HARTING ix Industrial® type B

General information

Design	Cable to Board for non ethernet communication e.g. signals & serial bus systems
Product standard	IEC 61076-3-124 (Type B)
No. of contacts	10
Shielding	Fully shielded, 360° shielding contact
Degree of protection	IP20
Mating cycles	Min. 5.000
UL/CSA	UL 1977 ECBT2.E102079/ CSA-C22.2 No 182.3 ECBT8.E102079
RoHS-compliant	Yes
Lead free	Yes

Cable specification

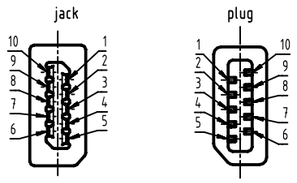
Cable diameter	5,5 to 7,2 mm		
P/N	09451819000	09451819001	09451819002
Connection type	solder	IDC	IDC
Conductor cross section	AWG 28 - 22	AWG 28/7 - 26/7	AWG 24/7
Conductor diameter	max. 1,55 mm	0,95 - 1,05 mm	1,1 - 1,25 mm

Electrical specification

Rated current	1,5A - (all pins) values at 40°C
	3A - 4 pins of contacts no. 1, 2, 6 and 7
Rated voltage	50 V AC / 60 V DC
Contact resistance (100 mA max. (DC or 1000 Hz))	Contact: 30 mΩ max. Shield: 100 mΩ max.
Insulation resistance	500 MΩ min. (500 V DC)
Voltage proof	500 V DC (for 1 min. current leakage max. 2 mA)

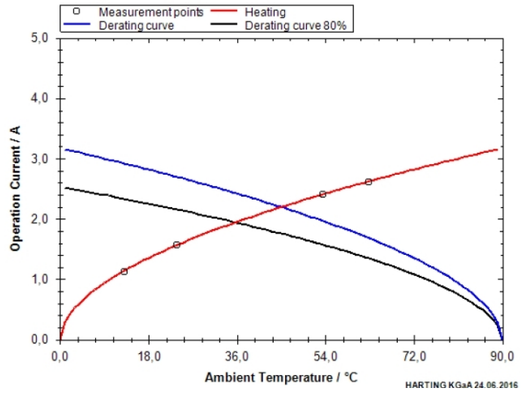
Pin and pair grouping assignment

pin assignment	front view of connector Type B



Derating diagram acc. to IEC512 (Current carrying capacity)

Current-carrying capacity	1,5A @ 40°C



The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.

The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60 512.

Mechanical specification

Insertion force	Max. 25 N
Withdrawal force	Max. 25 N
Mechanical Operation	5.000 times insertions and extractions Mating speed: 10 mm/s max. Rest: 5s,min. (unmated)
Lock Strength	Min. 80 N (for the mating axis direction in state in fitted with applicable connector)
Wrenching Strength	Applying 25times of 30 N 1 s for 2 axis direction on tip of plug case in state in fitted with applicable connector

Environment specification

Storage temperature range	-30°C to +60°C (95% RH max.)
Operating temperature range	-40°C to +85°C (95% RH max.)
Rapid change of temperature (IEC 60512-11d)	10 cycles between -55°C and 85°C with 30 minutes dwell at temp. extremes and 1 minute transition between temperatures
Dry heat (IEC 60512-11i)	Temperature 85°C, duration 500 h
Damp heat cyclic (IEC 60068-2-38)	25°C to 65°C; cold sub-cycle - 10°C; humidity 93 % RH 25 cycles, 1 cycle/24 h
Cold (IEC 60512-11j)	-55°C duration 240 h
Flow mixed gas test (IEC 60068-2-60)	Duration 4 d, Method 4 (mated and unmated)
Corrosion salt mist	Exposed at 5 % salt water, 35 ± 2°C, duration 48 h
Vibration Sinusoidal (IEC 60512-test 6d)	10 – 500 Hz; 0,35 mm; 49 m/s² 2 h / 3 axis; No contact disturbances ≥ 1 µs
Mechanical shock (IEC 60512-test 6c)	Half sine shock 500 m/s², duration 11 ms 3 shocks / both directions / 3 axis – totally 18 shocks; No contact disturbances ≥ 1 µs
Mechanical shock (DIN EN 61373 Class 1 cat b) Additional test to fulfill DIN EN 50155 for railway equipment	Half sine shock 5 g, duration 30 ms 5 shocks / both directions / 3 axis – totally 30 shocks; No contact disturbances ≥ 1 µs
Random vibration (DIN EN 61373 Class 1 cat b) Additional test to fulfill DIN EN 50155 for railway equipment	Class 1 cat b 5,72 m/s²; No contact disturbances ≥ 1 µs
Fretting Corrosion	490 m/s², 30 times/min at 1.000 times; No contact disturbances ≥ 1 µs

All Dimensions in mm
Original Size DIN A3

Scale 1:1	Free size tol.			Ref.	
				Sub.	
	Created by PREOTU	Inspected by PRIESTER	Standardisation 302077	Date 2020-10-22	State Final Release
Department EL PD	Title HARTING ix Industrial® type B				Doc-Key / ECM-Nr. 100794076/UGD/000/E 500000181835
HARTING Electronics GmbH D-32339 Espelkamp	Type DS	Number 09450000004		Rev. E	Page 1/2

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HARTING ix Industrial® type B

Material specification

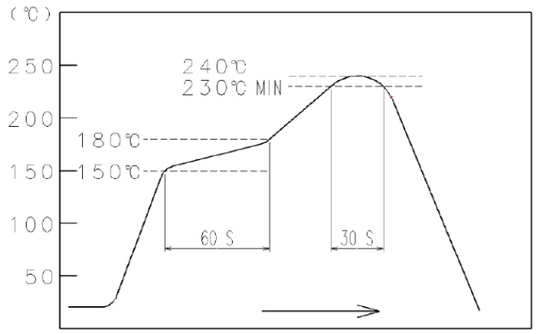
Isolator material plug			
Material	Isolation body PA Plug hood PC		
Color	Black		
UL classification	UL94 V-0		
Isolator material jack			
P/N	09452819000	09452819001	09452819002
Material	LCP	LCP	PA
Color	Grey		
UL classification	UL94 V-0		
Contact			
Contact material	Copper alloy		
Plating contact zone	Au (min. 0,2 µm) over Ni (min. 1,27 µm)		
Plating solder area	Au (min. 0,05 µm) over Ni (min. 1,27 µm)		
Shielding shells			
Material	Stainless steel		
Plating	Sn (min. 1 µm) over Ni (min. 2 µm) solder area and mating zone Ni (min. 2 µm) for all other areas		

Soldering specification

Solderability	Soldering point immersed in solder bath of +235°C ± 5°C, 5 sec. (using type r flax). Solder cover minimum of 95 % of the surface being immersed.	
Resistance to soldering heat		
Soldering details plug	+250°C ± 10°C, 5 sec. at soldering parts	
Soldering details jack	PSL level acc. ECA/IPC/JEDEC J-STD-075	PSL R0
	MSL level acc. ECA/IPC/JEDEC J-STD-020D	MSL 1

Recommended soldering profile for plug

In addition to the maximum values resulting from the above mentioned MSL and PSL values, we can recommend the following soldering profile as a guide. Please note that this is only an indication. The specific soldering profile must always be adapted to the application and the solder which will be used.



Recommended reflow profile temperature
(temperature at smt leads)

Packaging specification

Material	PE + PS

All Dimensions in mm Original Size DIN A3	Scale 1:1	Free size tol.		Ref. Sub.	
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