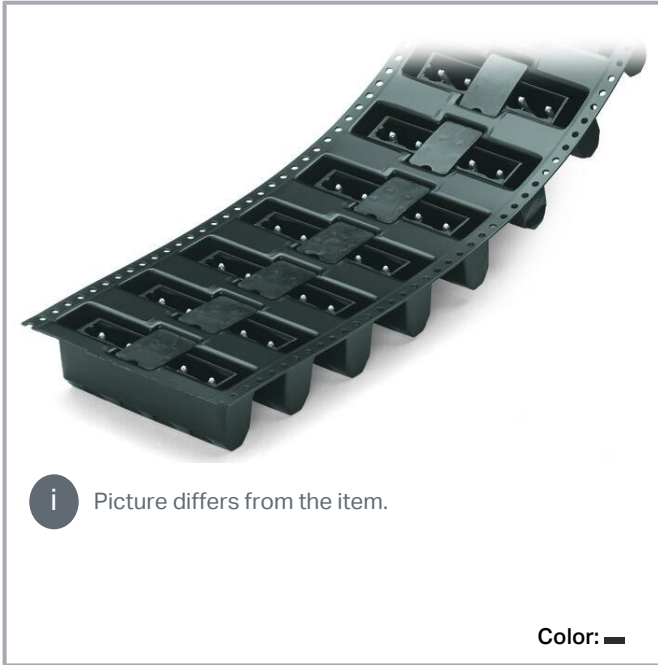


Data sheet | Item number: 231-239/001-000/105-604/997-409

THR male header; 1.0 x 1.0 mm solder pin; straight; in tape-and-reel packaging; Pin spacing 7.5 mm; 9-pole; black

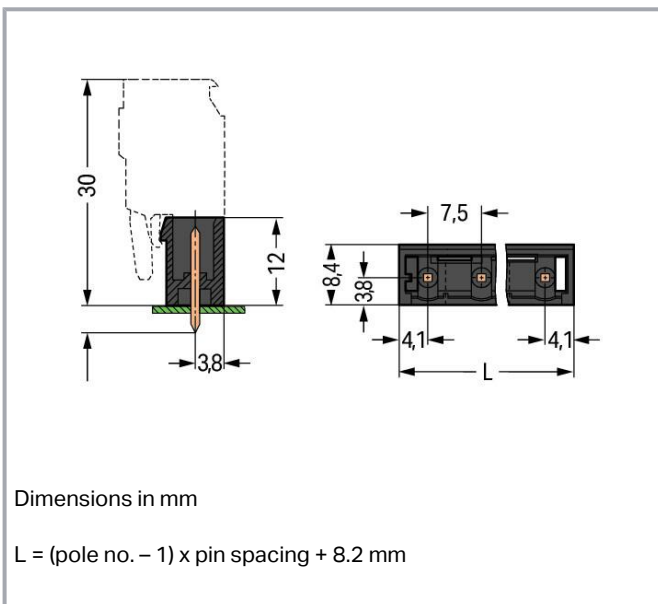
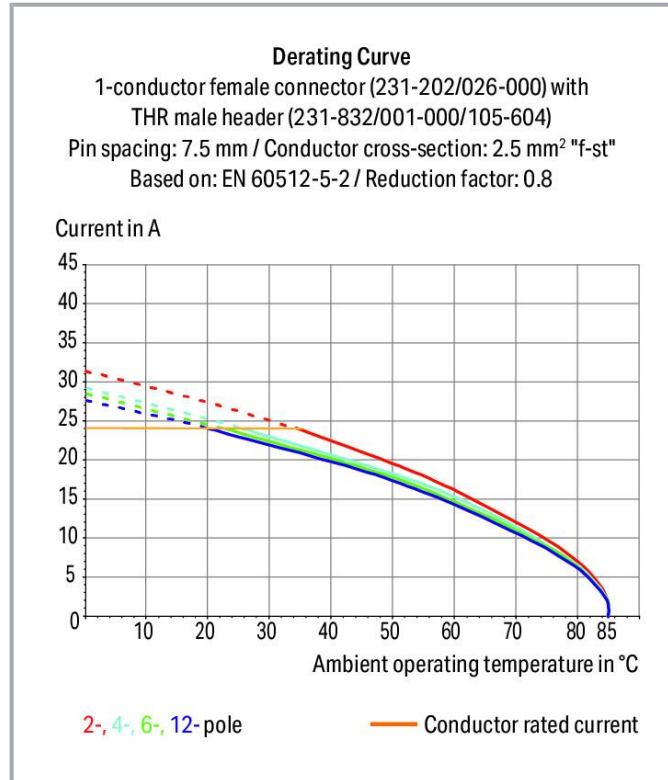


[www.wago.com/231-239/001-000/105-604/997-409](http://www.wago.com/231-239/001-000/105-604/997-409)



**i** Picture differs from the item.

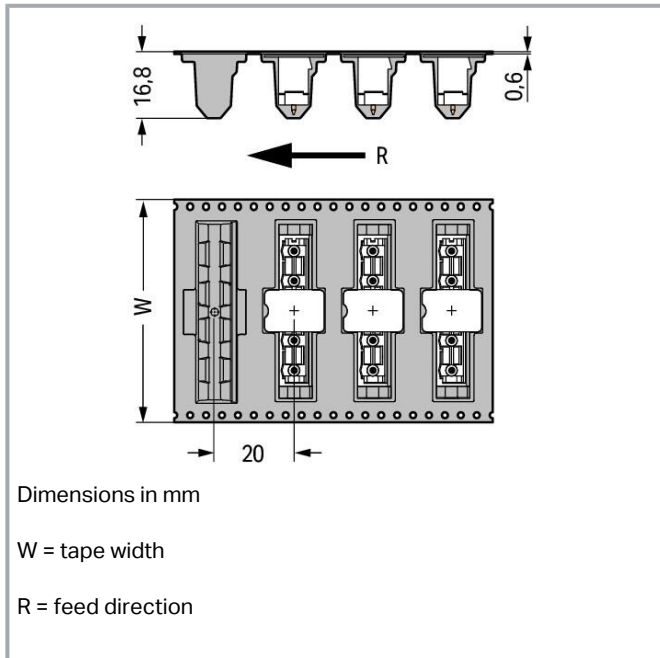
Color: ■



Subject to changes. Please also observe the further product documentation!

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Do you have any questions about our products?  
We are always happy to take your call at +49 (571) 887-44222.



## Item description

- THR male headers for reflow soldering in SMT applications
- Available in tape-and-reel packaging for automated pick-and-place PCB assembly
- Also available in bulk packaging for manual placement
- Male headers may be mounted horizontally or vertically
- With coding fingers

## Data

### 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  
 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/>.

Subject to changes. Please also observe the further product documentation!



## Electrical data

### Ratings per IEC/EN

Ratings per	IEC/EN 60664-1
Nominal voltage (III/3)	500 V
Rated impulse voltage (III/3)	6 kV
Rated voltage (III/2)	630 V
Rated impulse voltage (III/2)	6 kV
Nominal voltage (II/2)	1000 V
Rated surge voltage (II/2)	6 kV
Rated current	12 A
Legend (ratings)	(III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2

### Ratings per UL 1059

Approvals per	UL 1059
Rated voltage UL (Use Group B)	300 V
Rated current UL (Use Group B)	10 A
Rated voltage UL (Use Group D)	300 V
Rated current UL (Use Group D)	10 A

### Ratings per UL 1977

Rated voltage (UL 1977)	600 V
Rated current UL 1977	10 A

### Ratings per CSA

Approvals per	CSA
Rated voltage CSA (Use Group B)	300 V
Rated current CSA (Use Group B)	10 A
Rated voltage CSA (Use Group D)	300 V
Rated current CSA (Use Group D)	10 A

### Connection data

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

Subject to changes. Please also observe the further product documentation!



## Connection 1

Pole number	9
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## Physical data

Pin spacing	7.5 mm / 0.295 inches
Width	68.2 mm / 2.685 inches
Height	14.4 mm / 0.567 inches
Height from the surface	12 mm / 0.472 inches
Depth	8.4 mm / 0.331 inches
Solder pin length	2.4 mm
Solder pin dimensions	1 x 1 mm
Plated through-hole diameter (THR)	1.4 <sup>(+0.1)</sup> mm
Reel diameter of tape-and-reel packaging	330 mm
Tape width	88 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
Mismatching protection	No
Plugging without loss of pin spacing	No
Mating direction to the PCB	90 °
Locking of plug-in connection	none

## PCB contact

PCB contact	THR
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
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Subject to changes. Please also observe the further product documentation!



Color	black
Material group	I
Insulation material	Polyphthalamide (PPA GF)
Flammability class per UL94	V0
Contact material	Electrolytic copper (E <sub>Cu</sub> )
Contact plating	Tin
Weight	3 g
MSL gemäß J-STD 020D	1

### Environmental requirements

Limit temperature range	-60 ... +100 °C
Processing temperature	-35 ... +60 °C

### Commercial data


eCl@ss 10.0	27-44-04-02
eCl@ss 9.0	27-44-04-02
ETIM 8.0	EC002637
ETIM 7.0	EC002637
PU (SPU)	170 pcs
Packaging type	bag
Country of origin	DE
GTIN	4055143474825
Customs tariff number	85366990990

### Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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### Approvals / Certificates

#### General approvals

Logo	Approval	Additional Approval Text	Certificate name
	CSA DEKRA Certification B.V.	C22.2	1466354
	UR Underwriters Laboratories Inc.	UL 1059	E45172

Subject to changes. Please also observe the further product documentation!



## Counterpart



Item no. 231-209/026-000

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 7.5 mm; 9-pole; 2,50 mm²; gray

[www.wago.com/231-209/026-000](http://www.wago.com/231-209/026-000)

## Optional accessories

### Coding

Intermediate plate



Item no.: 231-500

Spacer; for formation of groups; light gray

[www.wago.com/231-500](http://www.wago.com/231-500)

## Downloads

### Documentation

#### Additional Information

Technical Section	2019 Apr 3	pdf 2.0 MB	Download
Technical explanations			
THR Soldering Process		pdf 548.2 kB	Download

## CAD/CAE-Data

### CAD data

2D/3D Models 231-239/001-000/105-604/997-409	URL	Download
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## Environmental Product Compliance

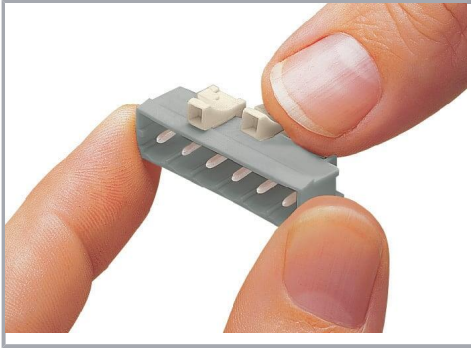
### Compliance Search

Environmental Product Compliance 231-239/001-000/105-604/997-409	URL	Download
THR male header; 1.0 x 1.0 mm solder pin; straight; in tape-and-reel packaging; Pin spacing 7.5 mm; 9-pole; black		

Subject to changes. Please also observe the further product documentation!

## Installation Notes

### Coding



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

### Product family

**MCS MIDI Classic**

[Show all products from the family](#)

Subject to changes. Please also observe the further product documentation!