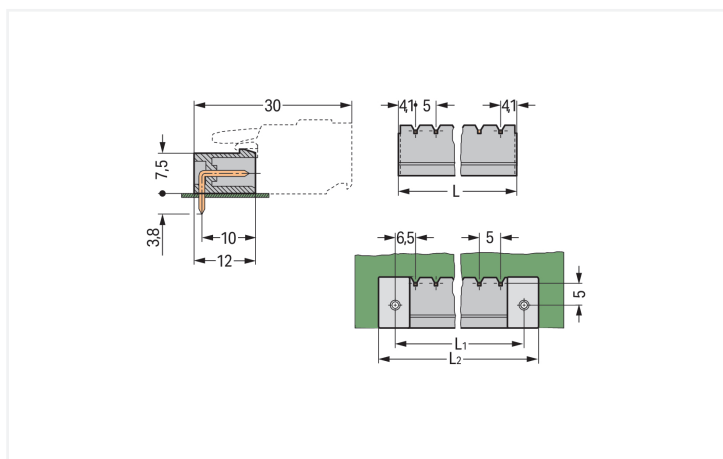
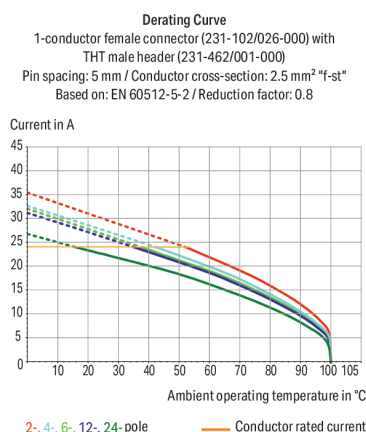


THT male header; 1.2 x 1.2 mm solder pin; angled; Pin spacing 5 mm; 11-pole; gray

<https://www.wago.com/231-471/001-000>



Color: gray



Dimensions in mm

$$L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm} \quad L1 = L + 5 \text{ mm} \quad L2 = L1 + 7.4 \text{ mm}$$

Male connector, 231 Series, gray

Seamless electrical installations are guaranteed with this male connector (item number 231-471/001-000). The item's dimensions are (58.2 x 12.2 x 12) mm (width x height x depth).

Tin is used for coating the contact surfaces. THT is used to solder the pcb connector.

Notes

Safety Information

The **MCS – MULTI CONNECTION SYSTEM** includes connectors without breaking capacity in accordance with DIN EN 61984. When used as intended, these connectors must not be connected/disconnected when live or under load. When used as intended, these connectors must not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

Variants:

Other pole numbers
3.8 mm pin projection for male headers with straight solder pins
Gold-plated or partially gold-plated contact surfaces
Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>.

Electrical data							
Ratings per				IEC/EN 60664-1			
Overvoltage category		III		III		II	
Pollution degree		3		2		2	
Nominal voltage		250 V		320 V		630 V	
Rated impulse withstand voltage		4 kV		4 kV		4 kV	
Rated current		16 A		16 A		16 A	

Approvals per				UL 1059			
Use group		B		C		D	
Rated voltage		300 V		-		300 V	
Rated current		20 A		-		10 A	

Ratings			
Approvals per		UL 1977	
Rated voltage		600 V	
Rated current		15 A	

Approvals per				CSA			
Use group		B		C		D	
Rated voltage		300 V		-		300 V	
Rated current		20 A		-		10 A	

Connection Data			
Total number of potentials	11	Connection 1	
Number of connection types	1	Pole number	11
Number of levels	1		

Physical data	
Pin spacing	5 mm / 0.197 inches
Width	58.2 mm / 2.291 inches
Height	12.2 mm / 0.48 inches
Height from the surface	8.4 mm / 0.331 inches
Depth	12 mm / 0.472 inches
Solder pin length	3.8 mm
Solder pin dimensions	1.2 x 1.2 mm
Drilled hole diameter	1.7 ^(+0.1) mm

Mechanical data	
Variable coding	Yes
Anti-rotation protection	Yes

Plug-in connection	
Contact type (pluggable connector)	Male connector/plug
Connector (connection type)	for PCB
Mismating protection	No
Mating direction to the PCB	0 °

PCB contact	
PCB contact	THT
Solder pin arrangement	over the entire male connector (in-line)
Number of solder pins per potential	1



Material data		
Note (material data)	Information on material specifications can be found here	
Color	gray	
Material group	I	
Insulation material (main housing)	Polyamide (PA66)	
Flammability class per UL94	V0	
Contact material	Electrolytic copper (E _{Cu})	
Contact Plating	Tin	
Fire load	0.057 MJ	
Weight	4.2 g	

Environmental requirements		
Limit temperature range	-60 ... +100 °C	Environmental Testing
Processing temperature	-35 ... +60 °C	
		Test specification: DIN EN 50155 (VDE 0115-200):2022-06 Railway applications – Rolling stock – Electronic equipment
		Test procedure: DIN EN 61373 (VDE 0115-0106):2011-04 Railway applications – Rolling stock equipment – Vibration and shock tests
		Spectrum/Mounting location Service life test, Category 1, Class A/B
		Functional test with noise-like oscillations Test passed according to Section 8 of the standard
		Frequency f ₁ = 5 Hz to f ₂ = 150 Hz
		Acceleration 0.101g (highest test level used for all axes)
		Test duration per axis 10 min.
		Test directions X, Y and Z axes
		Monitoring of contact faults and interruptions Passed
		Voltage drop measurement before and after each axis Passed
		Simulated service life test through increased levels of noise-like oscillations Test passed according to Section 9 of the standard
		Frequency f ₁ = 5 Hz to f ₂ = 150 Hz
		Acceleration 0.572g (highest test level used for all axes)
		Test duration per axis 5 h
		Test directions X, Y and Z axes
		Extended testing: Monitoring of contact faults and interruptions Passed
		Extended testing: Voltage drop measurement before and after each axis Passed
		Shock test Test passed according to Section 10 of the standard
		Shock pulse form Half sine
		Acceleration 5g (highest test level used for all axes)
		Shock duration 30 ms
		Number of shocks (per axis) 3 pos. und 3 neg.
		Test directions X, Y and Z axes
		Extended testing: Monitoring of contact faults and interruptions Passed
		Extended testing: Voltage drop measurement before and after each axis Passed
		Vibration and shock stress for rolling stock equipment Passed



Commercial data	
Product Group	3 (Multi Conn. System)
PU (SPU)	100 pcs
Packaging type	Box
Country of origin	PL
GTIN	4044918930604
Customs tariff number	85366930000

Product Classification	
UNSPSC	39121409
eCl@ss 10.0	27-44-04-02
eCl@ss 9.0	27-44-04-02
ETIM 9.0	EC002637
ETIM 10.0	EC002637
ECCN	NO US CLASSIFICATION

Environmental Product Compliance	
RoHS Compliance Status	Compliant, No Exemption

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CB DEKRA Certification B.V.	IEC 61984	NL-113351
CSA DEKRA Certification B.V.	C22.2	LR 18677-25
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-130478 REV.1
UL Underwriters Laboratories Inc.	UL 1059	UL-US- L45172-6187117-81111991-4
UR Underwriters Laboratories Inc.	UL 1977	E45171

Declarations of conformity and manufacturer's declarations



Approval	Standard	Certificate Name
Railway WAGO GmbH & Co. KG	-	Railway Ready

Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	24-0095975-PDA
BV Bureau Veritas S.A.	IEC 60998	11915/E0 BV
DNV DNV GL SE	-	TAE000016Z
PRS Polski Rejestr Statków	-	TE/1095/880590/23



Downloads			
Environmental Product Compliance			
Compliance Search			
Environmental Product Compliance	231-471/001-000		↓

Documentation			
Additional Information			
Technical Section	03.04.2019	pdf 2027.26 KB	↓

CAD/CAE-Data			
CAD data		CAE data	
2D/3D Models	231-471/001-000	EPLAN Data Portal	231-471/001-000
	↓		↓
		ZUKEN Portal	231-471/001-000
			↓

PCB Design	
Symbol and Footprint via SamacSys	231-471/001-000
	↓
Symbol and Footprint via Ultra Librarian	231-471/001-000
	↓

1 Compatible Products
1.1 System counterpart
1.1.1 Female connector/socket



Item No.: 231-111/026-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 11-pole; gray



1.2 Optional Accessories

1.2.1 Coding

1.2.1.1 Coding



Item No.: 231-129
Coding key; snap-on type; light gray

1.2.1.2 Intermediate plate



Item No.: 231-500
Spacer; for formation of groups; light gray

1.2.2 Installation

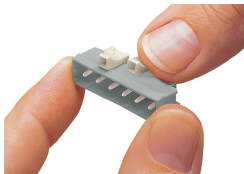
1.2.2.1 Mounting accessories



Item No.: 231-193
Locking device; for male connectors; 1 part; gray

Installation Notes

Coding



Coding a male header – fitting coding key(s).