

**RJ45M R1D 3.3E4G/Y RL****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com



RJ45 transmitter sockets (magnetics) for gigabit applications (1000 base-T) with integrated compensation actively counteracts inductive and capacitive couplings and saves space on the PCB.

The product range encompasses the following designs:

- 90°, lying (horizontal) and 180°, standing (vertical)
- latch up / latch down
- THT, THR or SMD soldering processes
- Wide range of different design types, also with integrated LEDs and shield contact tabs
- Transmission rates of up to 1 Gbps
- Packed either in a tray (TY) or on a roll (tape-on-reel, RL)
- Compatible with modular RJ45 connector according to ANSI / TIA-1096-A and IEC 60603
- Dielectric strength  $\geq 1500$  V AC RMS (2250 V AC peak value) according to IEEE 802.3
- Dielectric strength  $\geq 1500$  V AC (peak value) or  $\geq 1500$  V DC according to IEC 60603
- Compliance with IEEE 802.3 requirements (1000Base-T, 1 Gbps, IEEE 802.3ab or 100Base-Tx, 100 Mbps, IEEE 802.3u)

Properties and advantages:

- Extended temperature range of  $-40$  °C to  $+85$  °C for maximum performance
- Reinforced gold layer ( $30\mu$ ) for improved corrosion protection

- At least 0.3mm stand-off ensures a perfect soldering result

**General ordering data**

|            |   |
|------------|---|
| Version    | PCB plug-in connector, RJ45 jacks transformer, 10/100 MBit/s , THT/THR solder connection, 90°, Latch option: bottom, Shield tabs: 6 tabs, 30...80 $\mu$ Ni / $\geq 30$ $\mu$ Au , LED: Yes, green, yellow, Number of poles: 8, Tape |
| Order No.  | <a href="#">2564410000</a>  |
| Type       | RJ45M R1D 3.3E4G/Y RL   |
| GTIN (EAN) | 4050118572902   |
| Qty.       | 200 pc(s).  |
| Packaging  | Tape  |

## RJ45M R1D 3.3E4G/Y RL

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Technical data

## Dimensions and weights

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Depth                    | 21.35 mm   | Depth (inches)  | 0.841 inch |
| Height                   | 16.8 mm    | Height (inches) | 0.661 inch |
| Height of lowest version | 13.5 mm    | Width           | 15.9 mm    |
| Width (inches)           | 0.626 inch | Net weight      | 0.001 g    |

## System specifications

|                                  |                   |                                |  |
|----------------------------------|-------------------|--------------------------------|--|
| Colour of left LED               | green             | Colour of right LED            | yellow   |
| Forward current                  | 20 mA             | Forward voltage, max.          | 2.6 V  |
| Forward voltage, min.            | 1.8 V             | LED                            | Yes  |
| Latch option                     | bottom            | Mounting onto the PCB          | THT/THR solder connection                          |
| Number of poles                  | 8                 | Number of solder pins per pole | 1  |
| Outgoing elbow                   | 90°               | Performance-Category           | 10/100 MBit/s                                      |
| Pitch in inches (P)              | 0.05 "            | Pitch in mm (P)                | 1.27 mm  |
| Plugging cycles                  | 750               | Product family                 | OMNIMATE Data - RJ45 transformer jack              |
| Protection degree                | IP20              | Shield surface                 | nickel-plated                                      |
| Shield tabs                      | 6 tabs            | Shielding                      | Yes  |
| Shielding material               | Brass             | Solder pin dimensions          | Octagonal  |
| Solder pin length (l)            | 3.3 mm            | Soldering process              | Reflow soldering, Manual soldering, Wave soldering |
| Tolerance of solder pin position | ± 0.1 mm          | Transmission rate              | 10/100 MBit/s                                      |
| Type of connection               | Solder connection |                                |  |

## Electrical properties

|  |           |                                       |           |
|--|-----------|---------------------------------------|-----------|
| Dielectric strength, contact / contact | 1000 V DC | Dielectric strength, contact / shield | 1500 V DC |
| Rated current                          | 1.5 A     | Rated voltage                         | 125 V     |

## Material data

|                                  |                            |                             |                   |
|----------------------------------|----------------------------|-----------------------------|-------------------|
| Insulating material              | PA 9T                      | Colour                      | black             |
| Colour chart (similar)           | RAL 9011                   | Insulating material group   | II                |
| Comparative Tracking Index (CTI) | ≥ 500                      | Moisture Level (MSL)        | 1                 |
| UL 94 flammability rating        | V-0                        | Contact base material       | Phosphorus bronze |
| Contact material                 | Cu-alloy                   | Contact surface             | Gold over nickel  |
| Layer structure of plug contact  | 30...80 µ" Ni / ≥ 30 µ" Au | Storage temperature, min.   | -40 °C            |
| Storage temperature, max.        | 85 °C                      | Operating temperature, min. | -40 °C            |
| Operating temperature, max.      | 85 °C                      |                             |                   |

## Packing

|                          |        |                    |   |
|--------------------------|--------|--------------------|---|
| Packaging                | Tape   | VPE length         | 345 mm                                    |
| VPE width                | 345 mm | VPE height         | 125 mm                                    |
| Tape reel diameter Ø (A) | 330 mm | Surface resistance | Rs = 10 <sup>9</sup> - 10 <sup>12</sup> Ω |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002637    | ETIM 7.0    | EC002637    |
| ETIM 8.0    | EC002637    | ETIM 9.0    | 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 | ECLASS 13.0 | 27-46-02-01 |

## RJ45M R1D 3.3E4G/Y RL

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany

[www.weidmueller.com](http://www.weidmueller.com)

# Technical data

## Approvals

|      |         |
|------|---------|
| ROHS | Conform |
|------|---------|

## Downloads

|  |   |
|--|---|
| Approval/Certificate/Document of Con-<br>formity | <a href="#">Certificate of Compliance</a> |
| Catalogues                                       | <a href="#">Catalogues in PDF-format</a>  |

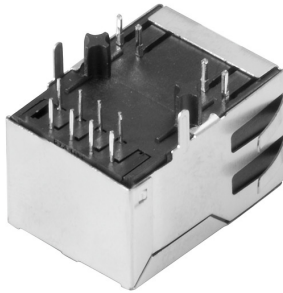
## RJ45M R1D 3.3E4G/Y RL

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

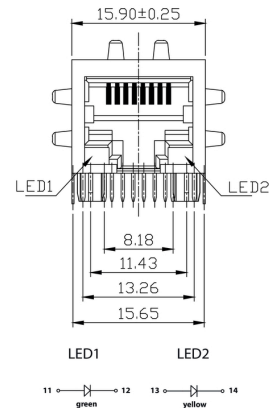
[www.weidmueller.com](http://www.weidmueller.com)

## Drawings

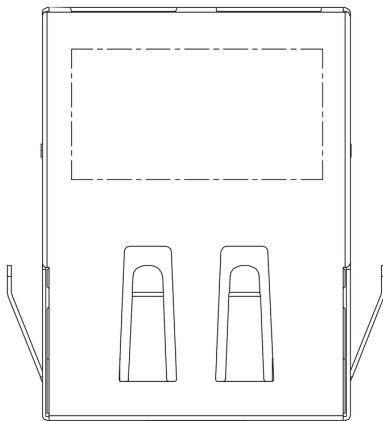
## Dimensioned drawing



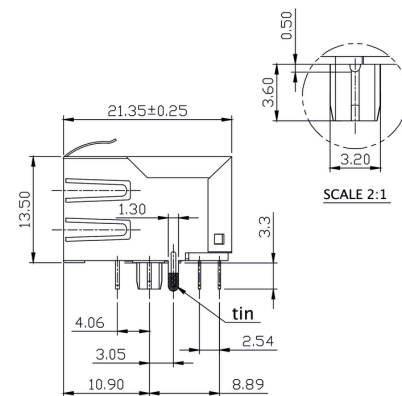
## Dimensioned drawing



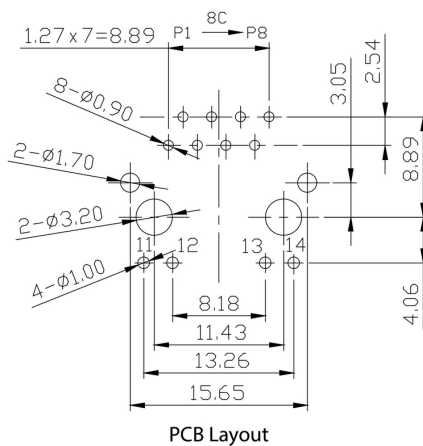
## Dimensioned drawing



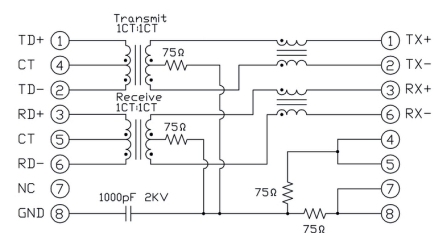
## Dimensioned drawing



## PCB design



## Wiring diagram



**RJ45M R1D 3.3E4G/Y RL****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Drawings**

|      |    |   |   |   |     |   |   |       |    |                          |
|------|----|---|---|---|-----|---|---|-------|----|--------------------------|
| RJ45 | G1 | R | 1 | U | 3.2 | E | 4 | GY/GY | TY | RJ45G1 R1U 3.2E4GY/GY TY |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |
|      |    |   |   |   |     |   |   |       |    |                          |

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 16  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
[www.weidmueller.com](http://www.weidmueller.com)

### Single Wave:



### Double 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.

We reserve the right to make technical changes.

## Recommended reflow soldering profile

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

D-32758 Detmold

Germany

Fon: +49 5231 14-0

Fax: +49 5231 14-292083

www.weidmueller.com



## 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  $\leq +3\text{K/s}$ . 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  $\geq -6\text{K/s}$  solder is cured. Board and components cool down while avoiding cold cracks.