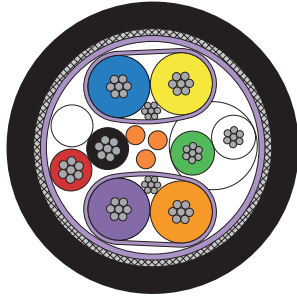
Comprehensive cable assembly capabilities from design to production, we deliver plug-and-play assemblies that ensure seamless integration and reliability.

- **Full-Service offering:** Pre-assembled cable and connector sets tailored to your application, tested and ready for integration.
- **Custom solutions:** Expert in complex cable harnesses, assemblies, and thermoplastic overmolding.
- **Private labeling:** Tailored branding for sensitive projects.
- **Certified quality:** IPC-620, ISO 9001, AS9100, and more.
- **Sustainability:** Eco-conscious manufacturing aligned with strict industry standards.
- **End-to-end support:** From design to delivery, with timely and reliable service. Single point of contact: One trusted partner from connector and cable selection to final cable assembly delivery.
- **Global support:** Available worldwide through LEMO's international network, with local support and logistics.
- **Design & engineering support:** Technical drawings, system-level expertise.
- **Extensively tested:** Each assembly undergoes thorough electrical, mechanical, and visual testing to guarantee performance and safety.



- Size 1D with 10 contacts (AWG 28)
- Tested and qualified according USB 3.2 Gen 2 protocol
- Allow data transfer up to 10 Gb/s and power up to 100 W
- PUR outer sheath, colour black, halogen free, flame retardant, RoHS

USB 3.2 Gen 2 – 1D.310 configuration



Characteristics	Value
Conductor	Stranded tinned copper
Construction	2x 2x AWG 28 parallel pair, 90 Ω
	1x 2x AWG 28 twisted pair, 90 Ω
	2x AWG 28
	Aramid yarn fillers
Screen	Tinned copper braid, coverage 85%
Jacket / Colour	PUR / Black
Temperature range	-40°C / +85°C
Test voltage	500 V

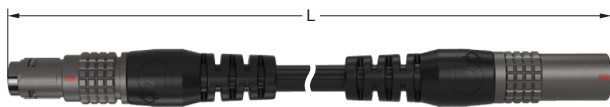
Plug open-end cable



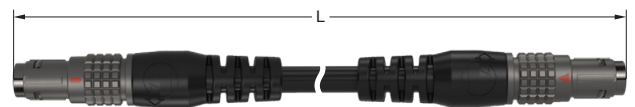
Free cable socket open-end cable



Cable plug to free cable socket



Cable plug to plug

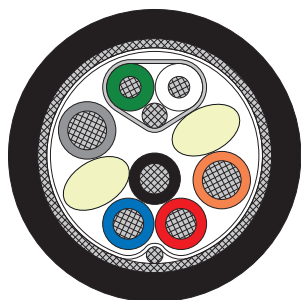


Description	Version	Part number (L = 0.3 meter)	Part number (L = 0.75 meter)	Part number (L = 1 meter)
Plug open-end cable	Push-Pull	–	–	MFZ.1D.U32.M10UN00
	Break-Away	–	–	MBZ.1D.U32.M10UN00
Free cable socket open-end cable	–	–	–	MPZ.1D.U32.M10UN00
Cable plug to free cable socket	Push-Pull	MFP.1D.U32.D30UN00	MFP.1D.U32.D75UN00	–
	Break-Away	MBP.1D.U32.D30UN00	MBP.1D.U32.D75UN00	–
Cable Push-Pull plug to plug Break-Away	PP – BA	MFB.1D.U32.D30UN00	MFB.1D.U32.D75UN00	–

Nett Warrior / STANAG 4695 protocol compatibility pre-terminated connector 0D.307 (USB 2.0)

- Size 0D with 7 contacts (USB 2.0 + 2x power AWG 22)
- Electrical compatibility with NATO STANAG 4695 and 4851 Standards
- Technical performances -40°C/+90°C - 1'000 hours salt spray - 5'000 cycles - IP68 20 m / 2 hours
- PUR outer sheath, colour black, halogen free, flame retardant

USB 2.0 – 0D.307 configuration



Characteristics	Value
Conductor	Stranded tinned copper
Construction	1x 2x AWG 28 twisted pair
	2x AWG 22
	3x AWG 28
	Aramid yarn fillers
Screen	Tinned copper braid, coverage 85%
Jacket / Colour	PUR / Black
Temperature range	-40°C / +90°C
Test voltage	600 V

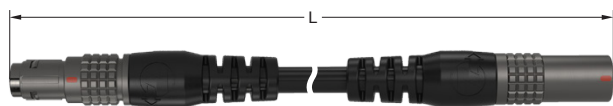
Plug open-end cable



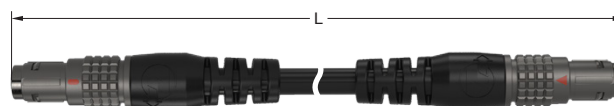
Free cable socket open-end cable



Cable plug to free cable socket



Cable plug to plug



Description	Version	Part number (L = 0.3 meter)	Part number (L = 0.75 meter)	Part number (L = 1 meter)
Plug open-end cable	Push-Pull	–	–	MFZ.0D.U20.M10UN00
	Break-Away	–	–	MBZ.0D.U20.M10UN00
Free cable socket open-end cable	–	–	–	MPZ.0D.U20.M10UN00
Cable plug to free cable socket	Push-Pull	MFP.0D.U20.D30UN00	MFP.0D.U20.D75UN00	–
	Break-Away	MBP.0D.U20.D30UN00	MBP.0D.U20.D75UN00	–
Cable Push-Pull plug to plug Break-Away	PP – BA	MFB.0D.U20.D30UN00	MFB.0D.U20.D75UN00	–

Pre-terminated connector 0D.309 (low voltage multipole)

- Size 0D with 9 contacts (AWG 28)
- Technical performances -40°C/+90°C - 1'000 hours salt spray - 5'000 cycles - IP68 20 m / 2 hours
- PUR outer sheath, colour black, halogen free, flame retardant

Multipole – 0D.309 configuration



Characteristics	Value
Conductor	Bare copper strand
Construction	9x AWG 28
	Aramid yarn fillers
Screen	Tinned copper braid, coverage 85%
Jacket / Colour	PUR / Black
Temperature range	-40°C / +90°C
Test voltage	300 V

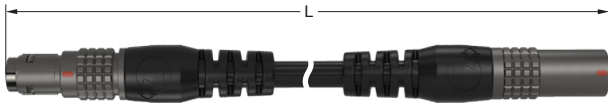
Plug open-end cable



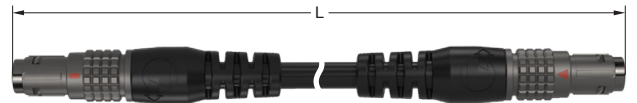
Free cable socket open-end cable



Cable plug to free cable socket



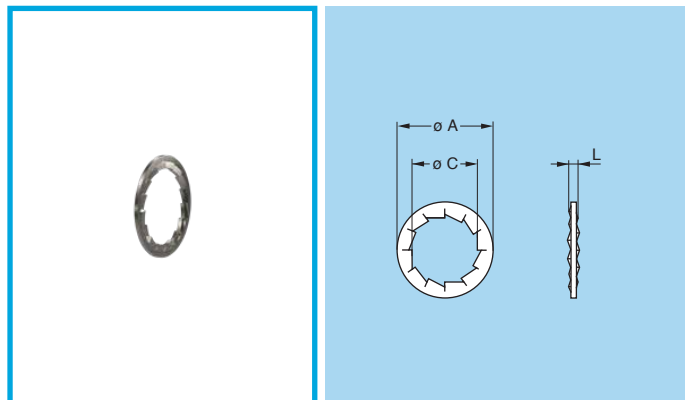
Cable plug to plug



Description	Version	Part number (L = 0.3 meter)	Part number (L = 0.75 meter)	Part number (L = 1 meter)
Plug open-end cable	Push-Pull	–	–	MFZ.0D.309.M10UN00
	Break-Away	–	–	MBZ.0D.309.M10UN00
Free cable socket open-end cable	–	–	–	MPZ.0D.309.M10UN00
Cable plug to free cable socket	Push-Pull	MFP.0D.309.D30UN00	MFP.0D.309.D75UN00	–
Cable Push-Pull plug to plug Break-Away	PP – BA	MFB.0D.309.D30UN00	MFB.0D.309.D75UN00	–

Spare parts

GBA Locking washers for HG● socket model

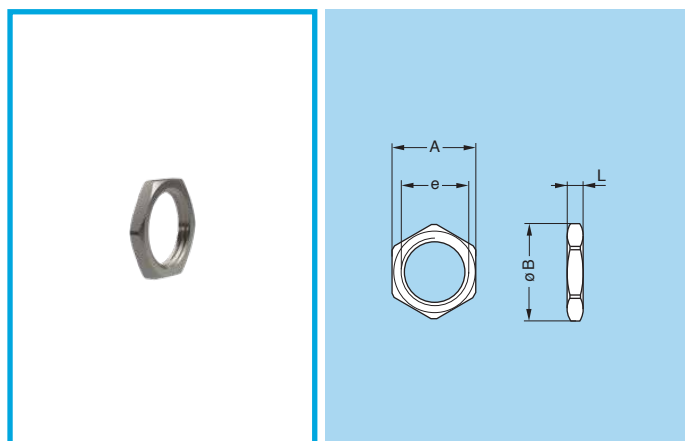


- Material: Nickel-plated bronze (3 µm)

Part number	Series	Dimensions (mm)		
		A	C	L
GBA.00.250.FN	DD	9.5	7.1	1.0
GBA.0S.250.FN	0D	12.5	9.1	1.0
GBA.1S.250.FN	1D	16.0	12.1	1.0
GBA.2S.250.FN	2D	19.6	15.2	1.2
GBA.3S.250.FN	3D	25.1	18.2	1.4

Note: to order this accessory separately, use the above part numbers.

GEA Hexagonal nuts for HG● socket model

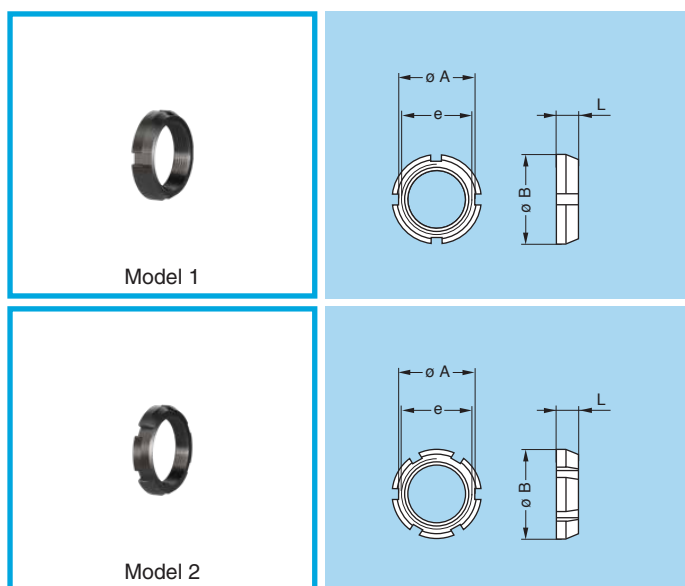


- Material: Nickel-plated brass (3 µm)

Part number	Series	Dimensions (mm)			
		A	B	e	L
GEA.00.240.LN	DD	9	10.2	M7 x 0.5	2.0
GEA.0S.240.LN	0D	11	12.4	M9 x 0.6	2.0
GEA.1D.240.LN	1D	14	15.8	M12 x 0.5	2.5
GEA.2D.240.LN	2D	17	19.2	M15 x 0.5	2.7
GEA.3D.240.LN	3D	22	25.0	M18 x 0.5	3.0

Note: to order this part separately, use the above part numbers. See page 27 for the tooling.

GEG Notched nuts for HX● and HY● socket model



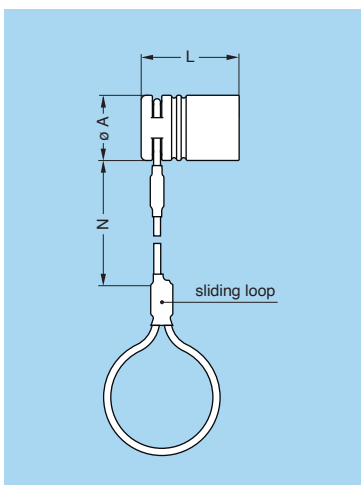
- Material: Anthracite nickel-plated brass (Ni 3 µm + Cr 0.3 µm)

Part number	Series	Model	Dimensions (mm)			
			A	B	e	L
GEG.00.240.LF	DD	1	8.8	10	M7 x 0.5	2.5
GEG.0S.240.LF	0D	1	10.6	12	M9 x 0.6	2.5
GEG.1D.240.LF	1D	1	14.1	16	M12 x 0.5	3.5
GEG.2D.240.LF	2D	2	17.6	20	M15 x 0.5	3.5
GEG.3D.240.LF	3D	2	21.0	24	M18 x 0.5	3.5

Note: DD, 0D, 1D and 2D series fixed and free cable sockets for back panel mounting are always delivered with this notched nut. To order this accessory separately, use the above part numbers. See page 27 for the tooling.

Accessories

BFZ Plug caps



- Body material: TPV (Thermoplastic vulcanized)
- Lanyard material: PES
- Crimp ferrule material: Nickel-plated brass + polyolefin
- Operating temperature: -55°/125°C
- Watertightness: IP68 20 meters / 2 hours.

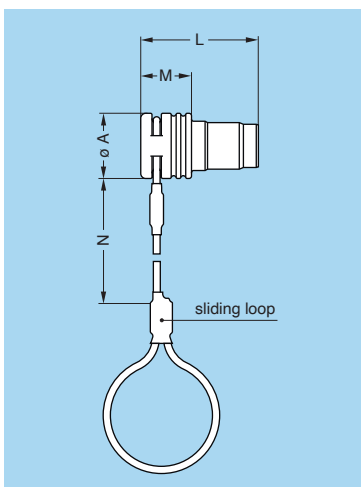
Part number	Dimensions (mm)		
	A	L	N ¹⁾
BFZ.DD.100.SCN ²⁾	7.0	12.3	60
BFZ.0D.100.SCN	9.5	14.3	85
BFZ.1D.100.SCN ²⁾	12.0	15.3	85
BFZ.2D.100.SCN ²⁾	15.0	16.3	85
BFZ.3D.100.SCN ²⁾	18.8	19.2	120

Note:

¹⁾ the tolerance on this dimension is ± 5 mm.

²⁾ coming soon.

BPZ Blanking caps for free cable socket



- Body material: TPV (Thermoplastic vulcanized)
- Lanyard material: PES
- Crimp ferrule material: Nickel-plated brass + polyolefin
- Operating temperature: -55°/125°C
- Watertightness: IP68 20 meters / 2 hours.

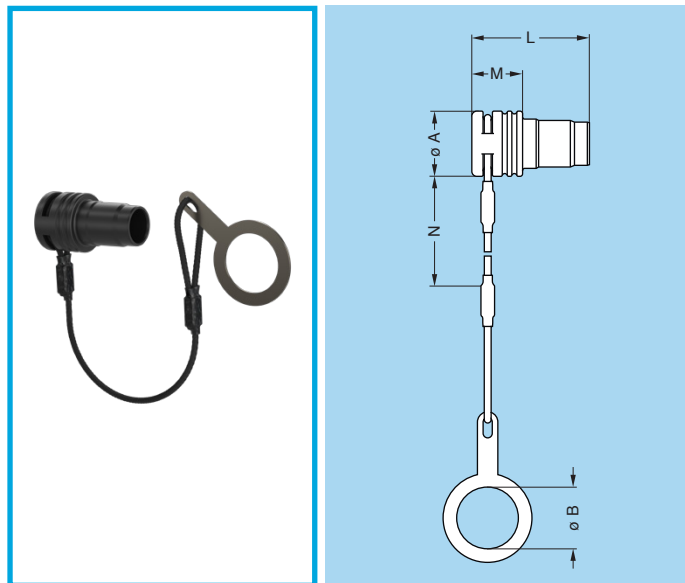
Part number	Dimensions (mm)			
	A	L	M	N ¹⁾
BPZ.DD.200.SCN ²⁾	7.0	15.3	7.5	60
BPZ.0D.200.SCN	9.5	17.2	7.4	85
BPZ.1D.200.SCN ²⁾	12.0	18.4	7.5	85
BPZ.2D.200.SCN ²⁾	15.0	19.4	7.5	85
BPZ.3D.200.SCN ²⁾	18.8	22.2	7.5	120

Note:

¹⁾ the tolerance on this dimension is ± 5 mm.

²⁾ coming soon.

BRZ Blanking caps for socket



- Body material: TPV (Thermoplastic vulcanized)
- Lanyard material: PES
- Crimp ferrule material: Nickel-plated brass + polyolefin
- Operating temperature: -55°/125°C
- Watertightness: IP68 20 meters / 2 hours.

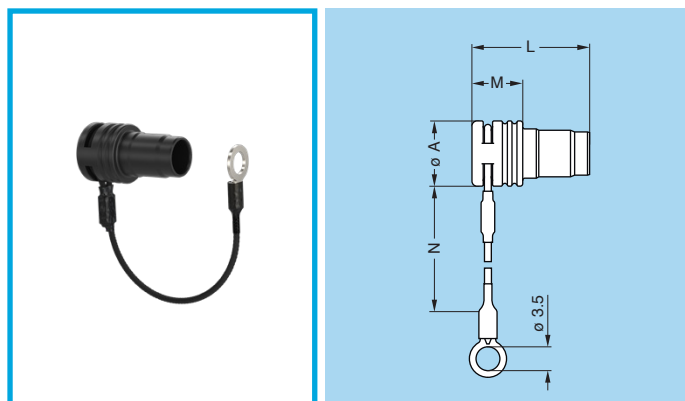
Part number	Dimensions (mm)				
	A	B	L	M	N ¹⁾
BRZ.DD.200.SCN ²⁾	7.0	7.1	15.2	7.4	60
BRZ.0D.200.SCN	9.5	9.1	17.2	7.4	85
BRZ.1D.200.SCN ²⁾	12.0	12.2	18.4	7.5	85
BRZ.2D.200.SCN ²⁾	15.0	15.2	19.4	7.5	85
BRZ.3D.200.SCN ²⁾	18.8	18.2	22.2	7.5	120

Note:

¹⁾ the tolerance on this dimension is ± 5 mm.

²⁾ coming soon.

BEZ Blanking caps for socket



- Body material: TPV (Thermoplastic vulcanized)
- Lanyard material: PES
- Crimp ferrule material: Nickel-plated brass + polyolefin
- Operating temperature: -55°/125°C
- Watertightness: IP68 20 meters / 2 hours.

Part number	Dimensions (mm)			
	A	L	M	N ¹⁾
BEZ.DD.200.SCN ²⁾	7.0	15.2	7.4	60
BEZ.0D.200.SCN	9.5	17.2	7.4	85
BEZ.1D.200.SCN ²⁾	12.0	18.4	7.5	85
BEZ.2D.200.SCN ²⁾	15.0	19.4	7.5	85
BEZ.3D.200.SCN ²⁾	18.8	22.2	7.5	120

Note:

¹⁾ the tolerance on this dimension is ± 5 mm.

²⁾ coming soon.

FGG Crimp ring for overmolding

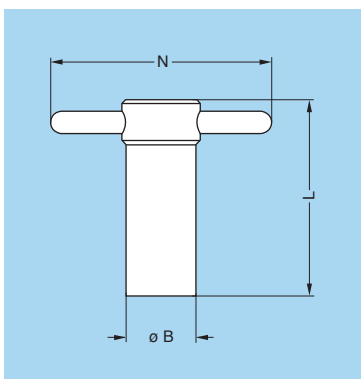


The crimp rings are used to crimp the outershield of cables before overmolding. It ensures the best possible ground contact and fixture between the cable screen and the connector backshell. This solution is adapted to volume assembly, and when using pressure overmolding.

Part number	Outer ϕ (mm)
FGG.DD.160.MN	5.3
FGG.0D.160.MN	8.4
FGG.1D.160.MN	10.0
FGG.2D.160.MN	13.0
FGG.3D.160.MN	15.5

Tooling

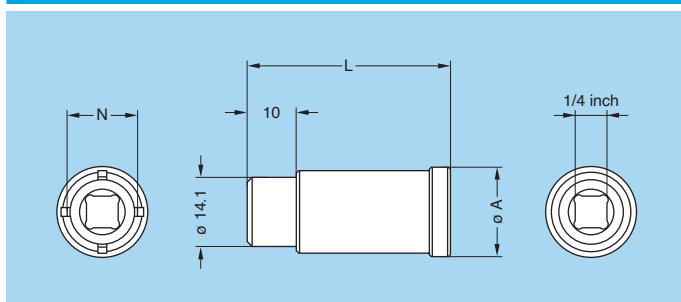
DCG Spanners for hexagonal nuts on HG● socket model



Part number	Series	Dimensions (mm)			Part number of the nut (page 24)
		B	L	N	
DCG.91.149.0TN	DD	14	40	50	GEA.00.240.LN
DCG.91.161.1TN	0D	16	45	52	GEA.0S.240.LN
DCG.91.201.4TN	1D	20	52	65	GEA.1D.240.LN
DCG.91.231.7TN	2D	23	62	68	GEA.2D.240.LN
DCG.91.282.2TN	3D	28	76	73	GEA.3D.240.LN

● Material: blackened steel

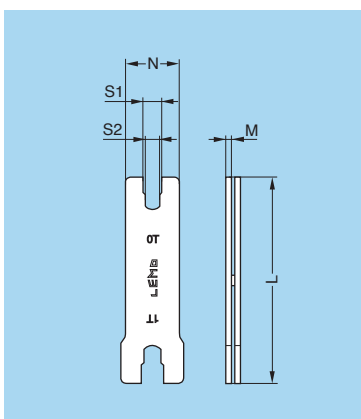
DCM Insert notched nuts tightening tools on HX● and HY● socket model



Part number	Dimensions (mm)			Part number of the nut (page 24)
	A	L	N	
DCM.65.088.AZ4	13.0	33.5	8.9	GEG.00.240.LF
DCM.65.106.AZ4	15.0	34.3	10.8	GEG.0S.240.LF
DCM.65.141.AZ4	18.4	41.5	14.2	GEG.1D.240.LF
DCM.65.176.AZ6	22.4	41.5	17.9	GEG.2D.240.LF
DCM.65.205.AZ6	25.5	41.5	21.2	GEG.3D.240.LF

Note: for standard 1/4 inch tools adaptor.

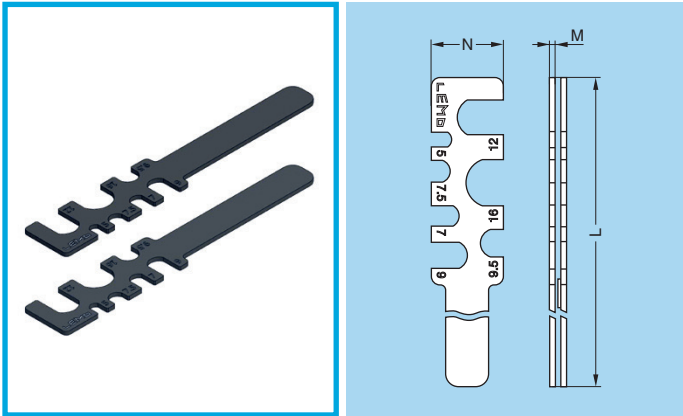
DCP Set of flat spanners for plug backnut



Part number	Series	Dimensions (mm)				
		L	M	N	S1	S2
DCP.0T.110.TN	0D	95	2.5	21	7.55	7.05
DCP.0T.110.TN	1D	95	2.5	25	11.05	9.05
DCP.2T.110.TN	2D	115	3.0	30	14.05	12.05
DCP.2T.110.TN	3D	115	3.0	35	16.05	14.05

● Material: blackened steel

DCP Set of flat spanners for plug backnut

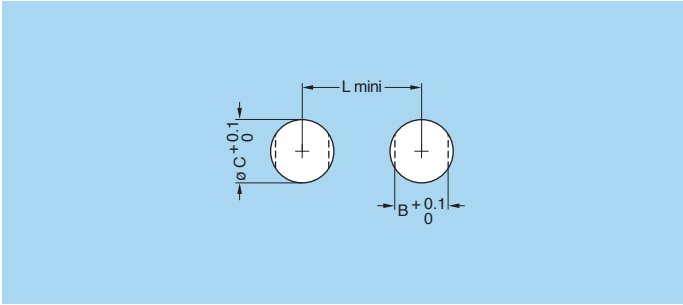


Part number	Series	Dimensions (mm)		
		L	M	N
DCP.TT.FSG.TN	DD-0D	152	2	25

● Material: blackened steel

Panel cut-outs

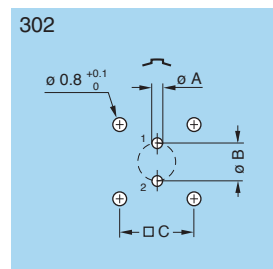
HG●, HX● and HY● models



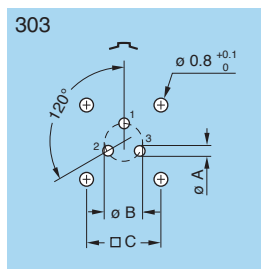
Reference		Panel cut-out			Mounting nut torque (Nm)
Model	Series	B	C	L	
H●●	DD	6.4	7.1	12.5	1.0
H●●	0D	8.3	9.1	14.5	2.5
H●●	1D	11.1	12.1	18.5	4.5
H●●	2D	14.1	15.1	22.5	6.0
H●●	3D	17.1	18.2	27.0	9.0

PCB drilling pattern

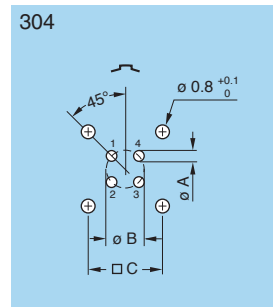
Socket with straight print contact



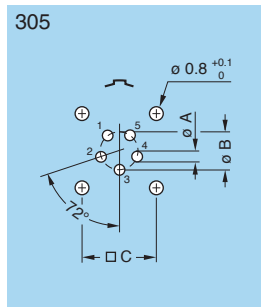
Series	Dimensions		
	A	B	C
DD	0.6	1.2	3.81
0D	0.8	2.2	5.08
1D	0.8	2.8	7.62
2D	0.8	4.4	8.89



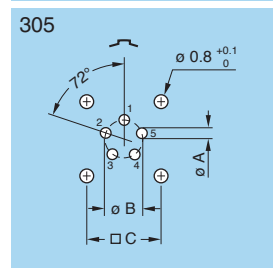
Series	Dimensions		
	A	B	C
DD	0.6	1.35	3.81
0D	0.8	2.30	5.08
1D	0.8	3.00	7.62
2D	0.8	4.60	8.89



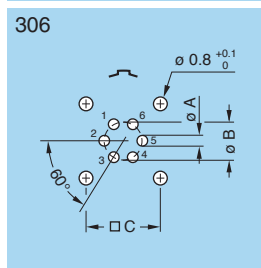
Series	Dimensions		
	A	B	C
DD	0.6	1.6	3.81
0D	0.6	2.5	5.08
1D	0.8	3.1	7.62
2D	0.8	5.0	8.89
3D	0.8	6.2	10.16



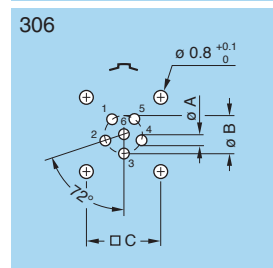
Series	Dimensions		
	A	B	C
DD	0.5	1.7	3.81



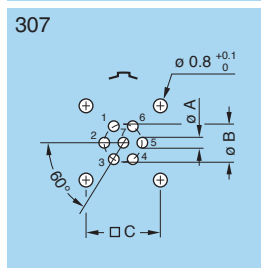
Series	Dimensions		
	A	B	C
0D	0.6	2.8	5.08
1D	0.8	3.4	7.62
2D	0.8	5.2	8.89



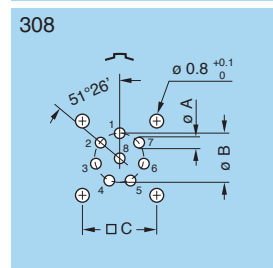
Series	Dimensions		
	A	B	C
0D	0.6	3.0	5.08
1D	0.8	3.7	7.62



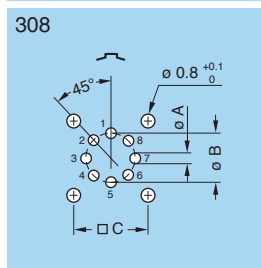
Series	Dimensions		
	A	B	C
DD	0.5	1.8	3.81
2D	0.8	5.6	8.89



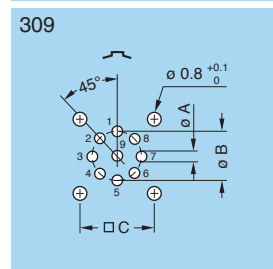
Series	Dimensions		
	A	B	C
0D	0.6	3.00	5.08
1D	0.8	3.70	7.62
2D	0.8	5.80	8.89



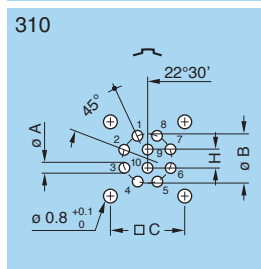
Series	Dimensions		
	A	B	C
1D	0.8	3.8	7.62



Series	Dimensions		
	A	B	C
2D	0.8	6.4	8.89

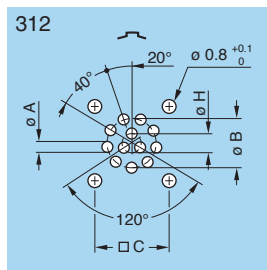


Series	Dimensions		
	A	B	C
0D	0.6	3.2	5.08

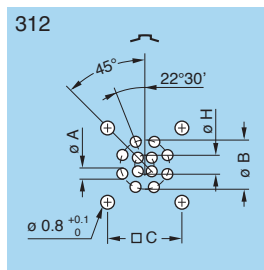


Series	Dimensions			
	A	B	C	H
1D	0.6	3.95	7.62	1.40
2D	0.8	6.30	8.89	2.15
3D	0.8	7.90	10.16	2.80

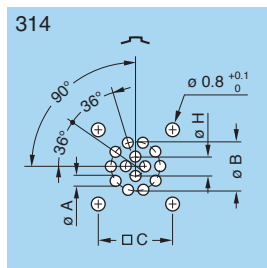
Note: all views are from the side of the socket.



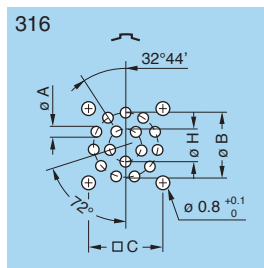
Series	Dimensions			
	A	B	C	H
0D	0.5	3.3	5.08	1.25



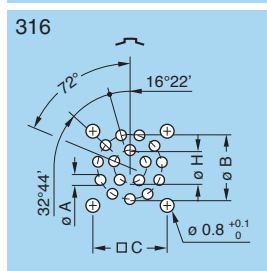
Series	Dimensions			
	A	B	C	H
2D	0.8	6.50	8.89	2.80



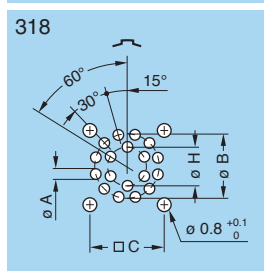
Series	Dimensions			
	A	B	C	H
1D	0.6	4.4	7.62	1.90
2D	0.8	6.5	8.89	2.65
3D	0.8	8.2	10.16	3.40



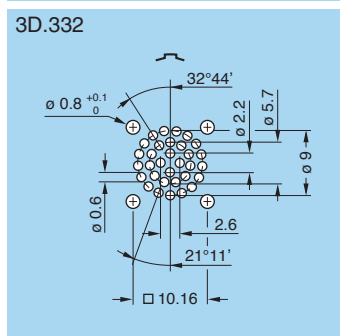
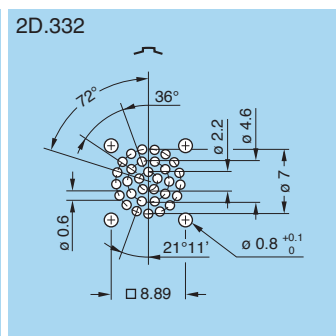
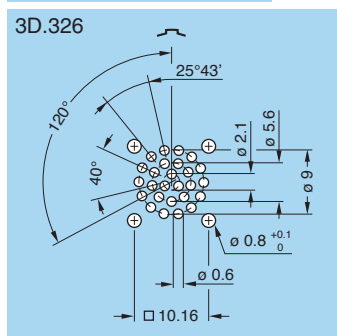
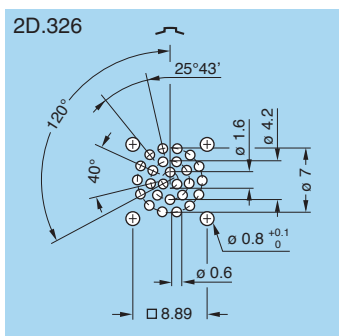
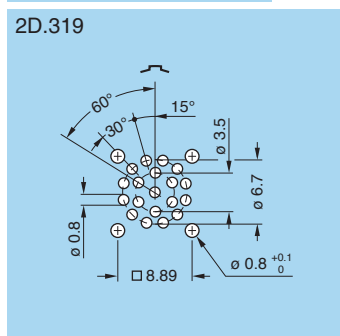
Series	Dimensions			
	A	B	C	H
1D	0.6	4.4	7.62	2.0



Series	Dimensions			
	A	B	C	H
2D	0.8	6.6	8.89	3.10



Series	Dimensions			
	A	B	C	H
2D	0.8	6.7	8.89	3.50
3D	0.8	8.4	10.16	4.34



Note: all views are from the side of the socket.

Metal collet nut tightening torque

Series	Maximum metal collet nut tightening torque (Nm)
DD	0.25
0D	0.70

Series	Maximum metal collet nut tightening torque (Nm)
1D	0.80
2D	2.00

Series	Maximum metal collet nut tightening torque (Nm)
3D	3.00

Technical characteristics

Materials and treatments

Component	Shell material ¹⁾	Material
	code F	
Outer shell, conical nut, coupling nut	●	Brass
Earthing crown	●	Bronze
Latch sleeve / Ring	●	Cu-Be / Brass
Hexagonal nut	●	Brass
Male contact	●	Brass
Female contact	●	Bronze
Insulator	●	PEEK
O-ring	●	Fluorosilicone FVMQ
Sealing resin	●	Silicone

● Standard

Note: standards for surface treatment are as follows: nickel-plated SAE AMS QQ N 290; gold-plated ISO 27874.

¹⁾ F = Anthracite nickel-plated brass.

Electrical performance

Characteristics	Value	IEC international	MIL-spec tests
Insulation resist. (at ambient temp.) ¹⁾	> 10 ¹² Ω, > 10 ¹⁰ Ω (after humidity)	IEC 60512-3-1 test 3a	EIA-364-21
Dielectric withstanding volt. (sea level)	See test voltage in insert configuration	IEC 60512-4-1 test 4a	EIA-364-20
Contact resistance	See table below	IEC 60512-2-1 test 2a	EIA-364-06
Current rating	See insulator configuration	IEC 60512-5-1 test 5a	–
Shell to shell conductivity	See table below	IEC 60512-2-6 test 2f	EIA-364-83
Shielding effectiveness	≥ 75 dB up to 10 MHz	IEC 60169-1-3 essai 9a	EIA-364-66
	≥ 40 dB up to 1GHz	IEC 60169-1-3 essai 9a	EIA-364-66

Note: ¹⁾ after humidity test: 21 days at 95% RH according to IEC 60068-2. Insulation resistance measured between the contacts and contact/shell.

Contact resistance with relation to the number of mating cycles

(measured according to IEC 60512-2-1 test 2a)

Average values measured after the mating cycles and the salt spray test according to IEC 60068-2-11 test Ka.

A ø (mm)	Contact resistance (mΩ)			A ø (mm)	Contact resistance (mΩ)		
	1000 cycles	3000 cycles	5000 cycles		1000 cycles	3000 cycles	5000 cycles
0.35	8.0	–	–	1.3	2.8	2.9	3.6
0.5	7.5	8.3	8.7	1.6	2.9	3.1	3.5
0.7	5.6	5.7	6.1	2.0	2.6	2.7	3.3
0.9	4.1	4.2	4.8	3.0	2.0	2.2	3.1

Shell to shell conductivity

Series	Shell to shell conductivity (mΩ)	Series	Shell to shell conductivity (mΩ)	Series	Shell to shell conductivity (mΩ)
DD	9.0	1D	6.0	3D	4.5
0D	8.0	2D	5.5		

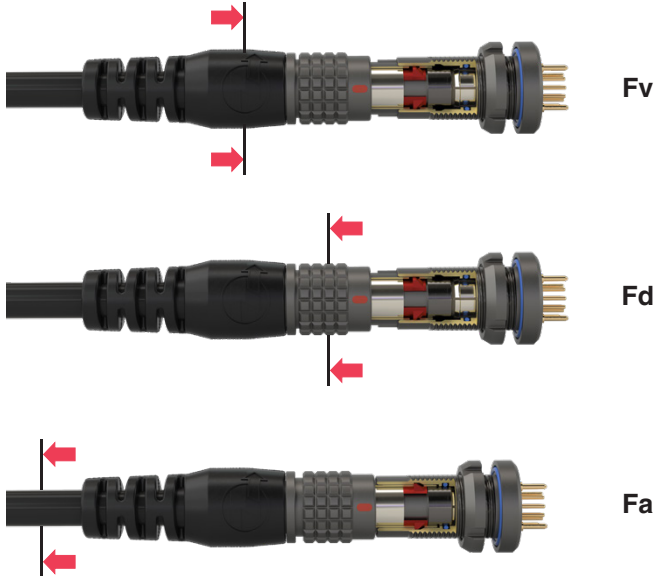
Mechanical performance

Characteristics	Value	IEC international	MIL-spec tests
Endurance	5000 cycles	IEC 60512-5 test 9a	MIL-DTL-38999M, § 4.5.8.2.
Latching retention force	From 100 N up to 400 N	–	–
Cable / overmolding bending endurance	20'000 cycles from -40°C, +90°C	IEC 60335-1 §25-14	–

Environmental performance

Characteristics	Value	IEC international	MIL-spec tests
Operating temperature	-55°C/+150°C (socket)	IEC 60068-1	–
	-40°C/+90°C (plug & free cable socket)	IEC 60068-1	–
Thermal shock	7 cycles: -65°C to +125°C	IEC 60068-2-14	EIA-364-32 test condition IV
Moist heat test	+55°C 95% 72 hours	AECTP 300 meth 306	–
Solar radiation	10 cycles of 24 hours	–	MIL-STD-810H, method 505.7
Altitude (humidity)	6 cycles of 24 hours (70'000 feet), up to 95% at 60°C	–	MIL-STD-810H, method 507.6
Snow and ice	6 mm ice thickness	–	MIL-STD-810H, method 521.4
Freeze / Thaw	20 cycles of 2 hours	–	MIL-STD-810H, method 524
Fluid contamination	Fuels, gasoline, hydraulic oils, solvents, de-icing	–	MIL-STD-810H, method 504
Fungus	Satisfied - by material analysis	–	MIL-STD-810H, method 508.8
Ingress protection index	IP68 (at 20 m, 2 hours), mated and unmated condition	IEC 60529	MIL-STD-810H, method 512.6
Leakage rate	< 10 ⁻⁷ mbar·l·s ⁻¹	IEC 60512-7	–
Rain and water	Rainfall rate 8 mm/min, wind 18 m/s, 30 min	–	MIL-STD-810H, method 506.6
Salt fog, corrosive environments	1000 hours, + interface with aluminium surtec	IEC 60068-2-11 test Ka	MIL-STD-810H, method 506.6
Sand and dust	Blowing dust: air velocity 5 m/s, sand concentration 10 g/m ³ , 1 hour at +71°C. Blowing sand: air velocity 18 m/s, sand concentration 2.2 g/m ³ , 1 hour at +71°C	–	MIL-STD-810H, method 510.7
High altitude, operational	30'000 ft, 60 minutes exposure after stabilization, 10 m/s (32.8 ft/s) max rate of altitude change. 3°C/min (5°F/min) max rate of temperature change	–	MIL-STD-810H, method 500.6
High altitude, storage	40'000 ft, 60 minutes exposure after stabilization, 10 m/s (32.8 ft/s) max rate of altitude change. 3°C/min (5°F/min) max rate of temperature change	–	MIL-STD-810H, method 500.6
Low pressure, rapid decompression	59.1 to 18.8 kPa (443 to 141 torr) < 15 sec	–	MIL-STD-810H, method 500.6
Climatical category	50/175/21	IEC 60068-1	–

Mechanical Push-Pull characteristics



Keyed watertight series

Force (N)	Series				
	DD	0D	1D	2D	3D
Fv	14	15	16	18	20
Fd	12	13	14	15	18
Fa	100	180	300	300	400

Notes: forces were measured on outer shells **not fitted with contacts**.

1N = 0.102 kg.

F_v: average latching force.

F_d: average unmating force with axial pull on the outer shell.

F_a: average pull force with axial pull on the cable

Mechanical Break-Away characteristics



Keyed watertight series

Force (N)	Series				
	DD	0D	1D	2D	3D
Fba	38	45	50	55	60

Notes: forces were measured on outer shells **not fitted with contacts**.

1N = 0.102 kg.

F_{ba}: average break-away force with axial pull on the cable

Note:

Product safety notice & Disclaimers

PLEASE READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY AND CONSULT ALL RELEVANT NATIONAL AND INTERNATIONAL SAFETY REGULATIONS FOR YOUR APPLICATION.
IMPROPER HANDLING, CABLE ASSEMBLY, OR WRONG USE OF CONNECTORS CAN RESULT IN HAZARDOUS SITUATIONS.

1. SHOCK AND FIRE HAZARD

Incorrect wiring, the use of damaged components, presence of foreign objects (such as metal debris), and / or residue (such as cleaning fluids), can result in short circuits, overheating, and / or risk of electric shock.

Mated components should never be disconnected while live as this may result in an exposed electric arc and local overheating, resulting in possible damage to components.

2. HANDLING

Connectors and their components should be visually inspected for damage prior to installation and assembly. Suspect components should be rejected or returned to the factory for verification.

Connector assembly and installation should only be carried out by properly trained personnel. Proper tools must be used during installation and / or assembly in order to obtain safe and reliable performance.

3. USE

Connectors with exposed contacts should never be live (or on the current supply side of a circuit). Under general conditions voltages above 30 VAC and 42 VDC are considered hazardous and proper measures should be taken to eliminate all risk of transmission of such voltages to any exposed metal part of the connector.

4. TEST AND OPERATING VOLTAGES

The maximum admissible operating voltage depends upon the national or international standards in force for the application in question. Air and creepage distances impact the operating voltage; reference values are indicated in the catalogue however these may be influenced by PC board design and / or wiring harnesses.

The test voltage indicated in the catalogue is 75% of the mean breakdown voltage; the test is applied at 500 V/s and the test duration is 1 minute.

5. CE MARKING

CE marking  means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives. CE marking  applies to complete products or equipment, **but not to electromechanical components, such as connectors.**

6. PRODUCT IMPROVEMENTS

The LEMO Group reserves the right to modify and improve to our products or specifications without providing prior notification.

7. WARNING (Prop 65 State of California)

Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. LEMO products are exempt from proposition 65 warnings because they are manufactured, marketed, and sold solely for commercial and industrial use.

For further information, please visit: <https://web.lemo.com/img/resources/quality/LEMO-Prop-65-compliance-declaration.pdf>

8. UL RECOGNITION

LEMO connectors are components recognized by the Underwriters Laboratories (UL), facilitating the UL approval of the complete system (including LEMO connector, cable and your equipment).

9. REACH AND ROHS

LEMO connector specifications comply with the requirements of the RoHS directive (2011/65/EU) and REACH regulation (1907/2006/EU) of the European Parliament and latest amendments. These REACH and ROHS regulations specify the restrictions of the use of hazardous substances in LEMO products marketed in Europe.

DISCLAIMERS

LEMO works constantly to improve the quality of its products; the information and illustrations figuring in this document may therefore vary and are not binding. In any case, LEMO makes no specific warranty of merchantability, fitness for a particular purpose, third party components as such or included in assembly, non-infringement, title, accuracy, completeness, or security. The user is fully responsible for his products and applications using LEMO component.

In no event shall LEMO, its affiliates, officers, agents or employees be liable for any incidental, indirect, special or consequential damages in connection with the products or services provided by LEMO, including (without limitation) loss of profits or revenues, interruption of business, loss of use of the products or any associated equipment, materials, components or products, damages to associated equipment or in combination with other components, materials.

Reproduction of significant portions of LEMO information in LEMO data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. LEMO is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.



HEADQUARTERS
Switzerland

LEMO SA
Tel: +41 21 695 16 00
info@lemo.com

Subsidiaries & distributors



Online catalogue



lemo.com

