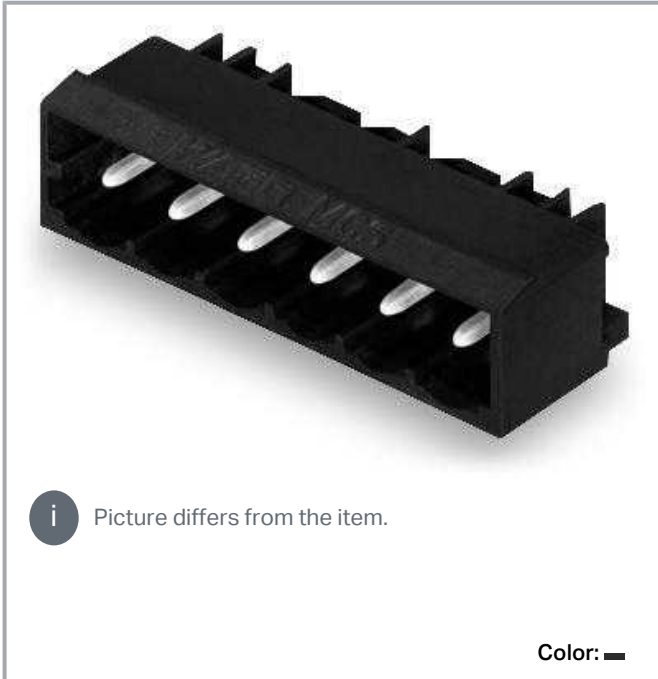


Data sheet | Item number: 231-440/001-000/105-604

Male header; 10-pole; THR; 1.0 x 1.0 mm solder pin; angled; pin spacing 5 mm; black



[www.wago.com/231-440\\_001-000\\_105-604](http://www.wago.com/231-440_001-000_105-604)



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

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Email: [info.us@wago.com](mailto:info.us@wago.com) | Web: [www.wago.us](http://www.wago.us)

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Dimensions in mm

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

$$L_1 = L + 4.8 \text{ mm}$$

$$L_2 = L_1 + 7.2 \text{ mm}$$

### 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

—  
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- With coding fingers

## Data

### Notes

#### Safety information 1

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. 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/>

## Electrical data

### IEC Approvals

Ratings per	IEC/EN 60664-1
Rated voltage (III / 3)	320 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Nominal voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV
Rated current	12 A
Legend (ratings)	(III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2

### UL Approvals

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

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

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## CSA Approvals

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	10
Number of connection types	1
Number of levels	1

## Connection 1

Number of poles	10
-----------------	----

## Physical data

Pin spacing	5 mm / 0.197 inch
Width	53.2 mm / 2.094 inch
Height	10.8 mm / 0.425 inch
Height from the surface	8.4 mm / 0.331 inch
Depth	12 mm / 0.472 inch
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

## 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	Without

## PCB contact

PCB Contact	THR
Solder pin arrangement	over the entire male connector (in-line)

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

Number of solder pins per potential	1
-------------------------------------	---

### Material data

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-plated
Fire load	0.071 MJ
Weight	3.7 g

### Environmental requirements


Limit temperature range	-60 ... +100 °C
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### Commercial data

Product Group	3 (Multi Conn. System)
PU (SPU)	100 Stück
Packaging type	box
Country of origin	PL
GTIN	4017332745970
Customs tariff number	85366990990

### Approvals / Certificates

#### Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	<b>CB</b> DEKRA Certification B.V.	IEC 61984	NL-39756
	<b>CSA</b> DEKRA Certification B.V.	C22.2	LR 18677-25

#### Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	<b>ABS</b>	-	19-



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



American Bureau of Shipping

HG1869876-PDA

### UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL Underwriters Laboratories Inc.	UL 1059	E45172
	UR Underwriters Laboratories Inc.	UL 1977	E45171

### Counterpart



Item no. 231-110/026-000

Female plug; 10-pole; 12 AWG max; pin spacing 5 mm; 1 conductor per pole; gray

[www.wago.com/231-110/026-000](http://www.wago.com/231-110/026-000)

### 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)

Coding



Item no.: 231-129

Coding key; snap-on type; light gray

[www.wago.com/231-129](http://www.wago.com/231-129)

### Downloads

#### Documentation

#### Additional Information

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

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

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## CAD files

### CAE data

EPLAN Data Portal 231-440/001-000/105-604	URL	Download
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### PCB Design

Symbol and Footprint 231-440/001-000/105-604	URL	Download
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CAX data for your PCB design, consisting of "schematic symbols and PCB footprints", allow easy integration of the WAGO component into your development environment.

### Supported formats:

- Accel EDA 14 & 15
- Altium 6 to current version
- Cadence Allegro
- DesignSpark
- Eagle Libraries
- KiCad
- Mentor Graphics BoardStation
- Mentor Graphics Design Architect
- Mentor Graphics Design Expedition 99 and 2000
- OrCAD 9.X PCB and Capture
- PADS PowerPCB 3, 3.5, 4.X, and 5.X
- PADS PowerPCB and PowerLogic 3.0
- PCAD 2000, 2001, 2002, 2004, and 2006
- Pulsonix 8.5 or newer
- STL
- 3D STEP
- TARGET 3001!
- View Logic ViewDraw
- Quadcept
- Zuken CadStar 3 and 4
- Zuken CR-5000 and CR-8000

PCB Component Libraries (EDA), PCB CAD Library Ultra Librarian

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## Environmental Product Compliance

### Compliance Search

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

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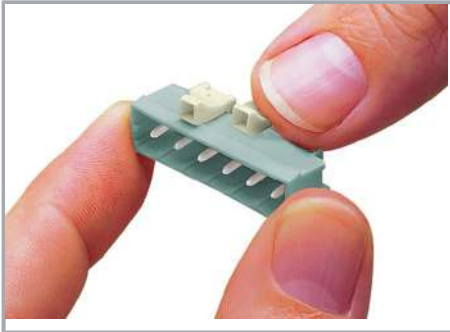
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Environmental Product Compliance 231-440/001-000/105-604

THR male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 10-pole; black

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## Installation Notes



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

## Product family

**MCS MIDI Classic**

[Show all products from the family](#)

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