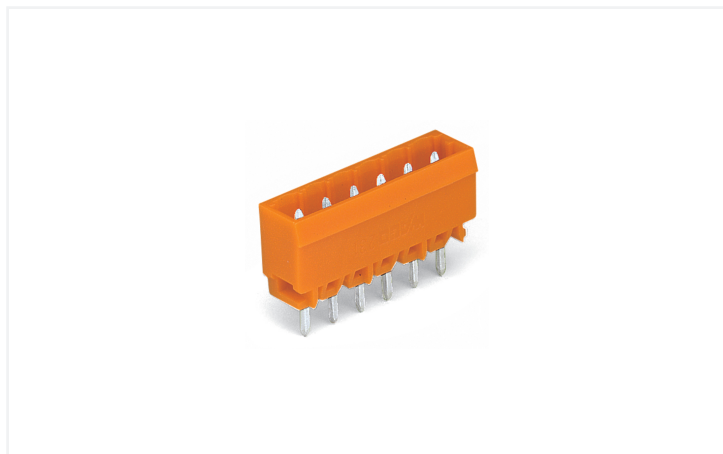


Data Sheet | Item Number: 231-351/001-000

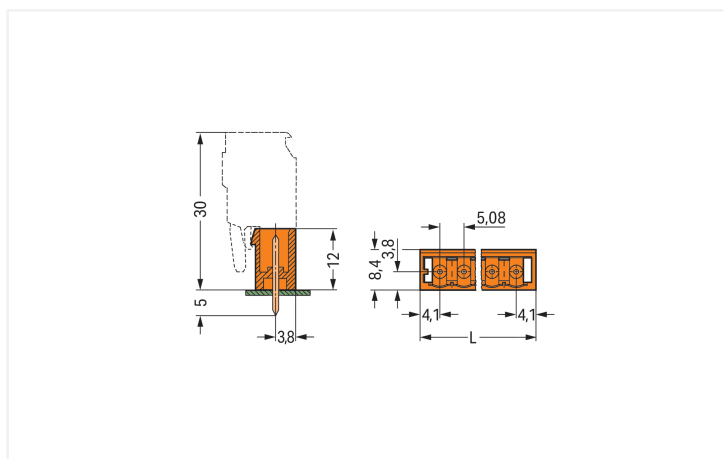
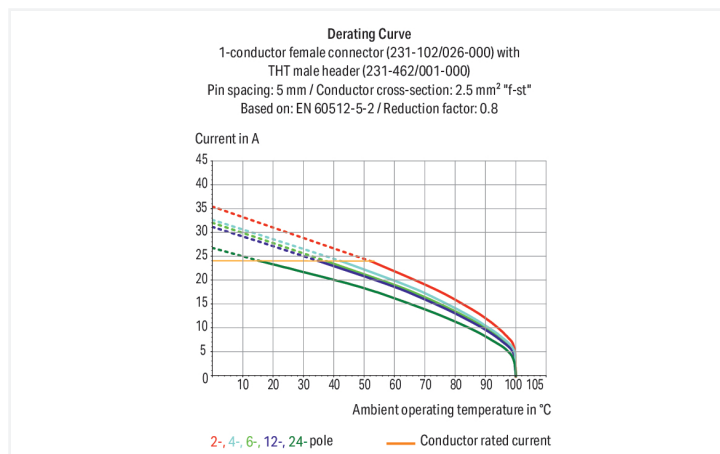
THT male header; 1.0 x 1.0 mm solder pin; straight; Pin spacing 5.08 mm; 21-pole;
orange

<https://www.wago.com/231-351/001-000>



Color: ■ orange

Similar to illustration



Dimensions in mm

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

Male connector, 231 Series, with 5.08 mm pin spacing

Seamless electrical installations are guaranteed with this male connector (item number 231-351/001-000). The item's dimensions are (109.8 x 17 x 8.4) 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	21	
Number of connection types	1	
Number of levels	1	
Connection 1		
Pole number	21	

Physical data	
Pin spacing	5.08 mm / 0.2 inches
Width	109.8 mm / 4.323 inches
Height	17 mm / 0.669 inches
Height from the surface	12 mm / 0.472 inches
Depth	8.4 mm / 0.331 inches
Solder pin length	5 mm
Solder pin dimensions	1 x 1 mm
Drilled hole diameter with tolerance	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	90 °

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	0.123 MJ
Weight	6.8 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><tr><td>Shock pulse form</td><td>Half sine</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	Shock pulse form	Half sine
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Shock test	Test passed according to Section 10 of the standard																																									
Shock pulse form	Half sine																																									
Processing temperature	-35 ... +60 °C																																									



Environmental Testing	
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)	50 pcs
Packaging type	Box
Country of origin	PL
GTIN	4044918865920
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	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
ABS American Bureau of Ship- ping	-	24-0095975-PDA

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 231-351/001-000



Documentation

Additional Information
Technical Section 03.04.2019 pdf 2027.26 KB



CAD/CAE-Data

CAD data
2D/3D Models 231-351/001-000



CAE data
EPLAN Data Portal 231-351/001-000



ZUKEN Portal 231-351/001-000



PCB Design
Symbol and Footprint via SamacSys 231-351/001-000
Symbol and Footprint via Ultra Librarian 231-351/001-000



1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



[Item No.: 232-321/026-000](#)
1-conductor female connector, angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08
mm; 21-pole; 2,50 mm²; orange



[Item No.: 232-421/026-000](#)
1-conductor female connector, angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing
5.08 mm; 21-pole; 2,50 mm²; orange



[Item No.: 231-321/031-000](#)
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;
21-pole; clamping collar; orange



[Item No.: 231-321/037-000](#)
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;
21-pole; Lateral locking levers; orange

1.1.1 Female connector/socket



Item No.: 231-321/026-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; orange



Item No.: 231-321/102-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; with integrated end plate; orange



Item No.: 231-322/027-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 22-pole; clamping collar; orange



Item No.: 2231-321/026-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; 2,50 mm²; orange



Item No.: 2231-321/031-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; clamping collar; 2,50 mm²; orange



Item No.: 2231-321/037-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; Lateral locking levers; 2,50 mm²; orange



Item No.: 2231-321/102-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 21-pole; with integrated end plate; 2,50 mm²; 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

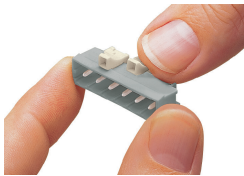
1.2.1.2 Intermediate plate



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

Installation Notes

Coding



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