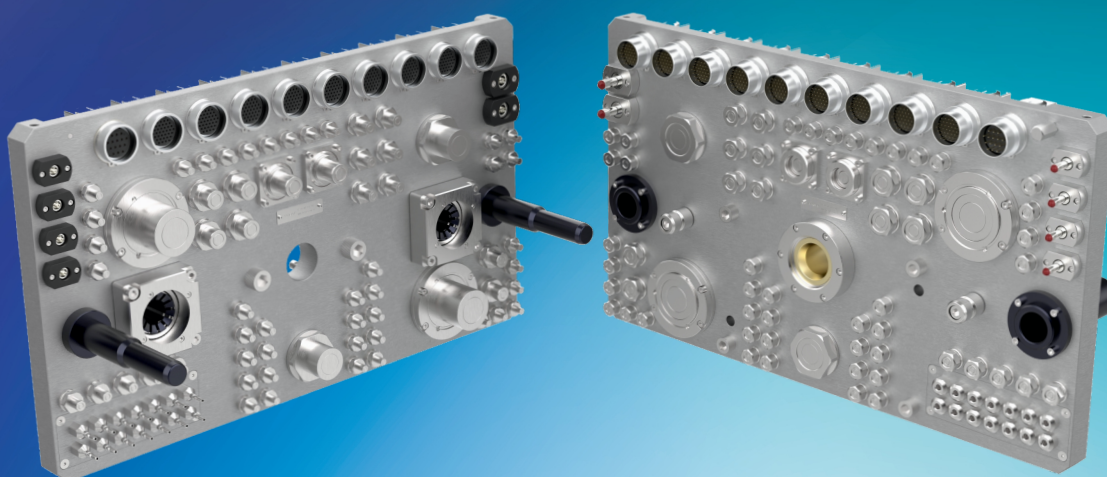
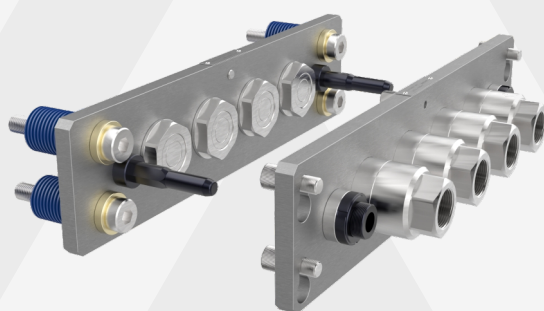


LANGAN[®]



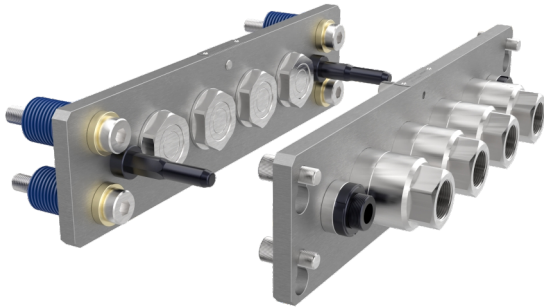
Integrated Energy Circuits

QCS QUICK CONNECTION SYSTEM MANUAL

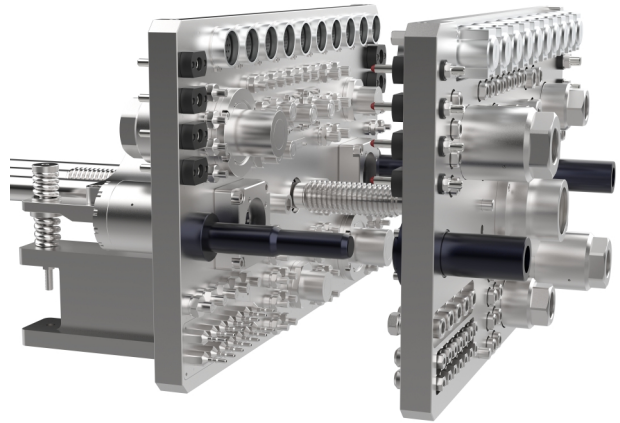


LangAn(Tianjin)Technology Co.,Ltd

Innovative Integrated Energy Connection Solutions



Customized solution: engine performance test



Customized automatic solution for aerospace sector

We create manual or automatic connection for all energy circuits synchronously. Connection solutions could fully meet various applications.

Integrated solutions improve efficiency and safety for production process.

As a recognized specialist, with the help of expertise, proper advice, products & solutions could be offered for more demanding applications:

- ◆ Customized manual solutions
- ◆ Customized automatic solutions

Our solutions are designed based on technical needs & using standard components to produce.

- ◆ Modular electrical & fluid connectors
- ◆ Connection & locking system
- ◆ Guiding & floating system

Main Applications



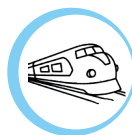
Plastic

- Injection molding machine
- Blowing molding machine



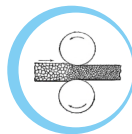
Automotive

- Engine test benches (cold or hot test)
- Stamping hydroforming
- Aluminium casting



Railway

- Converters



Metallurgy

- Steel & aluminium production
- Rolling mills



Aerospace

- Engine test bench
- Wings and fuselage, etc



New Energy

- New energy vehicles



Customized automatic solution- for new energy sector

We are always here to help you

Before project starting

With years of expertise, we can offer accurate and timely advice, work closely with you to provide complete solutions as per production needs and industrial development challenges.

While project carrying out

Combining innovation with our know how, large varieties of connection solutions were developed to meet your expectation & requirements for new technology.

After project closing

Our specialists could offer a complete service for you, including following-up, assisting, maintenance, supporting and initiating other projects and long-term commitment etc.

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Components in Customized Solutions.....	4
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Company Profile

LangAn (Tianjin)Technology Co.,Ltd is a high-tech enterprise & passed ISO9000 certification. Multiple patents for invention & utility model were granted. Main products include quick connectors, quick-release couplings, wiring harness, tool changers, & hydrogen fueling components. Export goes to Southeast Asian countries, Germany, North America, and so on..

Main customers include TESLA、BENZ、BMW、VOLVO、LAND ROVER、BYD、NIO、XPENG、LI 、SAIC、BAIC、GAC、GWM、GEELY、 and so on.

We are dedicated to offering high quality products and better service since establishment. Meanwhile we are a company to innovate and improve production process continuously & respond requests from customers rapidly since market trend to be updated from time to time. Aiming to grow sustainably and provide whole package with higher quality products, better service and solutions.

Highlights

◆ Honors

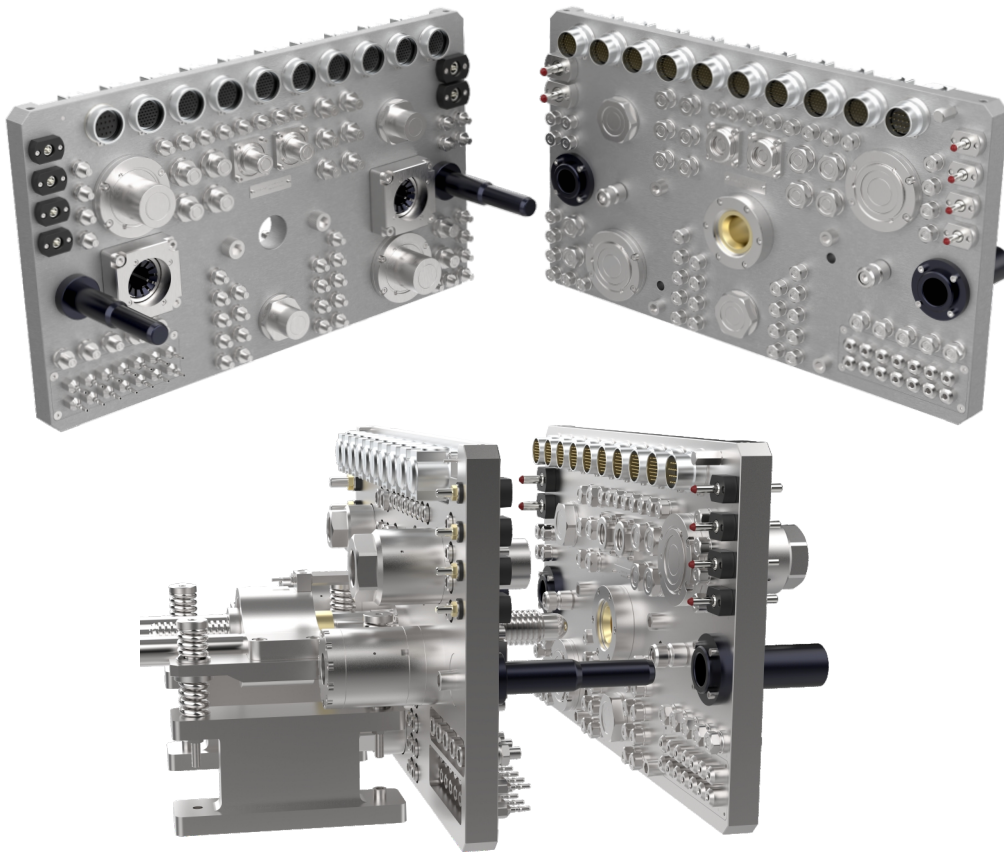


◆ Advanced equipments



Disclaimer

All dimensions are in mm. Some figures are for illustrative purposes only. Subject to change without notice. Errors and omissions excepted. We reserve the right to change our products and their technical specifications at any time in the interest of technical improvement. This publication supersedes all prior publications.



Automatic solutions could be customized to meet your need for every single application.

Automatic connection solutions are designed particularly for the environments which is featured by difficult access, extreme temperature, or bigger connection force, even frequent connection & disconnection.

These solutions are designed for:

Quick releasing couple system with bigger dimension / large number of connectors / connectors with bigger diameter

Specially it's designed for fully automatic line adapting the changing in the process and future needs in the factory.

Advantages

- 1) Time saving:** Connect all the circuits simultaneously and quickly, which can significantly save the operation time and improve efficiency.
- 2) Avoiding misconnection:** Remove all the risk of misconnection, since unique & fixed mating position in all circuits, including electrical circuits.

LH Type Anti-Pollution Fluid Connector

LH Type

Application: Hydraulic circuits and water.

Spill-free when disconnection, no introduction of contaminants into circuits and working area.

- Full range of sizes
- Ensuring an excellent flow whatever the direction of flow (socket to plug or plug to socket)



LH 04 to 25 / A0

Technical data

		LH 04	LH 06	LH 08	LH 10	LH 12	LH 14	LH 20	LH 25
Nominal bore (mm)		4	6	8	10	12	14	20	25
	Standard version	–	–	–	–	–	–	–	16
Max. Operating pressure (bar)	PA version	160	160	160	160	160	160	160	–
	PB version	500	500	500	250	250	250	250	250
Connection force without pressure(N)		80	126	163	195	210	249	328	360
Socket/plug repulsion cross section (cm ²)		0.87	1.54	2.14	3.27	4.52	6.01	11.34	17.35
Loss of fluid * (water) for one disconnection under pressure 3 bar (cm ³)		0.0035	0.0099	0.0116	0.0139	0.0200	0.0154	0.0230	0.0780

* Fluid loss is not cumulative. For 1,000 cycles, the average spillage is 10 times smaller.

LH 37 to 75 / A2



Technical data

	LH 37	LH 50	LH 75
Nominal diameter (mm)	37	50	75
Max. working pressure (bar)	16	16	10
Connection force without pressure (N)	460	700	900
Socket/plug repulsion cross section (cm ²)	32	57	125
Loss of fluid (water) for one disconnection under pressure 3 bar (cm ³) *	0.08	0.2	–

* Fluid loss is not cumulative. For 1,000 cycles, the average spillage is 10 times smaller.

Sealing

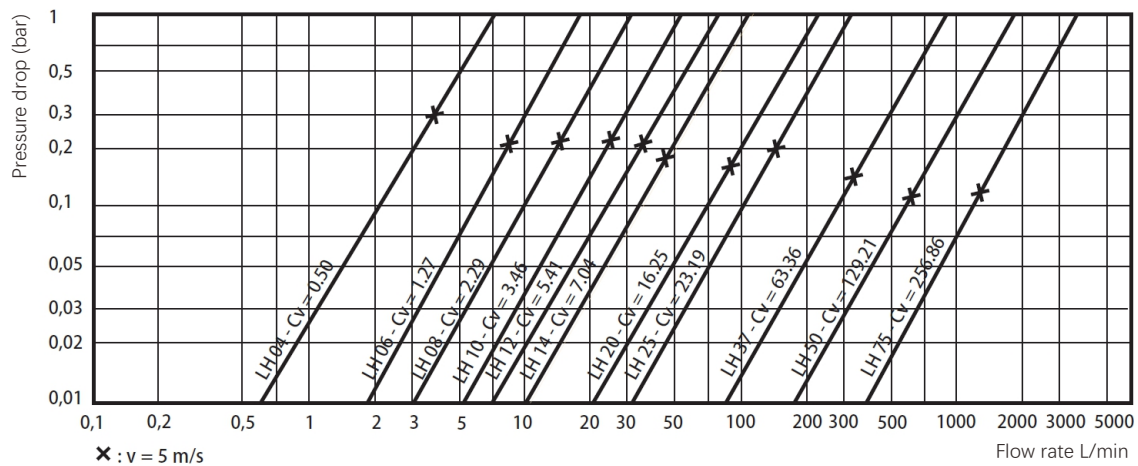
- ◆ **Standard:** Nitrile seals (NBR), operating temperature: -15 °C ~ +100 °C
- ◆ **Option:** Fluorocarbon (FKM) (Code: SF), operating temperature: -10 °C ~ +200 °C
Ethylene Propylene seals (EPDM) (Code: SE), operating temperature: -20 °C ~ +150 °C, +200 °C for hot water and steam

Attention: Ethylene Propylene (EPDM) (Code: SE) is not suitable for mineral oils, greases, fuels and hydrocarbons.

Recommended connection speed: 0.1 ~ 0.2 m/s

Hydraulic flow rate/pressure drop charts

Hydraulic flow rate (water) L / min. for a speed of 5 m/s										
LH 04	LH 06	LH 08	LH 10	LH 12	LH 14	LH 20	LH 25	LH 37	LH 50	LH 75
3.8	8.5	15	23.6	34	46.2	94	147	322	589	1325

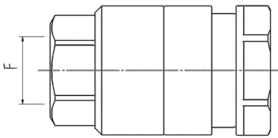
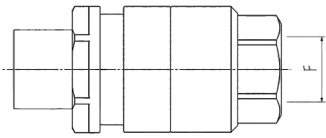


Flow direction and test condition:

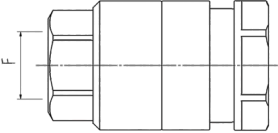
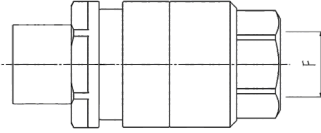
Flow direction: socket → plug, Type of fluid: water at 20 °C

LH Type Anti-Pollution Fluid Connector

Part-numbers: LH 04 to 25 / A0

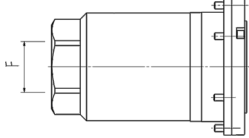
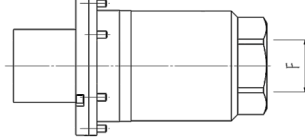
Model	Female thread(F)	Part-numbers	
		LH/socket with build-in shut-off	LH/plug with build-in shut off
			
LH 04	G 1/4	LH04SFG1-A0-PA	LH04PFG1-A0-PA
		LH04SFG1-A0-PB	LH04PFG1-A0-PB
	Rc 1/4	LH04SFR1-A0-PA	LH04PFR1-A0-PA
		LH04SFR1-A0-PB	LH04PFR1-A0-PB
	NPT 1/4	LH04SFN1-A0-PA	LH04PFN1-A0-PA
		LH04SFN1-A0-PB	LH04PFN1-A0-PB
	UN 7/16" - 20	LH04SFU1-A0-PA	LH04PFU1-A0-PA
		LH04SFU1-A0-PB	LH04PFU1-A0-PB
LH 06	G 3/8	LH06SFG2-A0-PA	LH06PFG2-A0-PA
		LH06SFG2-A0-PB	LH06PFG2-A0-PB
	Rc3/8	LH06SFR2-A0-PA	LH06PFR2-A0-PA
		LH06SFR2-A0-PB	LH06PFR2-A0-PB
	NPT3/8	LH06SFN2-A0-PA	LH06PFN2-A0-PA
		LH06SFN2-A0-PB	LH06PFN2-A0-PB
	UN 9/16" - 20	LH06SFU2-A0-PA	LH06PFU2-A0-PA
		LH06SFU2-A0-PB	LH06PFU2-A0-PB
LH 08	G 1/2	LH08SFG3-A0-PA	LH08PFG3-A0-PA
		LH08SFG3-A0-PB	LH08PFG3-A0-PB
	Rc 1/2	LH08SFR3-A0-PA	LH08PFR3-A0-PA
		LH08SFR3-A0-PB	LH08PFR3-A0-PB
	NPT 1/2	LH08SFN3-A0-PA	LH08PFN3-A0-PA
		LH08SFN3-A0-PB	LH08PFN3-A0-PB
	UN 9/16" - 18	LH08SFU3-A0-PA	LH08PFU3-A0-PA
		LH08SFU3-A0-PB	LH08PFU3-A0-PB
LH 10	G 1/2	LH10SFG3-A0-PA	LH10PFG3-A0-PA
		LH10SFG3-A0-PB	LH10PFG3-A0-PB
	Rc 1/2	LH10SFR3-A0-PA	LH10PFR3-A0-PA
		LH10SFR3-A0-PB	LH10PFR3-A0-PB
	NPT 1/2	LH10SFN3-A0-PA	LH10PFN3-A0-PA
		LH10SFN3-A0-PB	LH10PFN3-A0-PB
	UN 9/16" - 18	LH10SFU3-A0-PA	LH10PFU3-A0-PA
		LH10SFU3-A0-PB	LH10PFU3-A0-PB

Part-numbers: LH 04 to 25 / A0

Model	Female thread(F)	Part-numbers	
		LH/socket with build-in shut-off	LH/plug with build-in shut off
			
LH 12	G 3/4	LH12SFG4-A0-PA	LH12PFG4-A0-PA
		LH12SFG4-A0-PB	LH12PFG4-A0-PB
	Rc3/4	LH12SFR4-A0-PA	LH12PFR4-A0-PA
		LH12SFR4-A0-PB	LH12PFR4-A0-PB
	NPT3/4	LH12SFN4-A0-PA	LH12PFN4-A0-PA
		LH12SFN4-A0-PB	LH12PFN4-A0-PB
	UN 7/8"- 14	LH12SFU4-A0-PA	LH12PFU4-A0-PA
		LH12SFU4-A0-PB	LH12PFU4-A0-PB
LH 14	G 3/4	LH14SFG4-A0-PA	LH14PFG4-A0-PA
		LH14SFG4-A0-PB	LH14PFG4-A0-PB
	Rc3/4	LH14SFR4-A0-PA	LH14PFR4-A0-PA
		LH14SFR4-A0-PB	LH14PFR4-A0-PB
	NPT3/4	LH14SFN4-A0-PA	LH14PFN4-A0-PA
		LH14SFN4-A0-PB	LH14PFN4-A0-PB
	UN 1 1/16"- 12	LH14SFU6-A0-PA	LH14PFU6-A0-PA
		LH14SFU6-A0-PB	LH14PFU6-A0-PB
LH 20	G 1	LH20SFG5-A0-PA	LH20PFG5-A0-PA
		LH20SFG5-A0-PB	LH20PFG5-A0-PB
	Rc1	LH20SFR5-A0-PA	LH20PFR5-A0-PA
		LH20SFR5-A0-PB	LH20PFR5-A0-PB
	NPT1	LH20SFN5-A0-PA	LH20PFN5-A0-PA
		LH20SFN5-A0-PB	LH20PFN5-A0-PB
	UN 1 5/16"- 12	LH20SFU7-A0-PA	LH20PFU7-A0-PA
		LH20SFU7-A0-PB	LH20PFU7-A0-PB
LH 25	G 1 1/4	LH25SFG6-A0	LH25PFG6-A0
		LH25SFG6-A0-PB	LH25PFG6-A0-PB
	Rc1 1/4	LH25SFR6-A0	LH25PFR6-A0
		LH25SFR6-A0-PB	LH25PFR6-A0-PB
	NPT1 1/4	LH25SFN6-A0	LH25PFN6-A0
		LH25SFN6-A0-PB	LH25PFN6-A0-PB
	UN 1 5/8"- 12	LH25SFU8-A0	LH25PFU8-A0
		LH25SFU8-A0-PB	LH25PFU8-A0-PB

LH Type Anti-Pollution Fluid Connector

Part-numbers: LH 04 to 25 / A0

Model	Female thread(F)	Part-numbers	
		LH/socket with build-in shut-off	LH/plug with build-in shut off
			
LH 37	G 1 1/2	LH37SFG7-A2	LH37PFG7-A2
	NPT1 1/2	LH37SFN7-A2	LH37PFN7-A2
LH 50	G 2	LH50SFG8-A2	LH50PFG8-A2
	NPT 2	LH50SFN8-A2	LH50PFN8-A2
LH 75	G 3	LH75SFG9-A2	LH75PFG9-A2
	NPT 3	LH75SFN9-A2	LH75PFN9-A2

Back adapter clamping torque in N.m at +/- 15%							
LH 04	LH 06	LH 08	LH 10	LH 12	LH 14	LH 20	LH 25
40	60	70	82	85	96	120	150

Technical advice: Fitting of sockets and plugs with flexible hoses.

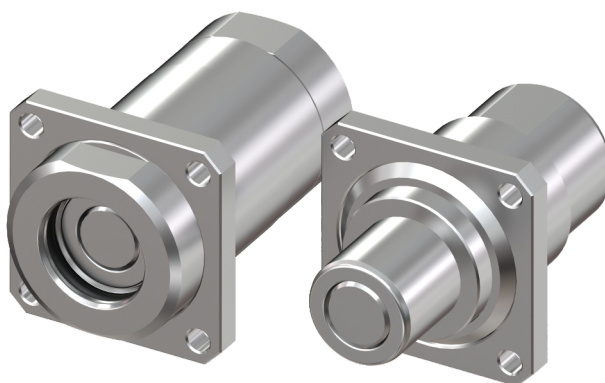
⚠ Checking freedom of socket/plug motion after applying proper tightening torque on adapter.

LX Type

For applications with high dynamic stress, harsh operating conditions (hydroforming and steel industry, etc.), pulse cycles and/or high vibrations.

- Free from Spillage
- Ensuring an excellent flow whatever the flow direction(socket to plug or plug to socket)
- High flow rate

Technical data



		LX 08	LX 12	LX 20	LX 25	LX 33
Nominal bore (mm)		8	12	20	25	33
Max. working pressure(bar)		500	500	500	500	350
Connection force without pressure (N)		335	660	785	870	860
Socket/pin repulsion cross section (cm ²)		3.80	7.06	11.30	18.08	27.34
Max. compensation volume	Socket(cm ³)	5.27	11.20	22.73	42.66	75.88
	plug (cm ³)	4.60	10.28	20.71	43.98	71.80
Loss of fluid * (water) for one disconnection under pressure 3 bar (cm ³)		0.170	1.240	0.420	0.957	0.701

* Fluid loss is not cumulative. For 5,000 cycles, the average spillage is 3 times smaller.

LX Type High Pressure Fluid Connector

Construction

Stainless steel with high mechanical strength

Recommended connection speed: 0.1~0.2 m/s

Sealing

- ◆ **Standard:** Nitrile (NBR), operating temperature: -15 °C ~ +100 °C
- ◆ **Options:**
 - Fluorocarbon (FKM) (Code: SF), operating temperature: -10 °C ~ +150 °C
 - Polyurethane seal (PU) (Code: SP), operating temperature: -10 °C ~ +80 °C. In water-based fluid, this seal should be avoided.
 - Ethylene Propylene (EPDM) (Code: SE), operating temperature: -25 °C ~ +150 °C. No contacting with other fluids, especially mineral oils and greases etc.

Flow rate/pressure drop charts

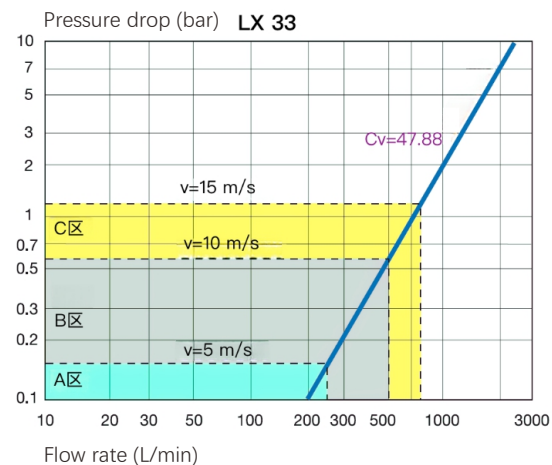
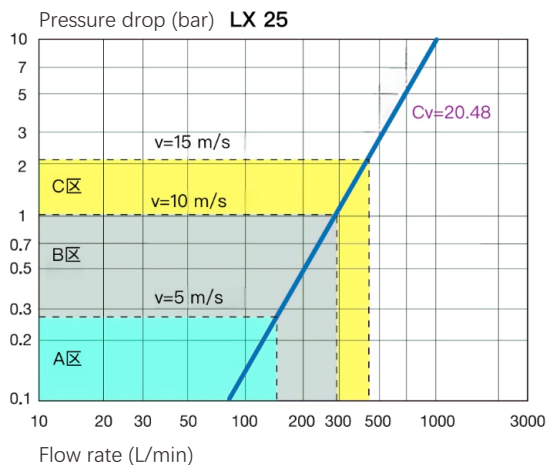
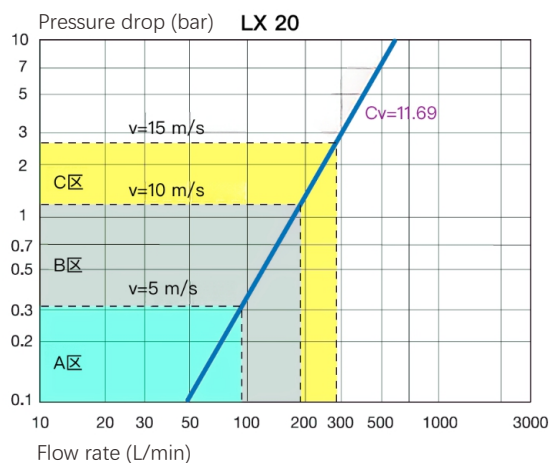
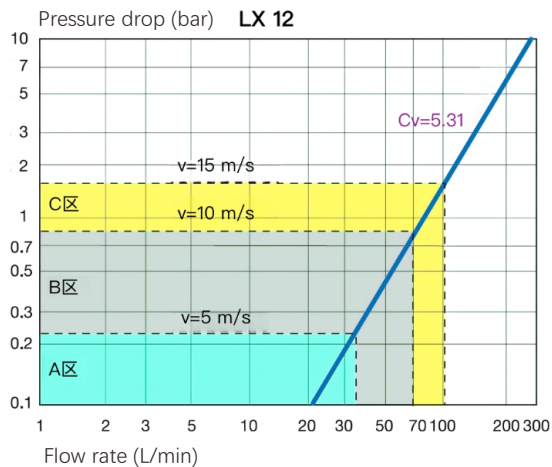
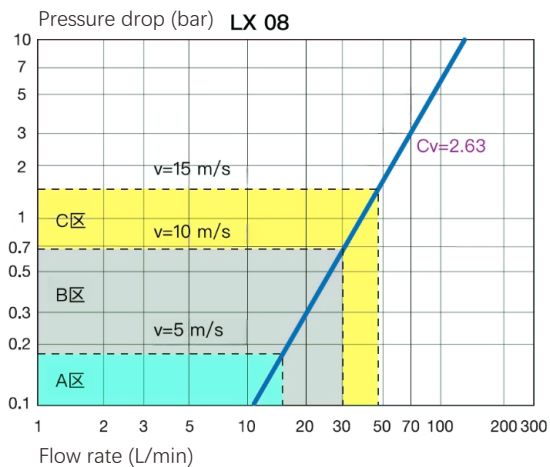
Zone A: All seals

Speed in m/s	Flow in L/min				
	LX 08	LX 12	LX 20	LX 25	LX 33
5	15	34	94	147	256.5
10	30	68	188	294	513
15	45	102	282	441	770

Zone B: Nitrile, Fluorocarbon (FKM) and Polyurethane seals (PU), temperature ≤ 60 °C

Zone C: Polyurethane seals (PU), temperature ≤ 60 °C, no water-based fluid.

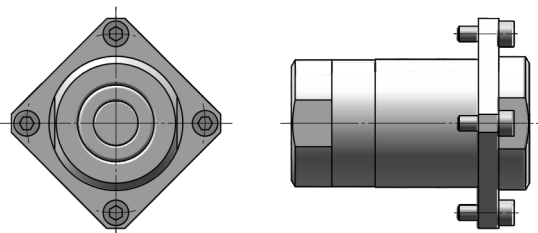
Test conditions: - Fluid: water at 20 °C
- Flow direction: socket → plug



LX Type High Pressure Fluid Connector

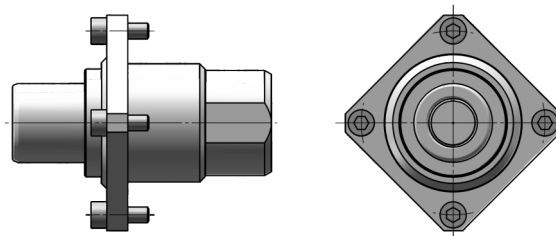
LX / A0 Part-numbers

Sockets for plates



Model	Female thread(F)	Part-numbers
LX 08	G 1/2	LX08SFG3-A0
	NPT 1/2	LX08SFN3-A0
	UN 3/4"-16	LX08SFU5-A0
LX 12	G 3/4	LX08SFG4-A0
	NPT 3/4	LX08SFN4-A0
	UN 1 1/16"-12	LX08SFU6-A0
LX 20	G 1	LX08SFG5-A0
	NPT 1	LX08SFN5-A0
	UN 1 5/16"-12	LX08SFU7-A0
LX 25	G 1 1/4	LX08SFG6-A0
	NPT 1 1/4	LX08SFN6-A0
	UN 1 5/8"-12	LX08SFU8-A0
LX 33	G 1 1/2	LX08SFG7-A0
	UN 1 7/8"-12	LX08SFU9-A0

Plugs for plates



Model	Female thread(F)	Part-numbers
LX 08	G 1/2	LX08PFG3-A0
	NPT 1/2	LX08PFN3-A0
	UN 3/4"-16	LX08PFU5-A0
LX 12	G 3/4	LX08PFG4-A0
	NPT 3/4	LX08PFN4-A0
	UN 1 1/16"-12	LX08PFU6-A0
LX 20	G 1	LX08PFG5-A0
	NPT 1	LX08PFN5-A0
	UN 1 5/16"-12	LX08PFU7-A0
LX 25	G 1 1/4	LX08PFG6-A0
	NPT 1 1/4	LX08PFN6-A0
	UN 1 5/8"-12	LX08PFU8-A0
LX 33	G 1 1/2	LX08PFG7-A0
	UN 1 7/8"-12	LX08PFU9-A0

Technical advice

Fitting of sockets and plugs with flexible hoses.

⚠ Attention:

- ◆ Check freedom of the socket/plug motion on plate after assembly of the flange.
- ◆ Prevent any constraint from flexible hose onto socket/plug. This would cancel any motion freedom.

Tighten the screw to advised torque.

Screw clamping torque (N·m), +/- 15%				
LX 08	LX 12	LX 20	LX 25	LX 33
12.5	12.5	28.8	28.8	28.8

GM Type

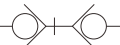
Modular connectors:

- ◆ Gradually guiding
- ◆ Application: all gases connections
- ◆ Nominal diameter: $\varnothing 3$ 、 $\varnothing 6$ 、 $\varnothing 9$ 、 $\varnothing 12$ 、 $\varnothing 18$ mm
- ◆ Single shut-off, double shut-off, unvalved



Technical data

		GM 03	GM 06	GM 09	GM 12	GM 18
Nominal bore DN (mm)						
Single shut-off or unvalved		3	5.5	9	12	18
Double shut-off		2.5	4.6	8.2	11.2	17
Max. working pressure	Standard (bar) version	50	50	50	50	50
	PA (bar) version	50	50	50	50	50
	AH (bar) version	400	450	400	350	300
	AW (torr) version	10^{-3}	10^{-3}	10^{-3}	10^{-3}	10^{-3}
Connection force without pressure (N)	Single shut-off	26	39	61	85	160
	Double shut-off	28	60	74	84	155
	Unvalved	11	13	23	33	47
Socket/plug repulsion cross section(cm^2)		0.196	0.44	1.08	1.84	3.79
Loss of fluid (water) for one disconnection under pressure 3 bar (cm^3)		0.10	0.63	2.31	4.93	14.3
Air intake (V/V type) cm^3)		0.08	0.3	0.81	1.64	4.93

Shut-off: single  Double  Unvalved 

GM Type Gas or Fluid Connectors

Construction

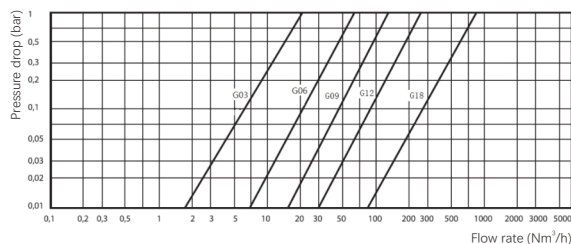
- ◆ **Standard version:** stainless steel

Sealing

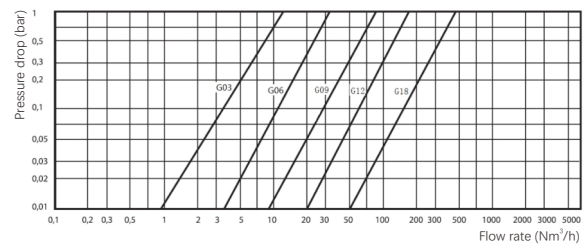
- ◆ **Standard:** Nitrile seals (NBR), operating temperature: -15 °C ~ +100 °C
- ◆ **Options:** Fluorocarbon(FKM) (code: SF), operating temperature: -10 °C ~ +200 °C
Ethylene Propylene (EPDM) (code: SE), operating temperature: -20 °C ~ +150 °C

Pneumatic flow /pressure drop charts

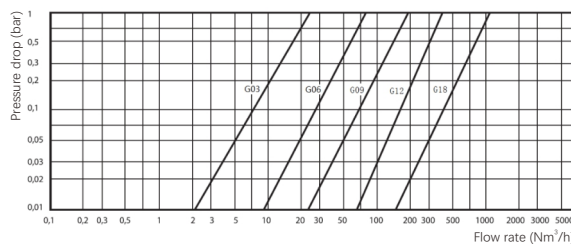
	GM 03	GM 06	GM 09	GM 12	GM 18
Pressure drop: 0.3 bar, pressure: 6 bar, pneumatic flow rate: (Nm ³ /h)					
Single shut-off	11.2	32	94	182	395
Double shut-off	6.2	19	59	111	228
Unvalved	13	45	150	298	616



Single shut-off



Double shut-off



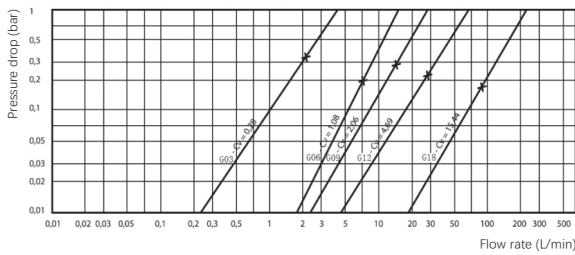
Unvalved

Test conditions

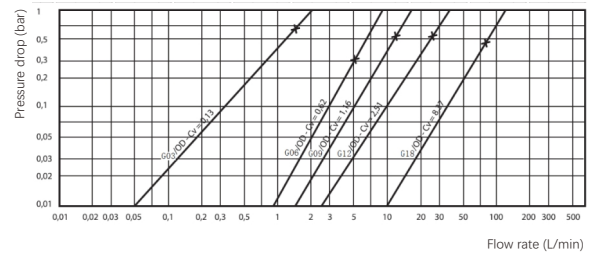
Direction of flow: socket→plug, inlet pressure: 6 bar

Fluid flow/pressure drop charts

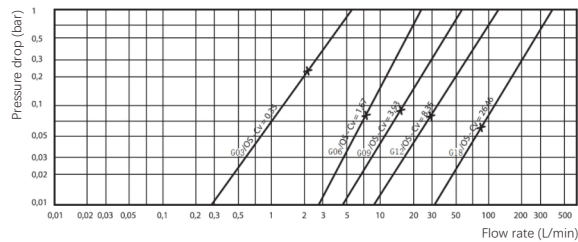
	GM 03	GM 06	GM 09	GM 12	GM 18
Flow (l/min) for a speed of 5 m/s					
Single shut-off	2.1	7.2	18.7	34.4	76.8
Double shut-off	1.5	5	15.4	30.0	69.1
Unvalved	2.1	7.2	18.7	34.4	76.8



Single shut-off



Double shut-off



Unvalved

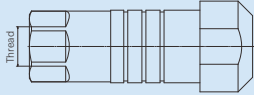
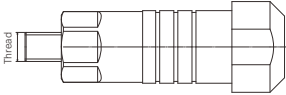
Test conditions

- ◆ **Direction of flow:** plug→socket, flow rate: $v=5$ m/s, test fluid: water
- ◆ **GM 03 test fluid:** hydraulic oil, INVAROL Fj13 (H515) at 40 °C
(density: 833 kg/m³ viscosity: 13.4 cSt, temperature: 40 °C)

GM Type Gas or Fluid Connectors

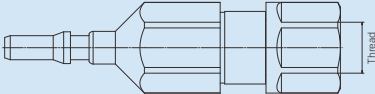
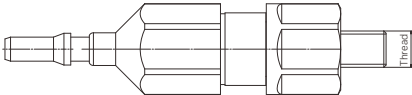
Part-numbers ◆ GM 03 type

Sockets with single shut-off

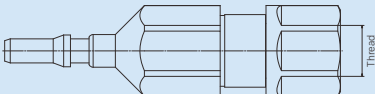
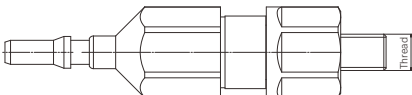
Product name	Nominal diameter	End connection	Part number*
Socket with female thread 	3	G1/8	GM03SFG0
Socket with male thread 	3	G1/8	GM03SMG0

* If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Unvalved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	3	G1/8	GM03PFG0
Plug with male thread 	3	G1/8	GM03PMG0

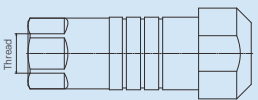
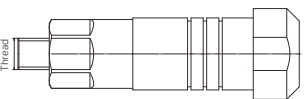
Valved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	3	G1/8	GM03DFG0
Plug with male thread 	3	G1/8	GM03DMG0

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

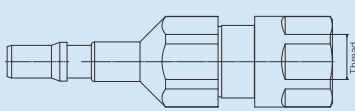
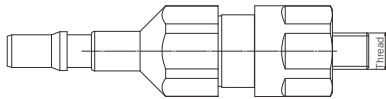
Part-numbers ◆ GM 06 type

Sockets with single shut-off

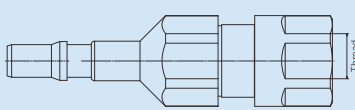
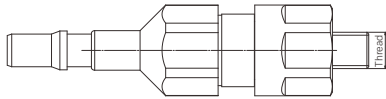
Product name	Nominal diameter	End connection	Part number*
Socket with female thread 	6	G1/4	GM06SFG1
		G3/8	GM06SFG2
Socket with male thread 	6	G1/4	GM06SMG1
		G3/8	GM06SMG2

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Unvalved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	6	G1/4	GM06PFG1
		G3/8	GM06PFG2
Plug with male thread 	6	G1/4	GM06PMG1
		G3/8	GM06PMG2

Valved plugs

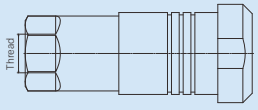
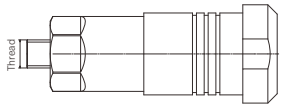
Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	6	G1/4	GM06DFG1
		G3/8	GM06DFG2
Plug with male thread 	6	G1/4	GM06DMG1
		G3/8	GM06DMG2

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

GM Type Gas or Fluid Connectors

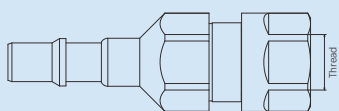
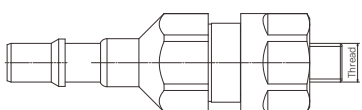
Part-numbers ◆ GM 09 type

Sockets with single shut-off

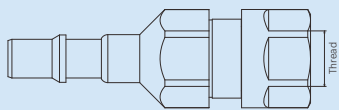
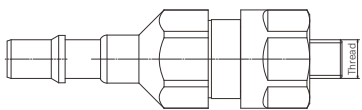
Product name	Nominal diameter	End connection	Part number*
Socket with female thread 	9	G1/4	GM09SFG1
		G3/8	GM09SFG2
		G1/2	GM09SFG3
Socket with male thread 	9	G1/4	GM09SMG1
		G3/8	GM09SMG2
		G1/2	GM09SMG3

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Unvalved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	9	G1/4	GM09PFG1
		G3/8	GM09PFG2
		G1/2	GM09PFG3
Plug with male thread 	9	G1/4	GM09PMG1
		G3/8	GM09PMG2
		G1/2	GM09PMG3

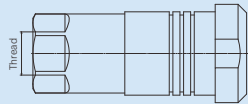
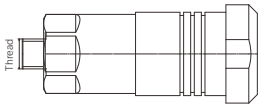
Valved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	9	G1/4	GM09DFG1
		G3/8	GM09DFG2
		G1/2	GM09DFG3
Plug with male thread 	9	G1/4	GM09DMG1
		G3/8	GM09DMG2
		G1/2	GM09DMG3

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

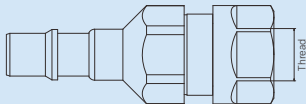
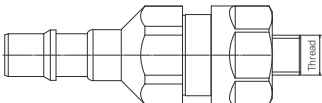
Part-numbers ◆ GM 12 type

Sockets with single shut-off

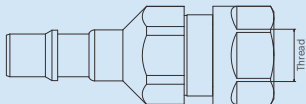
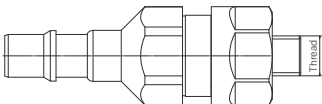
Product name	Nominal diameter	End connection	Part number*
Socket with female thread 	12	G3/8	GM12SFG2
		G1/2	GM12SFG3
		G3/4	GM12SFG4
Socket with male thread 	12	G3/8	GM12SMG2
		G1/2	GM12SMG3
		G3/4	GM12SMG4

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Unvalved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	12	G3/8	GM12PFG2
		G1/2	GM12PFG3
		G3/4	GM12PFG4
Plug with male thread 	12	G3/8	GM12PMG2
		G1/2	GM12PMG3
		G3/4	GM12PMG4

Valved plugs

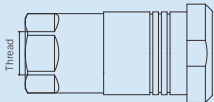
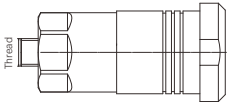
Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	12	G3/8	GM12DFG2
		G1/2	GM12DFG3
		G3/4	GM12DFG4
Plug with male thread 	12	G3/8	GM12DMG2
		G1/2	GM12DMG3
		G3/4	GM12DMG4

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

GM Type Gas or Fluid Connectors

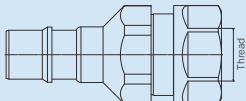
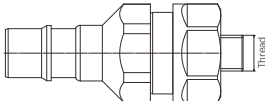
Part-numbers ◆ GM 18 type

Sockets with single shut-off

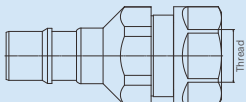
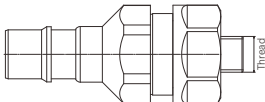
Product name	Nominal diameter	End connection	Part number*
Socket with female thread 	18	G3/4	GM18UFG4
		G1	GM18UFG5
Socket with male thread 	18	G3/4	GM18UMG4
		G1	GM18UMG5

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Unvalved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	18	G3/4	GM18PFG4
		G1	GM18PFG5
Plug with male thread 	18	G3/4	GM18PMG4
		G1	GM18PMG5

Valved plugs

Product name	Nominal diameter	End connection	Part number*
Plug with female thread 	18	G3/4	GM18DFG4
		G1	GM18DFG5
Plug with male thread 	18	G3/4	GM18DMG4
		G1	GM18DMG5

*If Type PA, AH or AW are needed, please add "-PA", "-AH" or "-AW" at the end of the part numbers, eg, GM03SFG0-AW.

Technical advice

- ◆ Fitting of sockets and plugs with flexible hoses.
- ◆ Please refer to below table for tightening torque:

Back adapter clamping torque in N.m at +/- 15%				
GM 03	GM 06	GM 09	GM 12	GM 18
12	35	57	76	99

Filtration of the circuit

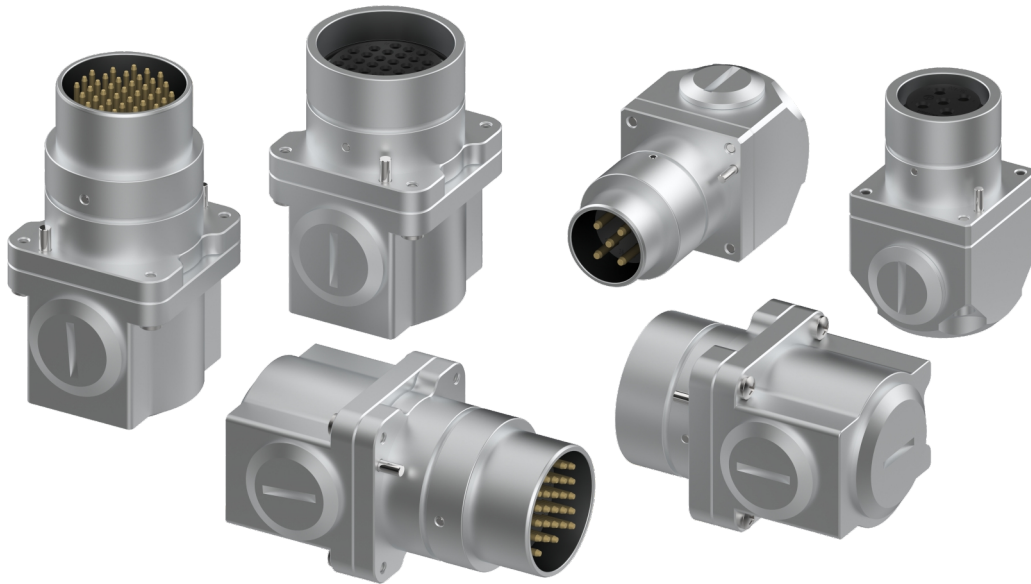


- ◆ Recommended grade of filtration: 200 μm

Lubrication

Lubricating frequency: every 30,000 manoeuvres or 6 months

EA Type



- ◆ **Application:** Data circuits, control circuits and measurement sensors
- ◆ **Features:** Safety: No risk for misconnection. Free from dust and fluid spraying.
Reliability: All pins with silver plated; Mating cycles up to 100,000 as maximum; 4 directions for cable entries with user friendly design.
- ◆ **Product:** Diameter of standard pins: 1.0 mm to 3 mm, Maximum voltage: 400 V, Maximum current: 36 A.

Material

Housing: Aluminium

Contact: Glass reinforced polyester (GRP)

Pin: Copper alloy

Termination: Soldering or crimp termination

Norm

According to NFC 20.010 - CEI 529, protection degree of housing: IP 67

Technical characteristics

Housings: Modular designs enable multiple connections.

- Back adapter on each model with 4 possible directions.
- Housing: aluminium, compound materials as option
- Sealing by O-ring
- Back adapter fixed by 4 screws
- Grounding screws included

Features of contact carrier:

- Insulated pin carrier
 - Nitrile (NBR) in black
 - Silicon as option
- Pin numbers: 15–37 pcs depending on model

Temperature range of contact carrier:

- Nitrile: - 20 °C to + 100 °C
- Silicon: - 10 °C to + 180 °C

Temperature range of seals:

- Nitrile seals(NBR): - 10 °C to + 100 °C
- Fluorocarbon seals(FKM) : - 10 °C to + 200 °C

Features of crimp termination:

- Excellent property in temperature & shock resistance
- Soldering as option
- CuZn alloy with silver plated as standard version
- Pins with gold plated as option

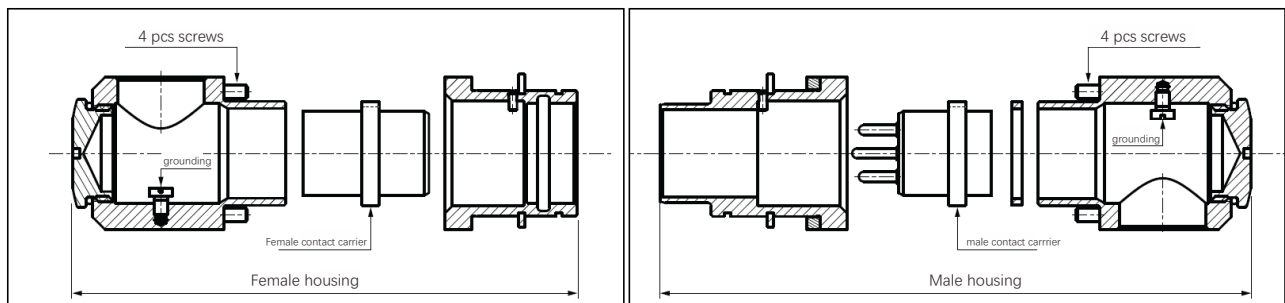
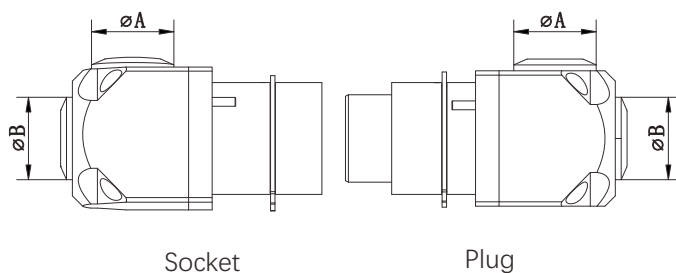


Illustration of E type electrical connector

Part-numbers

◆ Type EA 02 part-numbers



EA Type Electrical Connectors

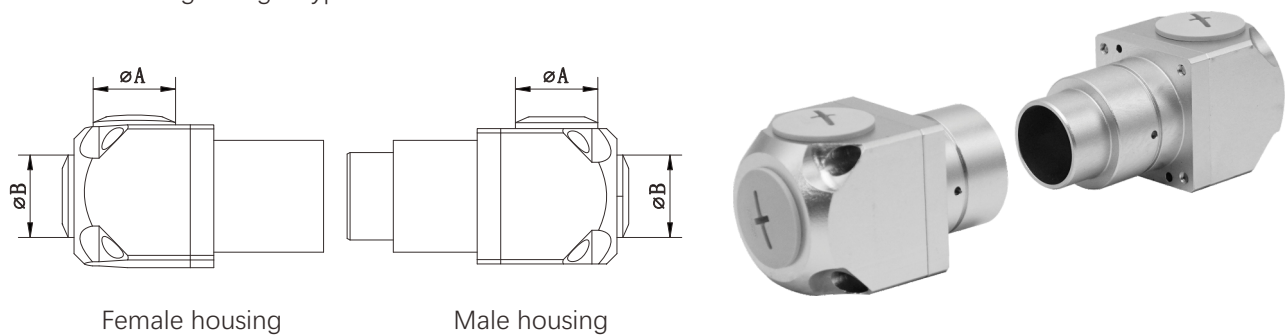
Pins			Sockets		Plugs	
Diameter(mm)	Qty	Material	Plate thickness (mm)	Part-numbers	Plate thickness (mm)	Part-numbers
1.5	5	Gold plated	20	EA02S-15051 ^{1 2}	20	EA02P-150511
	7			EA02S-150711		EA02P-150711
	16			EA02S-151611		EA02P-151611
2	5			EA02S-200511		EA02P-200511
	7			EA02S-200711		EA02P-200711
	16			EA02S-201611		EA02P-201611
2.5	5			EA02S-250511		EA02P-250511
	7			EA02S-250711		EA02P-250711
3	5			EA02S-300511		EA02P-300511
	7			EA02S-300711		EA02P-300711

Notes: Superscript 1: Digital (1) means pins in gold plated (1). Copper (0) and silver plated (2) as option to be replaced.

Superscript 2: Digital 1 means 20mm plate thickness. 10 mm (3) or 15 mm (2) as option to be replaced.

Type code example EA02S-150522, pins in silver plating (2), 15mm (2) as plate thickness.

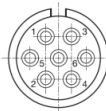
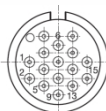
● EA 02 Housing-straight type or 90° outlet



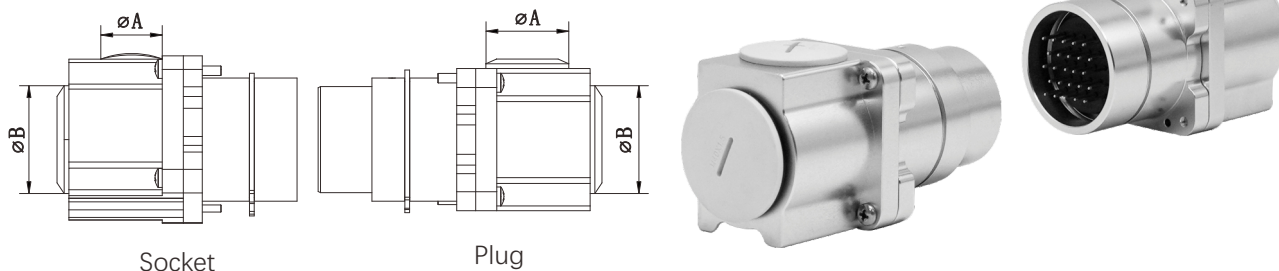
Connection end			Female housing (without contact carrier)	Male housing (without contact carrier)
ΦA^1	ϕB^1	Plate thickness (mm)	Part-numbers	Part-numbers
M25×1.5	M25×1.5	10	EA02-SH03	EA02-PH03
		15	EA02-SH02	EA02-PH02
		20	EA02-SH01	EA02-PH01

Note: 1. ϕA and ϕB : dust cap in metal

● EA 02 Housing Contact Carrier

Contact carrier	Number of pins	Male or female pins Ø(mm)	Working current of each pin(A)	Voltage (V)	Cable cross section(mm ²)	Part-numbers	
						Female contact carrier	Male contact carrier
	5 (4 pins+ grounding wire)	1.5	16	250	0.5-1.5	EA02-SC1505	EA02-PC1505
		2	16	250	0.5-1.5	EA02-SC2005	EA02-PC2005
		2.5	36	400	2.5 - 4	EA02-SC2505	EA02-PC2505
		3	36	400	2.5 - 4	EA02-SC3005	EA02-PC3005
	7 (6 pins+ grounding wire)	1.5	16	250	0.5-1.5	EA02-SC1507	EA02-PC1507
		2	16	250	1.5-2.5	EA02-SC2007	EA02-PC2007
		2.5	36	400	2.5 - 4	EA02-SC2507	EA02-PC2507
		3	36	400	2.5 - 4	EA02-SC3007	EA02-PC3007
	16 (15 pins+ grounding wire)	1.5	16	250	0.5-1.5	EA02-SC1516	EA02-PC1516
		2	16	250	1.5-2.5	EA02-SC2016	EA02-PC2016

◆ Type EA 03 part numbers



Pins			Sockets		Plugs	
Diameter(mm)	Qty	Material	Plate thickness(mm)	Part-numbers	Plate thickness(mm)	Part-numbers
1.5	15	Gold plated	20	EA03S-15151 ¹ 1 ²	20	EA03P-151511
	25			EA03S-152511		EA03P-152511
	37			EA03S-153711		EA03P-153711
2	15			EA03S-201511		EA03P-201511
	25			EA03S-202511		EA03P-202511
	37			EA03S-203711		EA03P-203711
2.5	15			EA03S-251511		EA03P-251511
	25			EA03S-252511		EA03P-252511

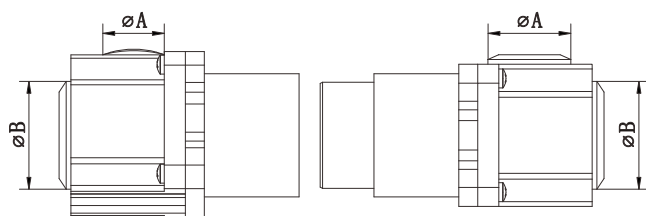
Notes: Superscript 1: Digital (1) means pins in gold plated (1). Copper (0) and silver plated (2) as option to be replaced.

Superscript 2: Digital 1 means 20mm plate thickness. 10 mm (3) or 15 mm (2) as option to be replaced.

Type code example EA03S-151522, pins in silver plating (2), 15mm (2) as plate thickness.

EA Type Electrical Connectors

- EA 03 housing straight type or 90° cable outlet



Female housing

Male housing



Connection end		Plate thickness (mm)	Female housing (without contact carrier)	Male housing (without contact carrier)
ΦA^1	ϕB^1		Part-numbers	Part-numbers
M40×1.5	M32×1.5	10	EA03-SH03	EA03-PH03
		15	EA03-SH02	EA03-PH02
		20	EA03-SH01	EA03-PH01

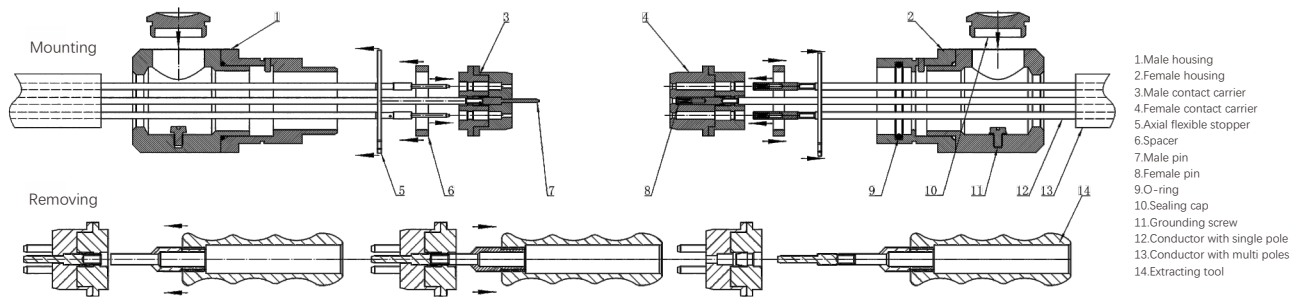
Note: 1. M40 and M32 with dust cap in metal

- EA 03 Housing Contacts

Contact carrier	Number of pins	Male or female pins Ø(mm)	Working current of each pin(A)	Voltage (V)	Cable cross section(mm²)	Part-numbers	
						Female contact carrier	Male contact carrier
	15 (14 pins+ grounding wire)	1.5	16	250	0.5–1.5	EA03-SC1515	EA03-PC1515
		2	16	250	1.5–2.5	EA03-SC2015	EA03-PC2015
		2.5	30	400	2.5–4	EA03-SC2515	EA03-PC2515
	25 (24 pins+ grounding wire)	1.5	16	250	0.5–1.5	EA03-SC1525	EA03-PC1525
		2	16	250	1.5–2.5	EA03-SC2025	EA03-PC2025
		2.5	30	400	2.5–4	EA03-SC2525	EA03-PC2525
	37 (36 pins+ grounding wire)	1.5	16	250	0.5–1.5	EA03-SC1537	EA03-PC1537
		2	16	250	1.5–2.5	EA03-SC2037	EA03-PC2037

Spare parts of pins (For spare parts of pins see Page 31)

Assembly principle of electrical connectors



Inserting crimped pins into contact carriers

Placing cable through cable box, back adapter of housing (straight type or 90°) and spacer (male housing)

- Inserting pins (male or female one) manually into contact carriers respectively. Positioning pins from back side;
- Positioning numbers of pins from center row by row for contact carrier with multi poles;
- Inserting pins wholly with proper assembly tool;
- While inserting, pushing rear bead of pin with assembly tool;
- While assembly or removal, positioning pins to correct locations and assembly tool be in line with axis of pin holes.

Assembly advices

- For male end: Inserting front section of male contact carrier into front section of male housing.
- For female end: Putting female contact carrier on the flat surface. Whenever errors happens while assembly or repair, extracting and replacing pins with proper tools.

Assembly inspection

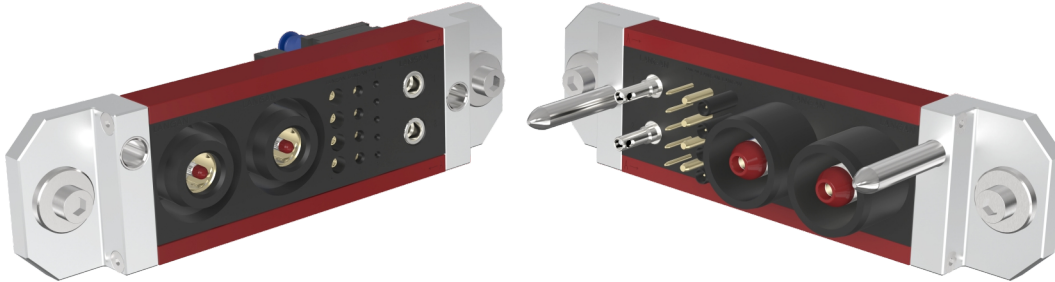
- All pins reach out of pins carrier, and female pins carrier with the same value except for the grounding pins go out 2mm.
- For pins with wrong position (male or female end) must be repositioned with suitable tools.

Important

- Closing the empty contact chambers with blind plugs;
- Free from lubrication in female end;
- While assembling contact carriers and housing, inserting contacts carriers into front section of housing and ensuring the bead positioning into groove correctly;
- Screwing back adaptor (90° 4 possible directions) and plug;
- While tightening cable glands, straining is not allowed;
- Covering empty screws with cap, connectors in prepared mounting panels;
- We reserve the right to change our products and their technical specifications without prior notice.

EM Type Modular Connectors System

EM Type



Modular design of EM Type allows you to integrate into one connector for the connections of high current, coaxial cable, compressed air, high speed data and fiber optic. It is widely used in mechanical engineering, railway vehicles, rail transport, power supply, laboratory test, medical and other industrial sectors.

Our products gain good reputation from customers thanks to cost effective, high-performance & fitting for limited access.

- ◆ **Application:** mechanical engineering, railway vehicles, rail transportation, power supply, laboratory test, medical sector.
- ◆ **Features:** Signal transmission , power, high current, coaxial cable, compressed air, high speed data transmission and fiber optic.
High reliability: Silver/gold surface up to 100,000 mating cycles.
Compact solution possibilities: Using 3mm as measurement unit
Easy assembly: Inserting crimped pins into contact carrier through clamp. Removing pins from mating side.
- ◆ **Type:** Diameter of standard pins: 1.0 mm to 20 mm, Maximum voltage: 1000 V , Maximum current: 600 A

Contact Carrier for Electrical Connector

Material

- ◆ **Contact carrier:** Glass reinforced polyester, PET, POM as option
- ◆ **Pins:** CuZn alloy with silver plated as standard, gold plated as option
- ◆ **Installation:** soldering, crimp and screw termination

Norms

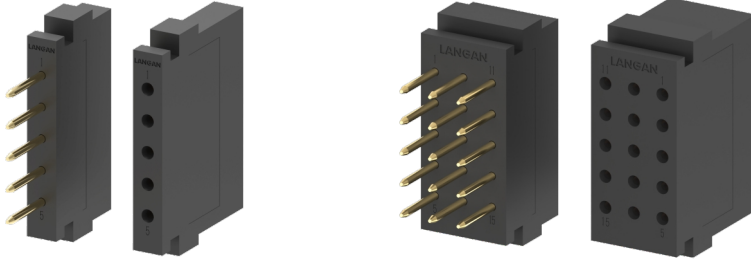
According to VDE 0298-4: 2013, application of actual current capacity

Technical data

- **Temperature range of pin carriers:**
Glass reinforced polyester: - 30 °C to + 200 °C
PET: - 70 °C to + 160 °C
POM: - 40 °C to + 100 °C
- **Pins with crimped termination:**
 - Reliable temperature and vibration resistance
 - Soldering allowed.

Part-Numbers of Contact Carriers

● Contact carrier-signal unit



Contact carrier	No. of pins	Male/female pins Ø(mm)	Working current of each pin(A)	Voltage (V)	Cable cross section (mm²)	Part-numbers	
						Female contact carrier	Male contact carrier
	4	2.5	30	400	2.5 - 4	EME-S10-02504	EME-P10-02504
		3	36	400	2.5 - 4	EME-S10-03004	EME-P10-03004
	5	1.5	16	250	0.5-1.5	EME-S10-01505	EME-P10-01505
		2	16	250	1.5-2.5	EME-S10-02005	EME-P10-02005
	12	2.5	30	400	2.5 - 4	EME-S10-02512	EME-P10-02512
		3	36	400	2.5 - 4	EME-S10-03015	EME-P10-03015
	15	1.5	16	250	0.5-1.5	EME-S10-01515	EME-P10-01515
		2	16	250	1.5-2.5	EME-S10-02015	EME-P10-02015
	20	2.5	30	400	2.5 - 4	EME-S10-02520	EME-P10-02520
		3	36	400	2.5 - 4	EME-S10-03020	EME-P10-03020
	25	1.5	16	250	0.5-1.5	EME-S10-01525	EME-P10-01525
		2	16	250	1.5-2.5	EME-S10-02025	EME-P10-02025
	28	2.5	30	400	2.5 - 4	EME-S10-02528	EME-P10-02528
		3	36	400	2.5 - 4	EME-S10-03028	EME-P10-03028
	35	1.5	16	250	0.5-1.5	EME-S10-01535	EME-P10-01535
		2	16	250	1.5-2.5	EME-S10-02035	EME-P10-02035

EM Type Modular Connectors System

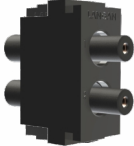
● Contact carrier-power unit

Contact carrier	No. of pins	Male/female pins Ø (mm)	Working current of each pin (A)	Mating cycles	Part-numbers	
					Female contact carrier	Male contact carrier
	2	4	55	100000	EME-S10-04002	EME-P10-04002
	2	5	75	100000	EME-S10-05002	EME-P10-05002
	2	6	100	100000	EME-S10-06002	EME-P10-06002

● Contact carrier-High current unit

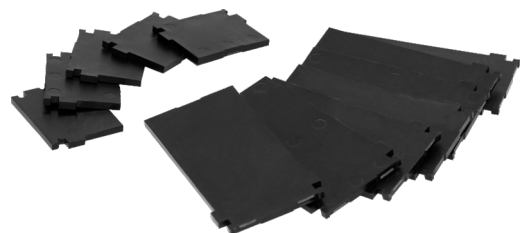
Contact carrier	No. of pins	Male/female pins Ø (mm)	Working current of each pin (A)	Mating cycles	Part-numbers	
					Female contact carrier	Male contact carrier
	1	8	140	100000	EME-S10-08001	EME-P10-08001
	1	10	175	100000	EME-S10-10001	EME-P10-10001
	1	12	230	100000	EME-S1S-12001	EME-P1S-12001
	1	16	360	100000	EME-S1S-16001	EME-P1S-16001
	1	20	480	100000	EME-S1S-20001	EME-P1S-20001

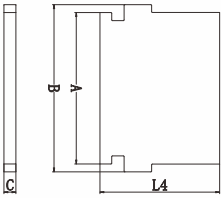
● Contact carrier-High voltage unit

Contact carrier	No. of pins	Male pin Ø (mm)	Pollution degree	Rated voltage between phases	Test voltage between phases, root mean square value per 1 min 50/60 Hz	Mating cycles	Part-numbers	
							Female contact carrier	Male contact carrier
	2	3	CAT II	5 kV	13.7 kV	100000	EME-S10-03002HV	EME-P10-03002HV
	4	1.5	CAT II	2.5 kV	6.6 kV	100000	EME-S10-01504HV	EME-P10-01504HV

● Spacers

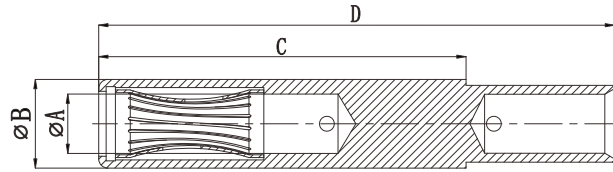
- ◆ To fill gaps in the aluminium frames
- ◆ Aluminum frames fully filled with insulators and spacers.
- ◆ Preventing current flow in the aluminium frames
- ◆ Material: Glass reinforced polyester



Outline	Types	A (mm)	B (mm)	C (mm)	L4 (mm)	Part-numbers
	Standard version	37.95	41.9	3	30	EME-011
	Longer version for L4	37.95	41.9	3	75	EME-012
	Higher version for A	43.95	47.9	3	50	EME-021
	Bigger version for L4 and A	43.95	47.9	3	75	EME-022

● Spare parts

1~3 Female pins (Outline)



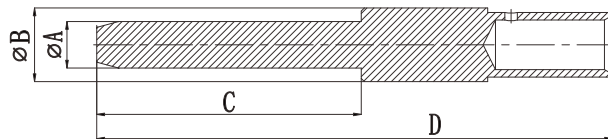
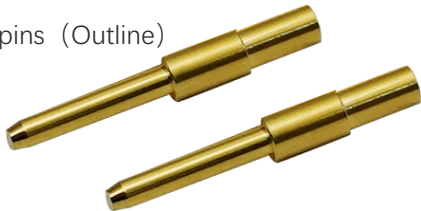
Dimension					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
1	2.6	17.8	24.8	0.5	Crimp/Soldering 0.5 ² termination	2	1.5	10	2500	ES10S-0101 ¹
1.5	3.28	19.8	27.8	1.5	Crimp/Soldering 1.5 termination	5	3	16	1400	ES10S-0151
2	3.78	19.8	27.8	2.5	Crimp/Soldering 2.5 termination	6	4	16	850	ES10S-0201
2.5	4.28	19.8	27.8	4	Crimp/Soldering 4 termination	8	5	30	750	ES10S-0251
3	4.78	19.8	27.8	4	Crimp/Soldering 4 termination	10	7	36	650	ES10S-0301

Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (1) means pins in gold plated, Cu (0) or silver plated (2) as option to be replaced. Type code example ES10S-0102 (silver plated)

Superscript 2: Digital 2 means cable specification as maximum: 0.5 mm².

1~3 Male pins (Outline)



Dimension					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
1	2.45	21.15	26	0.5	Crimp/Soldering 0.5 ² termination	2	1.5	10	2500	EP00S-0101 ¹
1.5	3.22	25.05	33.05	1.5	Crimp/Soldering 1.5 termination	5	3	16	1400	EP00S-0151
2	3.72	25.05	33.05	2.5	Crimp/Soldering 2.5 termination	6	4	16	850	EP00S-0201
2.5	4.22	25.05	33.05	4	Crimp/Soldering 4 termination	8	5	30	750	EP00S-0251
3	4.72	25.05	33.05	4	Crimp/Soldering 4 termination	10	7	36	650	EP00S-0301

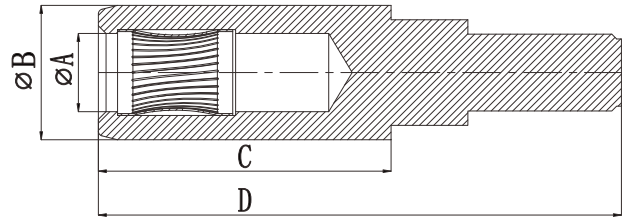
Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (1) means pins in gold plated, Cu (0) or silver plated (2) as option to be replaced. Type code example ES10S-0102 (silver plated)

Superscript 2: Digital 2 means cable specification as maximum: 0.5 mm².

EM Type Modular Connectors System

4~10 Female pins (Outline)



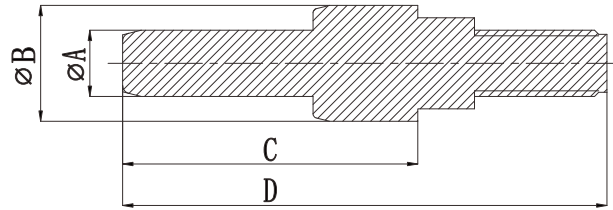
Dimension					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
4	8	19.5	41.5	6	Male thread/M5	15	10	55	240	ES1UM-04021
5	9	19.5	41.5	10	Male thread/M5	18	12	75	200	ES1UM-0502
6	11	30.5	55.5	16	Male thread/M6	20	13	100	180	ES1UM-0602
8	14	30.5	47	25	Female thread/M8	25	15	140	150	ES1UF-0802
8	14	30.5	54.5	35	Male thread/M8	25	15	175	150	ES1UM-0802
8	14	30.5	58	25	Crimp termination/25 ²	25	15	140	150	ES1U1-0802
8	14	30.5	58	35	Crimp termination/35	25	15	175	150	ES1U2-0802
10	16	30.5	47	35	Female thread/M8	30	20	185	130	ES1UF-1002
10	16	30.5	56.5	50	Male thread/M10	30	20	215	130	ES1UM-1002
10	16	30.5	56	35	Crimp termination/35	30	20	185	130	ES1U1-1002
10	16	30.5	56	50	Crimp termination/50	30	20	215	130	ES1U2-1002

Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (2) means pins in silver plated, Cu (0) or gold plated (1) as option to be replaced. Type code example ES1UM-0401 (gold plated)

Superscript 2: Digital 2 means cable specification as maximum: 25 mm².

4~10 Male pins (Outline)



Dimension					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
4	8	28.1	48.5	6	Male thread/M5	15	10	55	240	EP00M-04021
5	8	27.1	48	10	Male thread/M5	18	12	75	200	EP00M-0502
6	8	33.2	56	16	Male thread/M6	20	13	100	180	EP00M-0602
8	14	35.7	50	25	Female thread/M8	25	15	140	150	EP00F-0802
8	14	35.65	58.5	35	Male thread/M8	25	15	175	150	EP00M-0802
8	14	35.65	60	25	Crimp termination/25 ²	25	15	140	150	EP001-0802
8	14	35.65	60	35	Crimp termination/35	25	15	175	150	EP002-0802
10	16	35.65	47	35	Female thread/M8	30	20	185	130	EP00F-1002
10	16	35.65	60.5	50	Male thread/M10	30	20	215	130	EP00M-1002
10	16	35.65	56	35	Crimp termination/35	30	20	185	130	EP001-1002
10	16	35.65	56	50	Crimp termination/50	30	20	215	130	EP002-1002

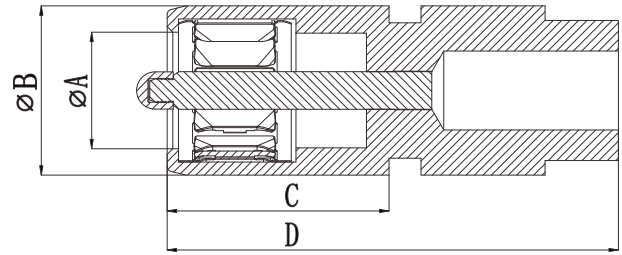
Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (2) means pins in silver plated, Cu (0) or gold plated (1) as option to be replaced. Type code example ES1UM-0401 (gold plated)

Superscript 2: Digital 2 means cable specification as maximum: 25 mm².

EM Type Modular Connectors System

12~20 Female pins (Outline)



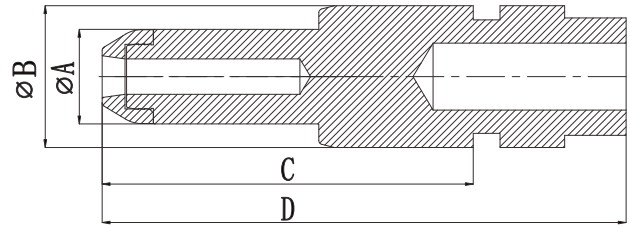
Dimension					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
12	18	23.6	48	70 95	Female thread /M10	25	15	230 285	95	ES1SF-12021
12	18	23.6	62		Male thread /M12X1.5	25	15		95	ES1SM-1202
12	18	30.6	59	70	Crimp termination /70 ²	25	15	230	95	ES1S1-1202
12	18	30.6	60	95	Crimp termination /95	25	15	285	95	ES1S2-1202
14	20.6	29.2	53	95	Female thread /M12X1.5	30	20	315	85	ES1SF-1402
14	20.6	29.2	65	95	Male thread /M12X1.5	30	20	315	85	ES1SM-1402
16	23	28	51	95	Female thread /M12X1.5	35	25	360	75	ES1SF-1602
16	23	28	63	95	Male thread /M12X1.5	35	25	360	75	ES1SM-1602
18	25	28.1	52	120	Female thread /M14X1.5	40	30	420	65	ES1SF-1802
20	27	42.6	75	150	Female thread /M14X1.5	45	35	480	50	ES1SF-2002

Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (2) means pins in silver plated, Cu (0) or gold plated (1) as option to be replaced. Type code example ES1SF-1201 (gold plated)

Superscript 2: Digital 2 means cable specification as maximum: 70 mm².

12~20 Male pins (Outline)



尺寸					Termination type	Electrical parameter				Part-numbers
ØA (mm)	ØB (mm)	C (mm)	D (mm)	Conductor cross section (mm ²)		Inserting force (N)	Withdrawal force (N)	Rated current (A)	Contact resistance (μΩ)	
12	18	23.6	48	70 95	Female thread /M10	25	15	230 285	95	EP0SF-12021
12	18	23.6	62		Male thread /M12X1.5	25	15		95	EP0SM-1202
12	18	30.6	59	70	Crimp termination /70 ²	25	15	230	95	EP0S1-1202
12	18	30.6	60	95	Crimp termination /95	25	15	285	95	EP0S2-1202
14	20.6	19.6	70	70	Female thread /M12X1.5	30	20	315	85	EP0SF-1402
14	20.6	19.6	85.8	95	Male thread /M12X1.5	30	20	315	85	EP0SM-1402
16	23	19.6	71.6	95	Female thread /M12X1.5	35	25	360	75	EP0SF-1602
16	23	19.6	87.5	95	Male thread /M12X1.5	35	25	360	75	EP0SM-1602
18	25	19.6	71.6	120	Female thread /M14X1.5	40	30	420	65	EP0SF-1802
20	27	29.6	90	150	Female thread /M14X1.5	45	35	480	50	EP0SF-2002

Lifetime of pin: up to 100,000 mating cycles. Available upon request for other electrical data, termination type and dimensions.

Notes: Superscript 1: Digital (2) means pins in silver plated, Cu (0) or gold plated (1) as option to be replaced. Type code example ES1SF-1201 (gold plated)

Superscript 2: Digital 2 means cable specification as maximum: 70 mm².

Contact Carrier of Gas Connector

Material

- ◆ **Air module:** Copper alloy
- ◆ **Seal:** Nitrile (NBR)

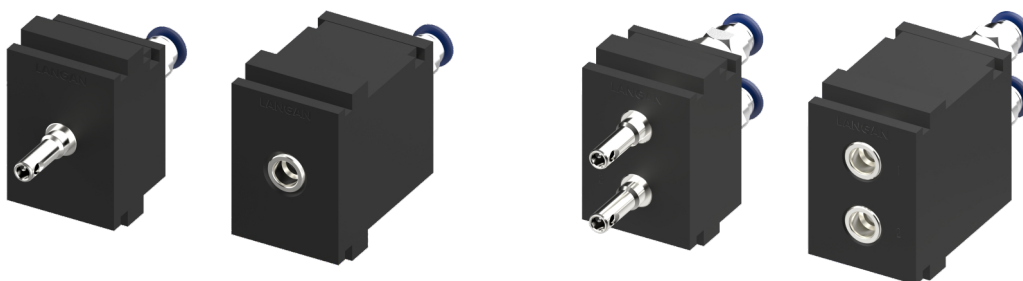
Technical data

- ◆ Modular design allows free assembly and configuration;
- ◆ Nominal diameter: 03, 04, 06, 08 mm;
- ◆ Single shut-off or unvalved;
- ◆ 10 types of plugs and 14 types of sockets as option;
- ◆ Maximum working pressure: 15 bar

		EMG 03	EMG 04	EMG 06	EMG 08
Nominal diameter(mm)		3	4	6	8
Connection force without pressure(N)	Single valve	20	13	27	17
Socket/pin repulsion cross section (cm ²)		0.2	0.4	0.5	0.8

Lubricating frequency: every 3,000 manoeuvres or every 6 months

EMG Module part-numbers



Qty of air couplings	Nominal diameter (mm)	Part number	Plug	Socket	Outer-Ø D of the tube (mm)	Shut-off
1	3	EMG-P03C04-081	●		4	Without
		EMG-S03C04-081		●	4	Without
		EMG-S03C04-081V		●	4	With

Components in Customized Solutions

Qty of air couplings	Nominal diameter (mm)	Part-numbers	Plug	Socket	Outer-Ø D of the tube (mm)	Shut-off
1	3	EMG-P03C06-081	●		6	Without
		EMG-S03C06-081		●	6	Without
		EMG-S03C06-081V		●	6	With
		EMG-P03P04-081	●		4	Without
		EMG-S03P04-081		●	4	Without
		EMG-S03P04-081V		●	4	With
		EMG-P03P06-081	●		6	Without
		EMG-S03P06-081		●	6	Without
		EMG-S03P06-081V		●	6	With
	4	EMG-P04C06-081	●		6	Without
		EMG-S04C06-081		●	6	Without
	6	EMG-P06C08-101	●		8	Without
		EMG-S06C08-101		●	8	Without
		EMG-S06C08-101V		●	8	With
		EMG-P06P08-101	●		8	Without
		EMG-S06P08-101V		●	8	With
	8	EMG-P06P10-101	●		10	Without
		EMG-S06P10-101V		●	10	With
	8	EMG-P08C10-101	●		10	Without
		EMG-S08C10-101		●	10	Without
2	3	EMG-P03C04-082	●		4	Without
		EMG-S03C04-082		●	4	Without
		EMG-S03C04-082V		●	4	With
		EMG-P03C06-082	●		6	Without
		EMG-S03C06-082		●	6	Without
		EMG-S03C06-082V		●	6	With
		EMG-P03P04-082	●		4	Without
		EMG-S03P04-082		●	4	Without
		EMG-S03P04-082V		●	4	With
		EMG-P03P06-082	●		6	Without
		EMG-S03P06-082		●	6	Without
		EMG-S03P06-082V		●	6	With
	4	EMG-P04C06-082	●		6	Without
		EMG-S04C06-082		●	6	Without

Note: Type code example EMG-P03C04-081, C : quick-release. If sleeve joint connection is needed, please replace C with P, eg. EMG-P03P04-081. For more information, see Spare Parts for Gas Connector on next page.

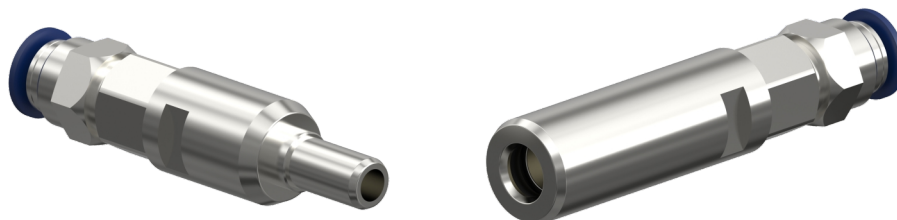
Spare parts for Gas Connector

EMG Plug Types

- Socket with or without shut-off by quick-release coupling
- EMG 03, 06
- Plug code: EMG-PXXCXX1 Socket code: EMG-SXXCXX1 / EMG-SXXCXX1V



- Socket without shut-off by quick-release coupling
- EMG 04, 08
- Plug code: EMG-PXXCXX1 Socket code: EMG-SXXCXX1



- Socket with or without shut-off by sleeve joint
- EMG 03, 06
- Plug code: EMG-PXXPXX1 Socket code: EMG-SXXPXX1 / EMG-SXXPXX1V



Nominal diameter (mm)	Part-numbers	Plug	Socket	Outer-Ø D of the tube (mm)	Shut-off
3	EMG-P03C041	●		4	Without
	EMG-S03C041		●	4	Without
	EMG-S03C041V		●	4	With
	EMG-P03C061	●		6	Without
	EMG-S03C061		●	6	Without
	EMG-S03C061V		●	6	With
	EMG-P03P041	●		4	Without
	EMG-S03P041		●	4	Without
	EMG-S03P041V		●	4	With
	EMG-P03P061	●		6	Without
	EMG-S03P061		●	6	Without
	EMG-S03P061V		●	6	With
4	EMG-P04C061	●		6	Without
	EMG-S04C061		●	6	Without
6	EMG-P06C081	●		8	Without
	EMG-S06C081		●	8	Without
	EMG-S06C081V		●	8	With
	EMG-P06P081	●		8	Without
	EMG-S06P081V		●	8	With
	EMG-P06P101	●		10	Without
8	EMG-S06P101V		●	10	With
	EMG-P08C101	●		10	Without
	EMG-S08C101		●	10	Without

Contact Carrier of Fluid Connector

- ◆ Application: Fluid test
- ◆ Product series: 3 nominal diameters: 03, 05, 06 mm
plug and socket with double shut-off construction
- ◆ Maximum operating pressure: 15 bar

Material

- ◆ Standard: Copper alloy
- ◆ Nitrile (NBR), working temperature: -15 °C ~ 90 °C
Options: Fluorocarbon (FKM) (code: SF), working temperature: -10 °C ~ +200 °C
Ethylene Propylene (EPDM) (code: SE), working temperature: -20 °C ~ +150 °C

Technical data

- ◆ Nominal diameter: 03, 05, 06 mm
- ◆ Double shut-off
- ◆ Working temperature: -15 °C ~ 90 °C
- ◆ Maximum operating pressure: 15 bar

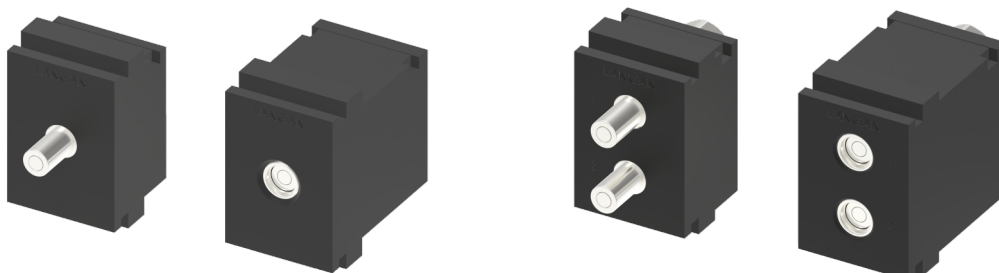
	EML 03	EM L05	EML 06
Nominal diameter(mm)	3	5	6
Connection force without pressure(N)*	43	60	100
Material of seal*	NBR		
Lubricating frequency: every 3,000 manoeuvres or every 6 months			

* Technical data of connector without pressure is reference only. Relevant value might be reduced 20 ~ 30% smaller after multiple matings.

* For other special request, please contact with LangAn.

Note: Electrical contacts are close proximity to connectors for liquids. Electrical contacts have to be placed above liquid couplings. The fluid couplings must be replaced if a leak is detected.

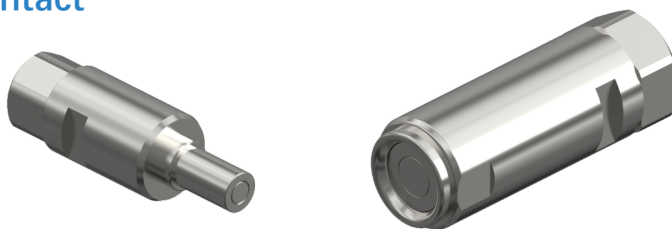
EML Module Types



No. of fluid coupling	Nominal diameter (mm)	Part-numbers	Plug	Socket	Connection end	Shut-off
1	3	EML-P03G00-081V	●		G1/8	With
		EML-S03G00-081V		●	G1/8	With
	5	EML-P05G01-101V	●		G1/4	With
		EML-S05G01-101V		●	G1/4	With
	6	EML-P06G01-101V	●		G1/4	With
		EML-S06G01-101V		●	G1/4	With
2	3	EML-P03G00-082V	●		G1/8	With
		EML-S03G00-082V		●	G1/8	With

Spare part of fluid contact

EML Plug Type



Nominal diameter (mm)	Part-numbers	Plug	Socket	Outer-ØD of the tube (mm)	Shut-off
3	EML-P03G001V	●		G1/8	With
	EML-S03G001V		●	G1/8	With
5	EML-P05G011V	●		G1/4	With
	EML-S05G011V		●	G1/4	With
6	EML-P06G011V	●		G1/4	With
	EML-S06G011V		●	G1/4	With

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