

#### Weidmüller Interfaces GmbH & Co. KG

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#### **Product image**





### **OMNIMATE<sup>®</sup> 4.0 - the next evolution step**

OMNIMATE<sup>®</sup> 4.0 follows the trend of One Cable Technology (OCT). The modular concept enables the fast configuration of hybrid interfaces, which transmit data, signals and energy in a single connector. As a result, you can reduce the cabling effort in a wide variety of applications, simplify maintenance and accelerate automation processes. The unique SNAP IN connection is the backbone and speeds up the wiring process.

#### The fastest connection yet

- Fast, safe, and tool-free wiring due to unique SNAP IN connection
- Ready for Robot through "wire ready" delivery with open clamping point
- · Optical and acoustic feedback indicates proper wiring

#### **Create your own configuration**

- Flexible configuration and ordering via the Weidmüller Configurator (WMC)
- Dispatch within three days even for individually configured products
- Automatic offer preparation for the configurated product

# Simply configuration of modular hybrid connectors

- Flexible combination options for power, signal and data transmission
- Future-proof Single-Pair Ethernet technology

#### General ordering data

Version	PCB plug-in connector, male header, THT/THR solder connection, Pitch in mm (P): 5.00 mm, Number of poles: 7, 90°, Tube
Order No.	<u>2741460000</u>
Туре	MHS 5/07 H T3 B T
GTIN (EAN)	4064675055433
Qty.	15 pc(s).
Product data	IEC: 400 V / 26.8 A UL: 300 V / 14 A
Packaging	Tube

# **Technical data**



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#### **Dimensions and weights**

Depth	14 mm	Depth (inches)	www.weidmueᢔeᢓᢆᢒdninch
Height	15.1 mm	Height (inches)	0.594 inch
Height of lowest version	11.9 mm	Width	36.38 mm
Width (inches)	1.432 inch	Net weight	2.93 g

#### **System specifications**

Type of connection		Mounting onto the PCB	THT/THR solder
	Board connection		connection
Pitch in mm (P)	5 mm	Pitch in inches (P)	0.197 inch
Outgoing elbow	90°	Number of poles	7
Number of solder pins per pole	1	Solder pin length (I)	3.2 mm
Solder pin dimensions	1.0 x 1.0 mm	Solder eyelet hole diameter (D)	1.4 mm
Solder eyelet hole diameter tolerand	e (D)+ 0,1 mm	Outside diameter of solder pad	2.3 mm
Template aperture diameter	2.1 mm	L1 in mm	30 mm
L1 in inches	1.181 inch	Number of rows	1
Pin series quantity	1	Touch-safe protection acc. to DIN VDE 57 106	Touch-safe above the printed circuit board
Touch-safe protection acc. to DIN VI	DE	Protection degree	
0470	IP 20	-	IP20
Volume resistance	≤5 mΩ	Plugging cycles	≥ 25
Plugging force/pole, max.	8.5 N	Pulling force/pole, max.	8.5 N

#### **Material data**

Insulating material	PA 9T	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	I
Comparative Tracking Index (CTI)	≥ 600	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact base material	CuMg
Contact material	CuMg	Contact surface	tinned
Tinning type	matt	Storage temperature, min.	-25 °C
Storage temperature, max.	55 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C		

#### Rated data acc. to IEC

tested	200	to	stand	href

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	26.8 A
Rated current, max. number of poles (Tu=20°C)	19.7 A	Rated current, min. number of poles (Tu=40°C)	23.1 A
Rated current, max. number of poles (Tu=40°C)	16.9 A	Rated voltage for surge voltage class / pollution degree II/2	400 V
Rated voltage for surge voltage class / pollution degree III/2	320 V	Rated voltage for surge voltage class / pollution degree III/3	250 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	4 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	4 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	4 kV	Clearance, min.	4 mm
Creepage distance, min.	5.4 mm		

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#### Rated data acc. to UL 1059

Institute (cURus)	c <b>R</b> us
Rated voltage (Use group B / UL 1059)	300 V
Rated current (Use group B / UL 1059)	14 A
Reference to approval values	Specifications are

maximum values, details see approval certificate.

Certificate No. (cURus) www.weidmueller.com

	E60693
Rated voltage (Use group D / UL 1059)	300 V
Rated current (Use group D / UL 1059)	10 A

#### Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	EC002637	ECLASS 9.0	27-44-04-02
ECLASS 9.1	27-44-04-02	ECLASS 10.0	27-44-04-02
ECLASS 11.0	27-46-02-01	ECLASS 12.0	27-46-02-01

#### Important note

IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.
Notes	Rated current related to rated cross-section & min. No. of poles.
	• P on drawing = pitch

· Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.

• Diameter of solder eyelet D = 1.4+0.1mm

• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

#### Approvals

Approvals	c <b>FL</b> us	
UL File Number Search	UL Website	
Certificate No. (cURus)	E60693	
Downloads		
Engineering Data	CAD data – STEP	
Product Change Notification	20210526 Technical change to MPS 5 and MHS 5 H 20210526 Technische Änderung zu MPS 5 und MHS 5 H	
Catalogues	Catalogues in PDF-format	

# Drawings



#### Weidmüller Interfaces GmbH & Co. KG

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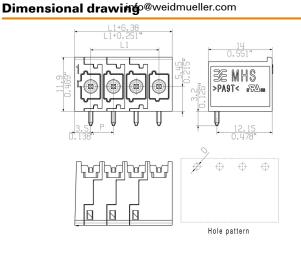
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#### **Product image**



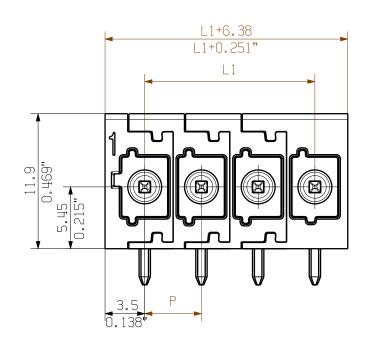


Creation date September 18, 2022 2:00:15 AM CEST

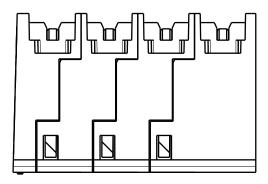
Catalogue status 09.09.2022 / We reserve the right to make technical changes.

#### Dimensions without tolerances are no check dimensions

## Allgemeingueltige Kundenzeic General customer drawin









For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components  $% \left( {\left[ {{{\rm{T}}_{\rm{T}}} \right]_{\rm{T}}} \right)$ alone.

The neccessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmueller PCB components are tested according to the DIN EN 61984 or to the DIN EN 60947-7-4 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occuring of electrical, mechanical, thermic and corrosive stress will be satisfied.

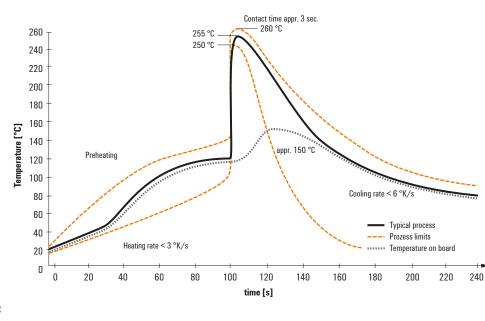
# Wave Solder Profile

### **Recommended wave solderding profiles**

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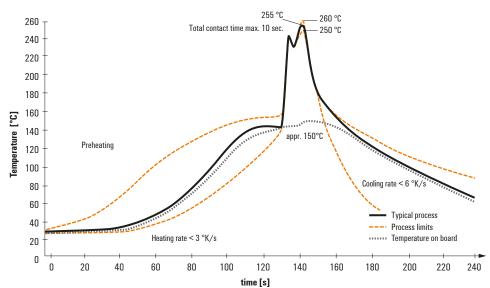
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**Double Wave:** 

Single Wave:



#### Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

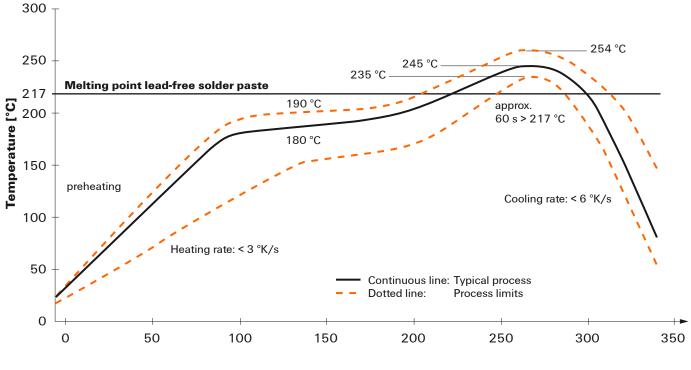
# **Reflow Solder Profile**

### **Recommended reflow soldering profile**



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Time [sec]

#### **Reflow soldering profile**

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- · Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically  $\leq +3$ K/s. In parallel the solder paste is ,activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at  $\geq$  -6K/s solder is cured. Board and components cool down while avoiding cold cracks.

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 PVP02-5,00

 PVP03-3,50
 PVP04-3,50
 PVS02-5,00
 1-1986160-3
 1377680000
 1531000000
 1546228-5
 ELFP03110
 ELFP10210
 ELVP03100
 1700101

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