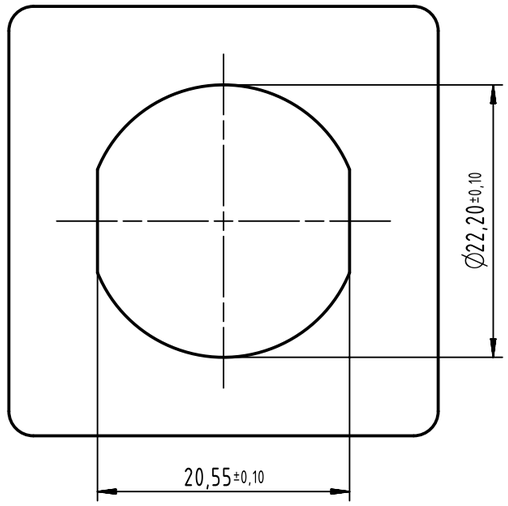
M12 X-coded 1G transformer receptacles

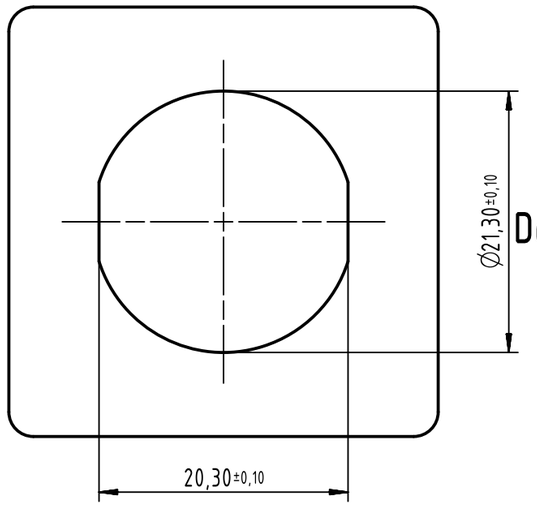
RoHS compliant

GENERAL INFORMATION	
No. of contacts	8 poles
Contact resistance	< 5 mOhm
Working temperature range	-40°C - +85°C
Termination technology	SMT
Reflow processing temperature	245°C Max.
Total insertion force	30N Max. according to IEC 61076-2-109
Total withdrawal force	30N Max. according to IEC 61076-2-109
Mating cycles	100 mating cycles, according to IEC 61076-2-109
Shock and vibration proof	according to IEC 61076-2-109
RoHS - compliant	Yes
Lead free	Yes
PSL level acc. ECA/IPC/JEDEC J-STD-075	R7
INSULATION MATERIAL	
Material	LCP (liquid crystalline polymer)
Color	Black
UL classification	UL94-V0
Material group acc. IEC 60664-1	IIIa (175 ≤ CTI < 400)
CONTACT MATERIAL	
Contact material	Copper alloy
Plating termination zone	Tin
Plating contact sliding side	Gold
SHIELDING MATERIAL	
Shielding material	Copper alloy
Plating	Tin

Recommended Panel cut out



Front mounting use
Detail see drawing 21033012006



Rear mounting use
Detail see drawing 21033012007

All Dimensions in mm
Original Size DIN A3

Scale 1:1 | Free size tol. | Ref. | Sub.

Department EL PD

HARTING
D-32339 Espelkamp

Created by	Inspected by	Standardisation	Date	State
402664	ZENGD	302077	2021-03-15	Final Release

Title: M12 transformer receptacles X-coded 1G straight, SMT

Doc-Key / ECM-Nr.: 100723278/UGD/001/E 500000191093

Type: DS | Number: 21033810102 | Rev.: E | Page: 1/4

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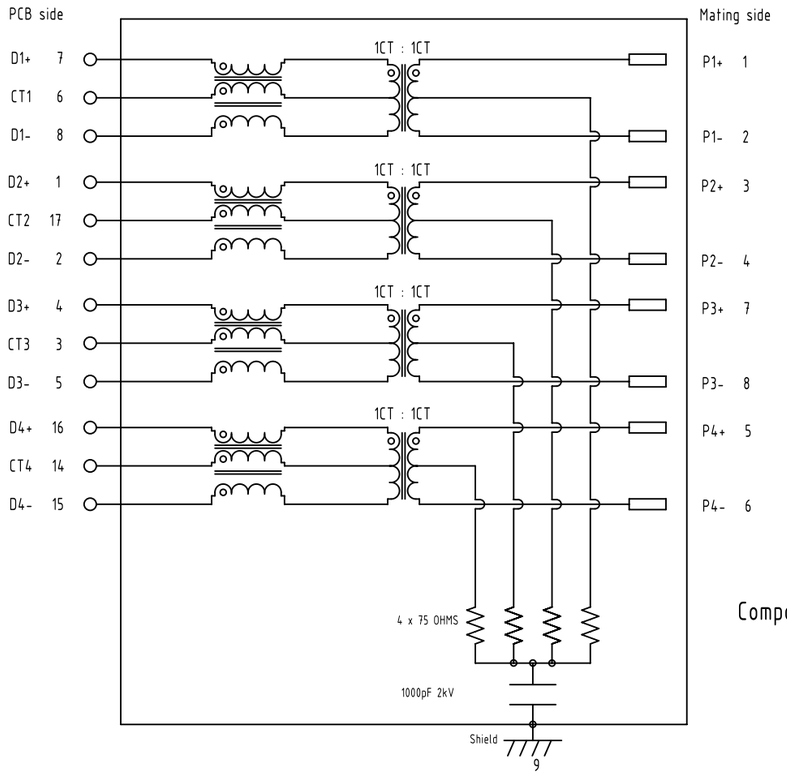
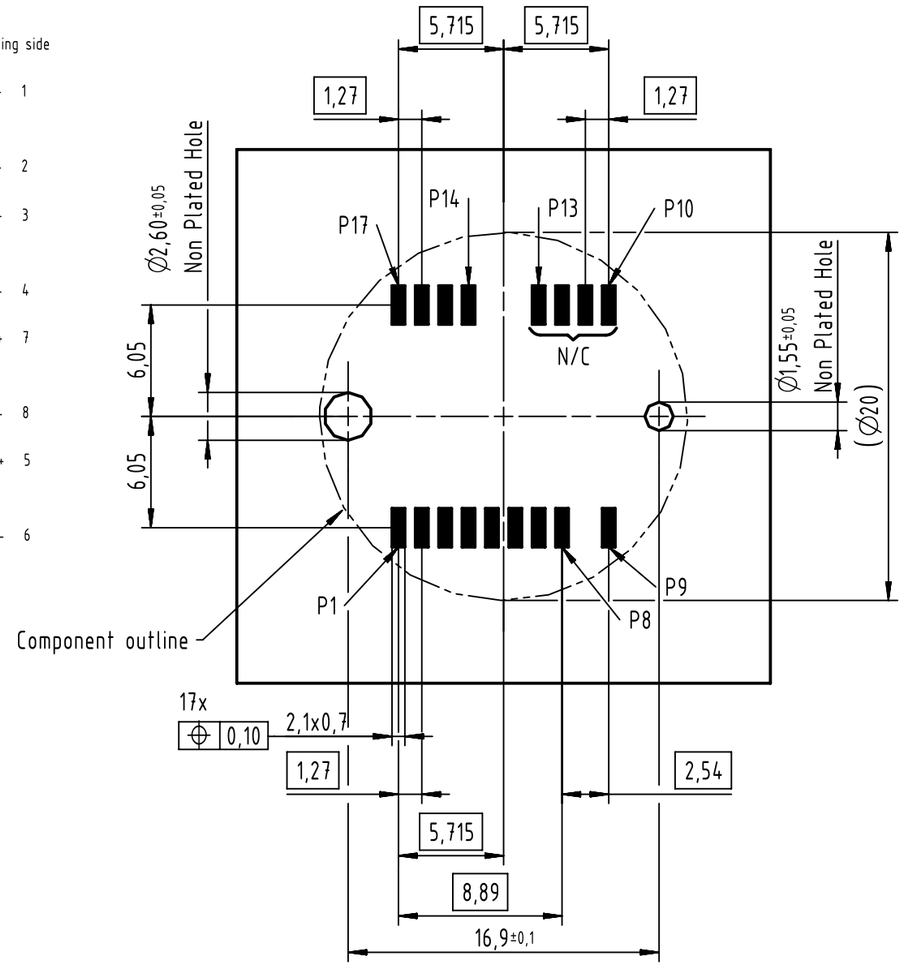
Schematic



Recommended PCB layout



Electrical Characteristics @+25°C unless otherwise noted
Meets IEEE802.3 specification
RoHS compliant

Parameter	Specification/ Limit Values
Operating Temperature	-40°C - +85°C
Turn Ratio (+/- 2%)	1CT : 1CT
OCL	min 350µH @ 100KHz , 100mV with 8mA bias current
Isolation (Input- Output)	2.25kV VDC , for 60sec. min
	f ≤ 100MHz
Insertion Loss	1.3 dB
Return Loss	9 dB
Crosstalk	30 dB
CMRR	30 dB
CDMR	30 dB

NOTE: 1. f is the freqency in MHz
2. The Product has been tested for DC isolation. HARTING assumes no liability or obligation for AC isolation testing.

For X-coded 1G without PoE version only
N/C: leave all pins floating. Do not connect to any of the pins to any net

All Dimensions in mm Original Size DIN A3	Scale 1:1	Free size tol.		Ref.	Sub.
All rights reserved	Created by 402664	Inspected by ZENGD	Standardisation 302077	Date 2021-03-15	State Final Release
Department EL PD	Title M12 transformer receptacles X-coded 1G straight, SMT				Doc-Key / ECM-Nr. 100723278/UGD/001/E 500000191093
HARTING D-32339 Espelkamp	Type DS	Number 21033810102		Rev. E	Page 2/4

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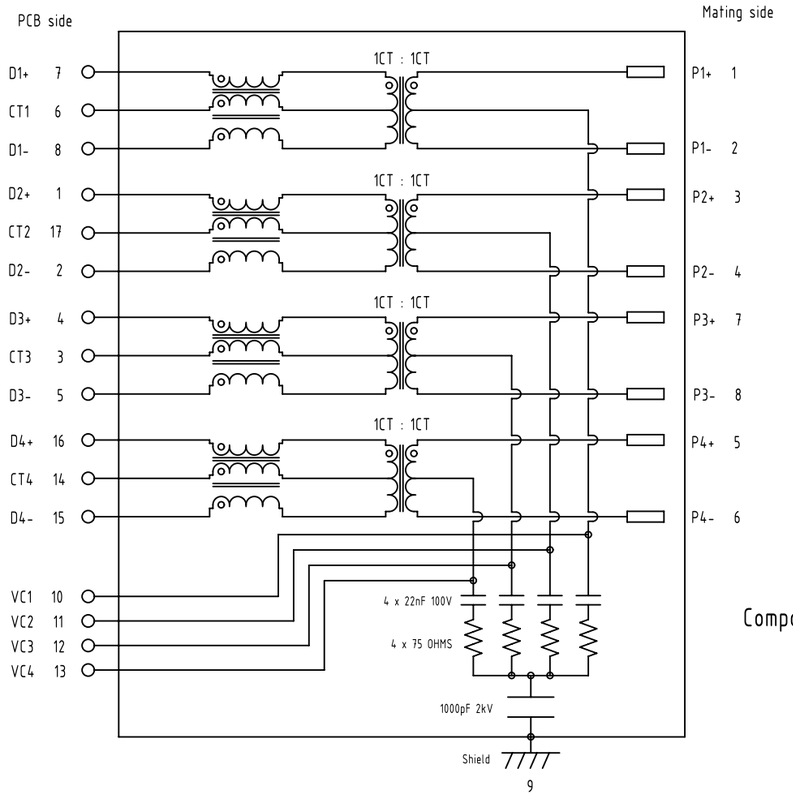
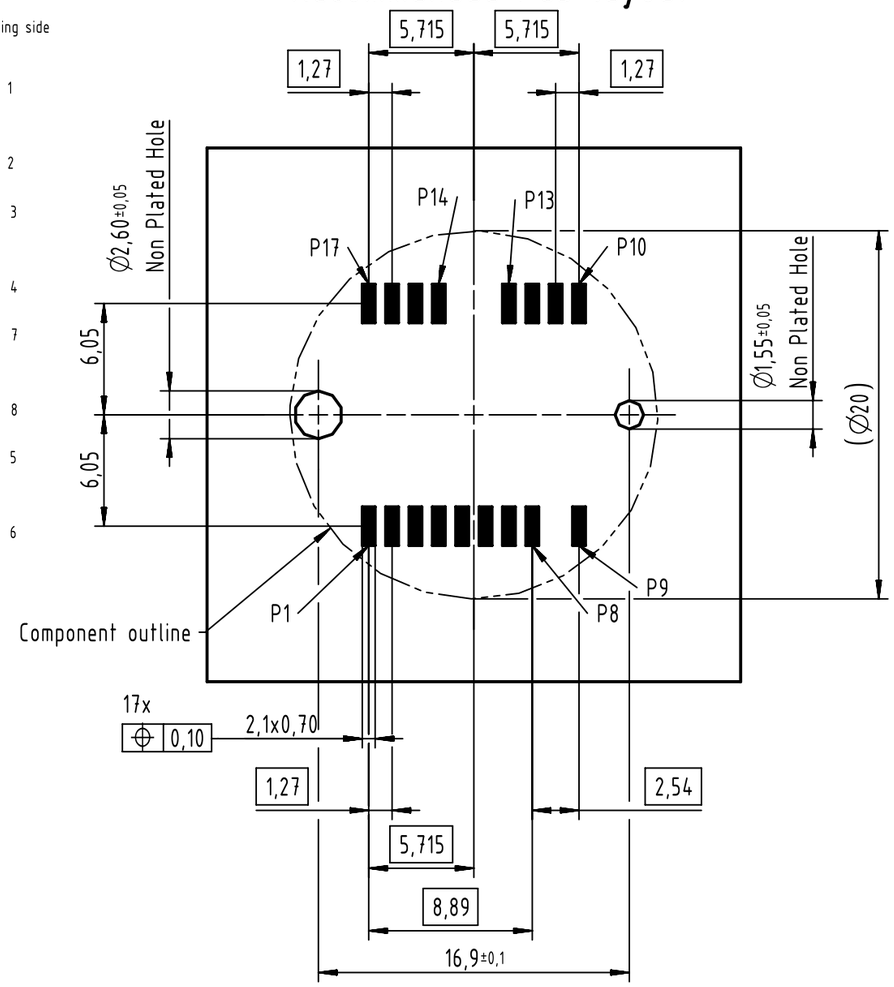
Schematic



Recommended PCB layout



Electrical Characteristics @+25°C unless otherwise noted
Meets IEEE802.3 specification
RoHS compliant

Parameter	Specification/ Limit Values
Operating Temperature	-40°C - +85°C
Turn Ratio (+/- 2%)	1CT : 1CT
Current Capacity Pins 1-8/ VC1-VC4	750mA DC
OCL	min 350µH @ 100KHz , 100mV with 8mA bias current
Isolation (Input- Output)	2.25kV VDC , for 60sec. min
	f ≤ 100MHz
Insertion Loss	1.3 dB
Return Loss	9 dB
Crosstalk	30 dB
CMRR	30 dB
CDMR	30 dB

NOTE: 1. f is the freqency in MHz
2. The Product has been tested for DC isolation. HARTING assumes no liability or obligation for AC isolation testing.

For X-coded 1G with PoE+ version only

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TAPE LAYOUT & PACKAGING

RECOMMENDATION FOR SOLDER PROCESSING

1. PCB pad plating

The M12 transformer receptacle connectors are solderable on lead-free pad surfaces like HAL,NiAu,Immersion Sn.

2. Stencil recommendation

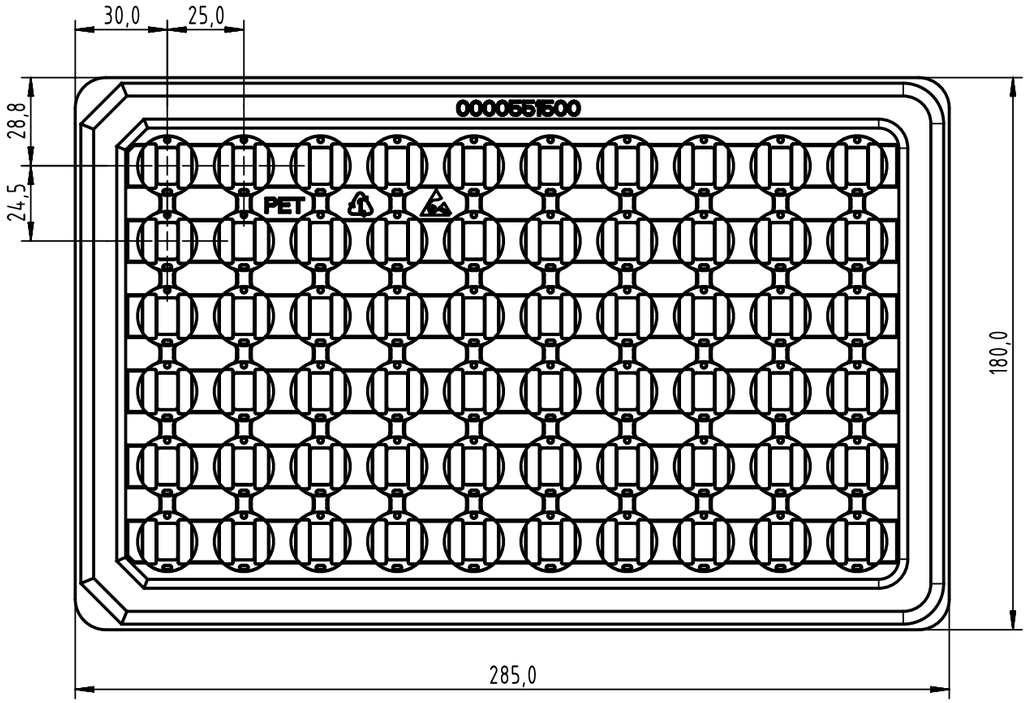
The size of the solder stencil apertures is depending on the thickness of the stencil.

In general, thinner stencils will need larger apertures to result in the required volume of solder paste.

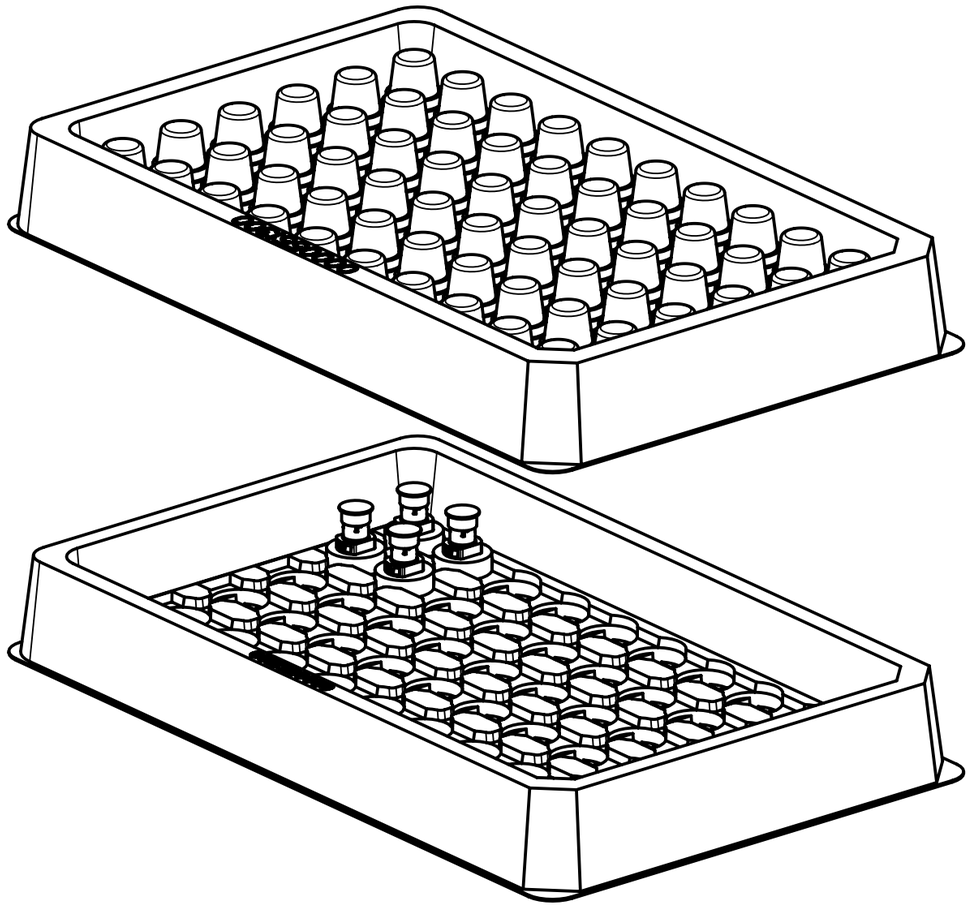
The minimum required solder paste volume for the signal pins is 0,160mm^3,For example, this can be achieved with the following stencil data :

	Single pin		
Stencil thickness	PCB pad size	proposal stencil aperture size	calculated solder paste volume
120 µm	2,1 x 0,7 mm	2,05 x 0,65 mm	0,160 mm³

HARD TRAY LAYOUT & PACKAGING



APPLICATION INFORMATION



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