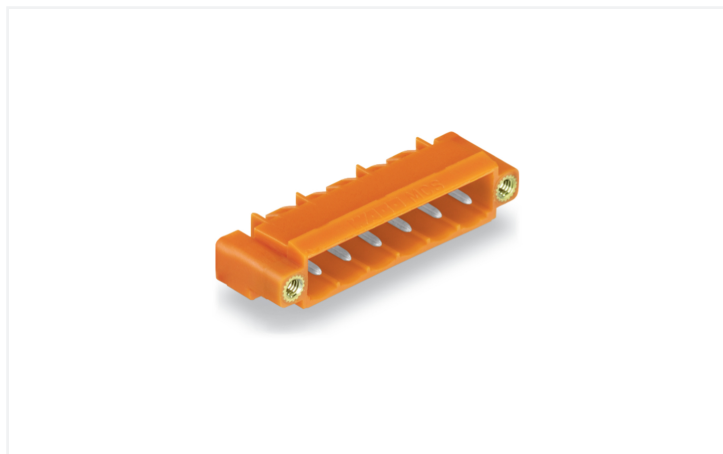


Data Sheet | Item Number: 231-539/108-000

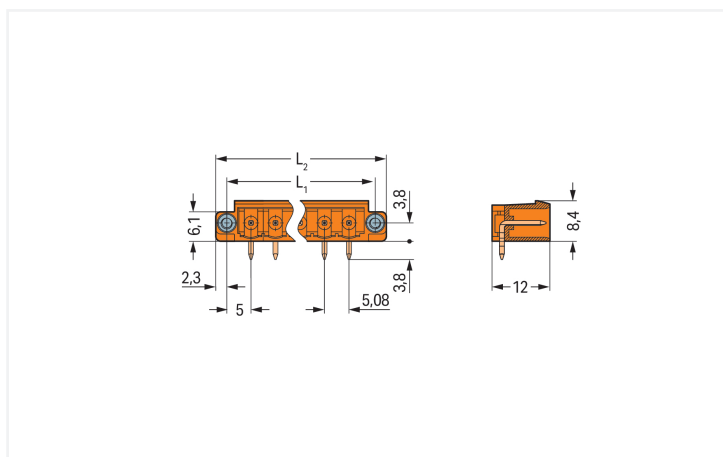
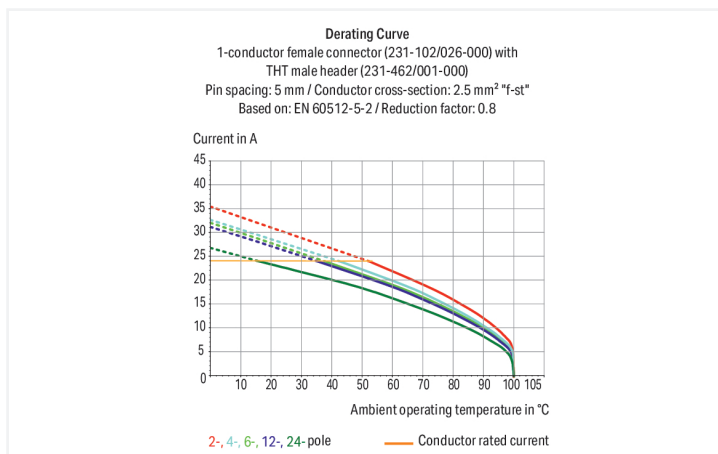
THT male header; 1.0 x 1.0 mm solder pin; angled; Threaded flange; Pin spacing 5.08 mm; 9-pole; orange

<https://www.wago.com/231-539/108-000>



Color: ■ orange

Similar to illustration



Dimensions in mm

$L1 = (\text{pole no.} \times \text{pin spacing}) + 5.4 \text{ mm}$
 $L2 = (\text{pole no.} \times \text{pin spacing}) + 10 \text{ mm}$

Male connector, 231 Series, orange

Our male connector (item number 231-539/108-000) is designed for seamless electrical installations. The dimensions are (55.72 x 12.2 x 12) mm (width x height x depth).

The contact surface is coated with tin. The pcb connector is designed for THT soldering.



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	320 V	320 V	630 V
Rated impulse withstand voltage	4 kV	4 kV	4 kV
Rated current	12 A	12 A	12 A
Approvals per		UL 1059	
Use group	B	C	D
Rated voltage	300 V	-	300 V
Rated current	10 A	-	10 A

Approvals per		UL 1977	
Rated voltage	600 V		
Rated current	10 A		

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

Connection Data	
Total number of potentials	9
Number of connection types	1
Number of levels	1

Connection 1	
Pole number	9

Physical data	
Pin spacing	5.08 mm / 0.2 inches
Width	55.72 mm / 2.194 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 x 1 mm
!	1.4 (+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°
Locking of plug-in connection	Threaded flange

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	orange
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	0.066 MJ
Weight	3.7 g

Environmental requirements																																								
Limit temperature range	-60 ... +100 °C	<table><tr><th colspan="2">Environmental Testing</th></tr><tr><td>Test specification: Railway applications – Rolling stock – Electronic equipment</td><td>DIN EN 50155 (VDE 0115-200):2022-06</td></tr><tr><td>Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests</td><td>DIN EN 61373 (VDE 0115-0106):2011-04</td></tr><tr><td>Spectrum/Mounting location</td><td>Service life test, Category 1, Class A/B</td></tr><tr><td>Functional test with noise-like oscillations</td><td>Test passed according to Section 8 of the standard</td></tr><tr><td>Frequency</td><td>f₁ = 5 Hz to f₂ = 150 Hz</td></tr><tr><td>Acceleration</td><td>0.101g (highest test level used for all axes)</td></tr><tr><td>Test duration per axis</td><td>10 min.</td></tr><tr><td>Test directions</td><td>X, Y and Z axes</td></tr><tr><td>Monitoring of contact faults and interruptions</td><td>Passed</td></tr><tr><td>Voltage drop measurement before and after each axis</td><td>Passed</td></tr><tr><td>Simulated service life test through increased levels of noise-like oscillations</td><td>Test passed according to Section 9 of the standard</td></tr><tr><td>Frequency</td><td>f₁ = 5 Hz to f₂ = 150 Hz</td></tr><tr><td>Acceleration</td><td>0.572g (highest test level used for all axes)</td></tr><tr><td>Test duration per axis</td><td>5 h</td></tr><tr><td>Test directions</td><td>X, Y and Z axes</td></tr><tr><td>Extended testing: Monitoring of contact faults and interruptions</td><td>Passed</td></tr><tr><td>Extended testing: Voltage drop measurement before and after each axis</td><td>Passed</td></tr><tr><td>Shock test</td><td>Test passed according to Section 10 of the standard</td></tr></table>	Environmental Testing		Test specification: Railway applications – Rolling stock – Electronic equipment	DIN EN 50155 (VDE 0115-200):2022-06	Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests	DIN EN 61373 (VDE 0115-0106):2011-04	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
Environmental Testing																																								
Test specification: Railway applications – Rolling stock – Electronic equipment	DIN EN 50155 (VDE 0115-200):2022-06																																							
Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests	DIN EN 61373 (VDE 0115-0106):2011-04																																							
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																																							
Processing temperature	-35 ... +60 °C																																							



Environmental Testing	
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	4044918867160
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,With Exemption
RoHS Exemption	6(c)
SCIP notification number (Austria)	6c1f6a8d-6af4-4794-af85-698ca1c76d0e
SCIP notification number (Belgium)	8253f13f-a145-400d-94db-bb65388c0b05
SCIP notification number (Bulgaria)	d2d1d96a-d38a-40a8-82b5-3220fc02132f
SCIP notification number (Czech Republic)	07b283b9-4015-4db3-972b-5930143d81ad
SCIP notification number (Denmark)	6468e8c0-4ec6-455d-bbd7-3bbdcaf6b579
SCIP notification number (Finland)	3c789f05-3fec-4f2a-b4ff-2248104ae923
SCIP notification number (France)	dcc2d9d9-8409-40e0-92ca-88a85ca3982e
SCIP notification number (Germany)	3e03c623-8045-485b-bf06-2437cc631288
SCIP notification number (Hungary)	2bb87959-da4d-4729-890f-6c3441dbb0b0
SCIP notification number (Italy)	6825f099-2231-4b49-b341-4e108081d2a8
SCIP notification number (Netherlands)	30c6eede-7a01-4a6b-adf3-9cecad4fb32e
SCIP notification number (Poland)	1ea5343d-9e00-4c75-b003-6ad32bf2c3f1
SCIP notification number (Romania)	ac0908e4-afd3-417e-9019-015e20b69f5f
SCIP notification number (Sweden)	80c3b15b-4212-4664-854f-f1d230f406cf



Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CSA DEKRA Certification B.V.	C22.2	1466354
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-130478 REV.1
UL UL International Germany GmbH	UL 1977	E45171
UR Underwriters Laboratories Inc.	UL 1059	E45172

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
BV Bureau Veritas S.A.	IEC 60998	11915/E0 BV

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 231-539/108-000



Documentation

Additional Information
Technical Section 03.04.2019 pdf 2027.26 KB



CAD/CAE-Data

CAD data
2D/3D Models 231-539/108-000



CAE data
EPLAN Data Portal 231-539/108-000



ZUKEN Portal 231-539/108-000



PCB Design	
Symbol and Footprint via SamacSys 231-539/108-000	
Symbol and Footprint via Ultra Librarian 231-539/108-000	

1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



[Item No.: 231-309/107-000](#)
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Screw flange; orange



[Item No.: 2231-309/107-000](#)
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Screw flange; 2,50 mm²; orange



[Item No.: 231-2309/107-000](#)
2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Screw flange; orange

1.2 Optional Accessories

1.2.1 Coding

1.2.1.1 Coding



[Item No.: 231-129](#)
Coding key; snap-on type; light gray

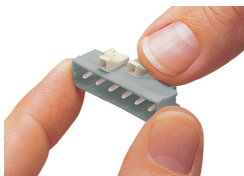
1.2.1.2 Intermediate plate



[Item No.: 231-500](#)
Spacer; for formation of groups; light gray

Installation Notes

Coding



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