



NL

Metallic Circular Connectors



CHARACTERISTICS

- **Mil-C-38999 Series III intermateable**
Worldwide multi-source availability of intermateable parts.
- **Safety in use**
Scoop-proof design prevents contact damage when mating.
- **FMLB earth contact**
Advanced contact ensures user protection when connecting equipment.
- **Safety female contact**
Protected entry by design.
- **Reliability**
A combination of metallic and composite material is used to ensure robustness for continuous use.
- **Extensive range**
MIL-C-38999 offers 65 different possible platform.
- **Large range of backshells**
Compatible with each Mil-C-38999 Series III backshell.
- **EMI protection**
Shielding effectiveness designed-in.
- **Facility of use**
Contacts can be inserted without tools.
Low cost installation due to the availability of contacts on reels.
The square flange receptacle can be fixed on the panel with a nut too.
- **Coupling mechanism ⁽¹⁾**
A mechanical click denotes the end of the thread and ensures the connector can not unscrew.
- **Coding by the user**
4 coding possibilities achieved by turning the insulator with a simple tool.
- **Straight or right angle exit on the same NL backshell ⁽¹⁾**
- **PG termination possibility**
The NL backshell is threaded in to accept a metallic or plastic PG termination.
- **Packing unit at your convenience**
Individual or tray packaging unit to suit your needs.

⁽¹⁾ Patented system

Amphenol technology applied from concept to production of the NL range, guarantees the following performance levels.

- Temperature range:
-40°C to +105°C.
- Watertightness: IP65
- Durability: up to 200 mating cycles
- Fire withstanding: UL 94 VO



DESCRIPTION

The NL Series of industrial connectors, developed by Amphenol offers a large choice of circular connectors intermateable with Mil-C-38999 devices.

The NL coupling ring provides positive locking which one can feel.

The NL series is fitted with a first make last break earth contact for a safety in use.

Coding can be effected by the user through rotation of the insulator which clips into the connector body.

Robustness and excellent shielding characteristics are assured by the metal shells.

Clever Connection!

APPLICATIONS

The NL series of input/output connectors is ideally suited to the following applications:

- Transportation
- Industrial electronics
- Process automation
- Robotics
- Control / Regulation / Measurement
- Automated warehousing
- Telecommunications
- Specific needs...

NL

NL range: designed to meet your requirements

Characteristics	(1)	(2)	(2)	(2)	Standard
Insert arrangements	13 - 4	17 - 8	23 - 21	25 - 37	MIL C 38999 III
Number of contacts	3 + earth	7 + earth	20 + earth	36 + earth	
Temperature range	-40°C / +105°C				IEC 512 - 6
Climatic category	40 / 105 / 56				IEC 512 - 6
Current rating	10 A				
Operating voltage	250 V AC / 300 V DC				
Proof voltage	> 1500 Vrms				IEC 512 - 2
Contact plating	Ag / Au				
Shielding effectiveness	> 40 dB from 3 KHz à 3 GHz				EN 2591
Resistance to fluids	Hydraulic fluid, petrol, diesel, lubricants, coolants				EN 2591
Durability	> 200 cycles				IEC 512 - 5

(1): Available on stock in our distribution network. (2): Please consult us.



Crimp contacts

Modules	Contact Type	Contact plating (1)	Contact size ø	Wire size range (section)	Packing	Packing unit	Proprietary P/N
Stamped and formed contacts	Male	Ag	1,6 mm	0,14 - 0,50 mm ²	In bulk	100	VN01 016-0003 (1)
				0,50 - 1,50 mm ²			VN01 016-0002 (1)
				1,50 - 2,50 mm ²			VN01 016-0005 (1)
	Female	Ag	1,6 mm	0,14 - 0,50 mm ²	In bulk	100	VN02 016-0003 (1)
				0,50 - 1,50 mm ²			VN02 016-0002 (1)
				1,50 - 2,50 mm ²			VN02 016-0005 (1)

⁽¹⁾ For gold-plated contacts instead of silver-plated contacts, please replace (1) in the final reference by (2).

Crimping pliers for 1.6 mm diameter contacts



Wire size range (section in mm ²)	Insulator ø in mm	Crimping tools (contacts in bulk)	Jaws	Turret positioner
0.14 → 0.50	1.0 → 2.0	TA0100146	Integrated to the pliers	Integrated to the pliers
0.50 → 1.50	1.8 → 2.8	TA0100146	Integrated to the pliers	Integrated to the pliers
1.50 → 2.50	2.5 → 3,5	TA-0000	TA0000141 Green	TA0007-146 0003

Contacts removal tool

Contact size		Reference
1,6 mm		FG 0300 146 (1)

Accessories

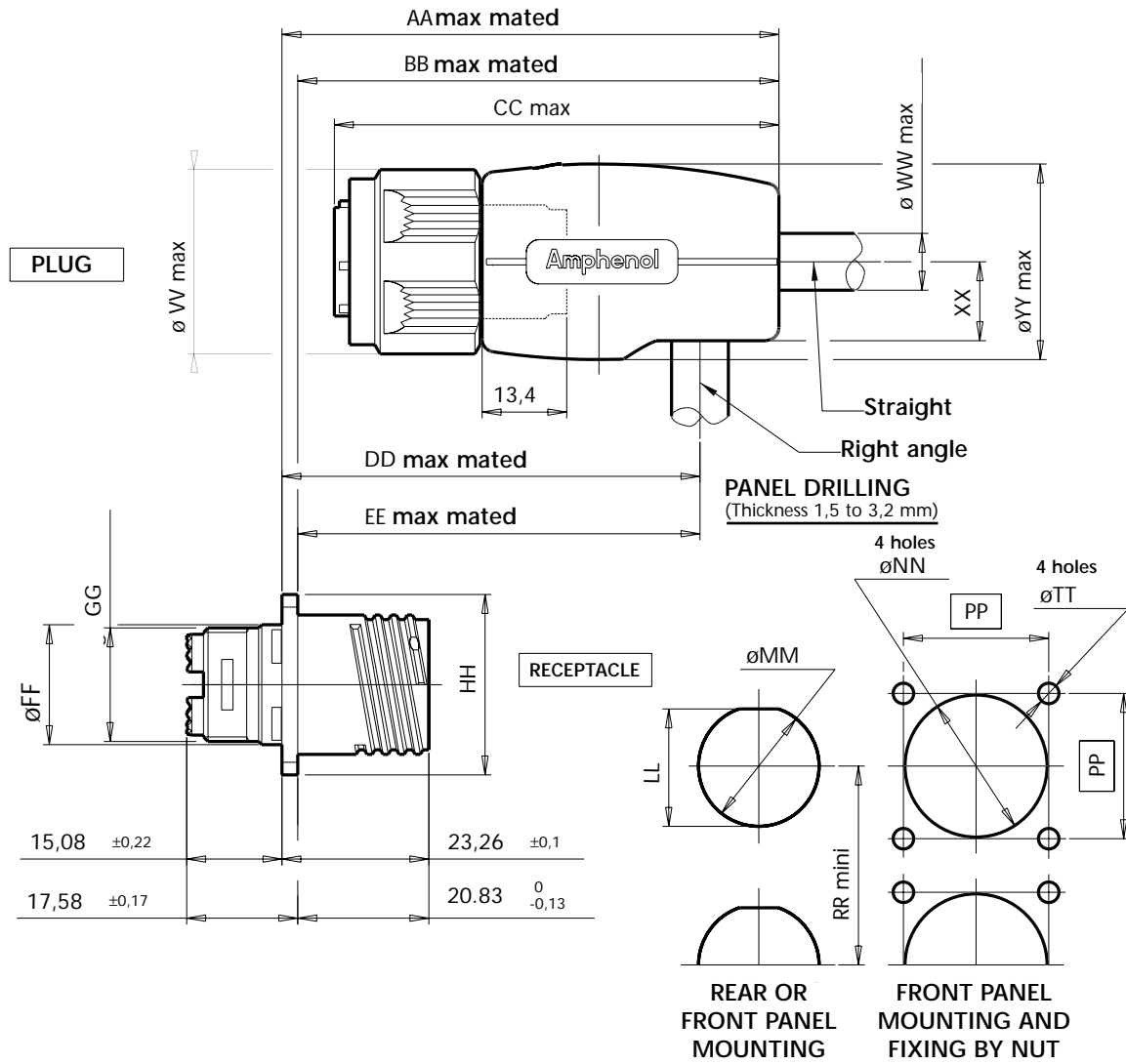
Connector size	Removal/coding tool for the insulator	Nut for fixing the receptacle on the panel*	Ring for optimum shielding**
13	140730	140733	140813
17	140750	140735	140815
23	140780	140738	140818
25	140790	140739	140819

* Front panel mounting. No NL backshell possibility (see panel drilling).

** For optimum shielding at the backshell exit, a ring is available which is slid between the cable-clamp and the rear side of the backshell. For optimum shielding, a metallic EMC PG gland bushing can be used too: please, consult us.

For important quantities, please consult us :

- for 200 contacts reel and corresponding crimping pliers.
- for 2000 contacts reel and corresponding stripper crimper



Connector size	max AA	max BB	max CC	max DD	max EE	0 - 0.1 \varnothing FF	GG	\pm 0.2 HH	+ 0.1 0 LL
13	78.70	76.10	70.40	66.30	63.70	19.00	M 18 X 1	28.58	18.60
17	83.70	81.10	75.40	68.80	66.20	26.00	M 25 X 1	33.32	25.60
23	91.70	89.10	83.40	72.80	70.20	35.00	M 34 X 1	42.88	34.60
25	94.70	92.10	86.40	74.30	71.70	38.00	M 37 X 1	46.02	37.60

Connector size	+ 0.1 0 \varnothing MM	+ 0.2 0 \varnothing NN	PP	min RR	0 - 0.2 \varnothing TT	max \varnothing VV	max \varnothing WW	\pm 0.1 XX	max \varnothing YY
13	19.10	22.50	23.01	31.50	3.25	30.50	9	12.50	31.20
17	26.10	30.40	26.97	38.00	3.25	38.50	14	15.00	38.20
23	35.10	38.40	34.93	47.00	3.81	47.50	20	19.00	47.20
25	38.10	41.60	38.10	50.00	3.81	50.50	23	20.50	50.20

Dimensions given in mm.

NL connector

NL series	NL	S	00	F	13	4	P	01
Stamped contacts: S Machined contacts: M								
Shell style 00: Square flange receptable 06: Plug 01: Extender								
Finish F: Nickel Z: Zinc								
Shell size: 13, 17, 23, 25								
Insert arrangements (see chart page 2)								
Contact type: P = Male, S = Female								
Packing unit: 01 = Individual, XX = Tray (consult us)								

Contacts are delivered separately (see page 2).

NL backshell

NL series	NL	B	F	13	01
Backshell: B					
Finish F: Nickel Z: Zinc					
Shell size: 13, 17, 23, 25					
Packing unit: 01 = Individual, XX = Tray (consult us)					

Do not hesitate to contact us for further information



Amphenol Socapex

Immeuble le Doublon - 11, avenue Dubonnet
92407 Courbevoie Cedex

Tel. : (33) 1 49 05 30 00 - Fax : (33) 1 49 05 30 44

Technical support

Tel. : (33) 4 50 89 28 00

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