

TTMM-202 SERIES PDU

Technical Specifications

Input	Input Protections
1x HAN®16E 16A 230V 16P, 8ch (Harting)	-

Outputs	Outputs Protections
8x Auxiliary connector 230V 3P (Optional)	-
1x HAN®16E 16A 230V 16P, 8ch (Harting) (Optional, depending on product version)	-

Additional Functionalities

- **Indicator LEDs**
 - 8x Phase presence indicator green LED (Optional, depending on model version)

Mechanical & Electrical Design

- **Ingress Protection:** IP65-rated enclosure; completely dust-tight and protected against low-pressure water jets from any direction. Suitable for both indoor and outdoor environments, including demanding field applications where high durability and weather resistance are essential.
- **Enclosure Material:** Constructed from 2.0 mm powder-coated aluminium sheet with a fine-textured finish. This robust material offers excellent mechanical strength, corrosion resistance, and long-term performance in demanding field conditions.
- **Overall Dimensions:** 95 x 370 x 155 in mm (Height × Width × Depth).
- **Labeling:** All connectors and protective devices are identified with UV-printed markings. UV printing ensures resistance to environmental degradation, including UV exposure and solvent-based cleaning agents.
- **Mounting Options:** The unit features integrated mounting points to support a wide range of installation methods.
 - Top Panel: One M10 slot for clamp mounting and two M8 threaded inserts for eye bolts, suitable for suspended use with steel cables, ropes, or quick-tie fasteners.
 - Bottom Panel: One M10 slot for clamp-based vertical fixation.
 - Rear Panel: One additional M10 slot for wall or scaffold mounting.
 - M10 clamp slots are compatible with pipe diameters between 35–51 mm, providing stable and adjustable positioning. The included rubber washers allow for angled mounting, increasing flexibility in complex setups.

- **Connector Installation:** Equipped with Quick Connector Replacement (QCR) system. Connectors are mounted with two or four stainless steel screws and sufficient internal cable slack to enable replacement without disassembling the entire enclosure.
- **Internal Conductor Cross-Sections:**
 - 16A circuits: 2.5 mm² (Cu)
- **Wiring and Components:**
 - Internal cabling: Helukabel flexible conductors, H07V-K or equivalent.
 - Terminal blocks: Wago spring-cage terminals

Electrical Specifications

- Number of channels: 8
- Parameters per channel:
 - Rated voltage (U_n): 230 V AC, 1P+N+PE
 - Rated current (I_{nA}): 16 A
 - Frequency per (f_n): 50/60 Hz
 - Maximum continuous load: 3.68 kVA* (3.68 kW at $\cos\phi = 1$)
- Rated diversity factor with using the loop output (RDF_1): 0.5
- Rated diversity factor without using the loop output (RDF_2): 1
- Protection class: Class I (protective earth)

*At 30°C ambient air temperature

Environmental Ratings

- Operating temperature: -5 °C to +40 °C, with the average ambient temperature over a 24-hour period not exceeding 35 °C, (in accordance with IEC/EN 61439 recommendations)
- Storage temperature: 0 °C to +40 °C
- Relative humidity: Maximum 95% at ambient temperatures from -5 °C to 30 °C, decreasing to 70% at 35 °C and 57% at 40 °C, non-condensing (in accordance with IEC/EN 61439 recommendations)
- Maximum installation altitude: ≤2000 m above sea level

Auxiliary Connector Options

The following configurations are available for auxiliary connectors:

Code	Type	Rated Current	IP Code**	Manufacturer
F1	German / Austrian (Type F)	16A	IP54	Mennekes
F2	German / Austrian with gasket (Type F)	16A	IP54	Mennekes

Code	Type	Rated Current	IP Code**	Manufacturer
E1	French / Belgian (Type E)	16A	IP44	Mennekes
G1	British (Type G)	13A	IP44	ABL
P1	powerCON® TRUE1 with sealing self-closing cap	16A	IP65	Neutrik
J1	Swiss T13 (Type J)	10A	IP54	PCE
J2	Swiss T23 (Type J)	16A	IP54	PCE
B1	USA / Canada (Type B)	15A	IP44	ABL
K1	Danish (Type K)	16A	IP44	PCE
CE	CEE 6h	16A	IP54	Mennekes

**The stated IP rating applies when all enclosure lids and covers are fully closed. When connectors are mated, the overall ingress protection level may vary depending on the IP rating of the connected plugs. Users should ensure that all connected components maintain appropriate protection levels for the intended environment.

Ordering Information

The TTMM-202 Series follows a structured ordering code based on four configurable parameters: loop output, auxiliary connector, phase indicator, and dust cap. Each code reflects a specific hardware setup, where:

- **Loop Options:** *Looped* means the unit includes a looped HAN®16E output; *No loop* means the unit does not.
- **Auxiliary Connector:** Refers to the connector type and color selected.
- **Phase Indicator:** *Yes* means each output is equipped with a phase presence indicator LED; *No* means outputs are without LEDs.
- **Dust Cap:** *No* = no dust cap; *Female* = dust cap on female HAN®16E; *Male* = dust cap on male HAN®16E; *Both* = dust caps on both male and female connectors.

Refer to the product section for visual references and configuration codes.

Ordering Code	Loop Options	Auxiliary Connector	Phase Indicator	Dust Cap
TTMM-202-LO-F1-X-N	Looped	F1, black	No	No
TTMM-202-LO-F1-X-F	Looped	F1, black	No	Female
TTMM-202-LO-F1-X-B	Looped	F1, black	No	Both
TTMM-202-LO-F1-I-N	Looped	F1, black	Yes	No
TTMM-202-LO-F1-I-F	Looped	F1, black	Yes	Female
TTMM-202-LO-F1-I-B	Looped	F1, black	Yes	Both
TTMM-202-LO-F2-X-N	Looped	F2, black	No	No
TTMM-202-LO-F2-X-F	Looped	F2, black	No	Female
TTMM-202-LO-F2-X-B	Looped	F2, black	No	Both

Ordering Code	Loop Options	Auxiliary Connector	Phase Indicator	Dust Cap
TTMM-202-LO-F2-I-N	Looped	F2, black	Yes	No
TTMM-202-LO-F2-I-F	Looped	F2, black	Yes	Female
TTMM-202-LO-F2-I-B	Looped	F2, black	Yes	Both
TTMM-202-LO-E1-X-N	Looped	E1, black	No	No
TTMM-202-LO-E1-X-F	Looped	E1, black	No	Female
TTMM-202-LO-E1-X-B	Looped	E1, black	No	Both
TTMM-202-LO-E1-I-N	Looped	E1, black	Yes	No
TTMM-202-LO-E1-I-F	Looped	E1, black	Yes	Female
TTMM-202-LO-E1-I-B	Looped	E1, black	Yes	Both
TTMM-202-LO-G1-X-N	Looped	G1, black	No	No
TTMM-202-LO-G1-X-F	Looped	G1, black	No	Female
TTMM-202-LO-G1-X-B	Looped	G1, black	No	Both
TTMM-202-LO-G1-I-N	Looped	G1, black	Yes	No
TTMM-202-LO-G1-I-F	Looped	G1, black	Yes	Female
TTMM-202-LO-G1-I-B	Looped	G1, black	Yes	Both
TTMM-202-LO-P1-X-N	Looped	P1, black	No	No
TTMM-202-LO-P1-X-F	Looped	P1, black	No	Female
TTMM-202-LO-P1-X-B	Looped	P1, black	No	Both
TTMM-202-LO-P1-I-N	Looped	P1, black	Yes	No
TTMM-202-LO-P1-I-F	Looped	P1, black	Yes	Female
TTMM-202-LO-P1-I-B	Looped	P1, black	Yes	Both
TTMM-202-LO-J1-X-N	Looped	J1, black with blue lid	No	No
TTMM-202-LO-J1-X-F	Looped	J1, black with blue lid	No	Female
TTMM-202-LO-J1-X-B	Looped	J1, black with blue lid	No	Both
TTMM-202-LO-J1-I-N	Looped	J1, black with blue lid	Yes	No
TTMM-202-LO-J1-I-F	Looped	J1, black with blue lid	Yes	Female
TTMM-202-LO-J1-I-B	Looped	J1, black with blue lid	Yes	Both
TTMM-202-LO-J2-X-N	Looped	J2, black with blue lid	No	No
TTMM-202-LO-J2-X-F	Looped	J2, black with blue lid	No	Female
TTMM-202-LO-J2-X-B	Looped	J2, black with blue lid	No	Both
TTMM-202-LO-J2-I-N	Looped	J2, black with blue lid	Yes	No
TTMM-202-LO-J2-I-F	Looped	J2, black with blue lid	Yes	Female
TTMM-202-LO-J2-I-B	Looped	J2, black with blue lid	Yes	Both
TTMM-202-LO-B1-X-N	Looped	B1, black	No	No
TTMM-202-LO-B1-X-F	Looped	B1, black	No	Female
TTMM-202-LO-B1-X-B	Looped	B1, black	No	Both
TTMM-202-LO-B1-I-N	Looped	B1, black	Yes	No
TTMM-202-LO-B1-I-F	Looped	B1, black	Yes	Female

Ordering Code	Loop Options	Auxiliary Connector	Phase Indicator	Dust Cap
TTMM-202-LO-B1-I-B	Looped	B1, black	Yes	Both
TTMM-202-LO-K1-X-N	Looped	K1, black	No	No
TTMM-202-LO-K1-X-F	Looped	K1, black	No	Female
TTMM-202-LO-K1-X-B	Looped	K1, black	No	Both
TTMM-202-LO-K1-I-N	Looped	K1, black	Yes	No
TTMM-202-LO-K1-I-F	Looped	K1, black	Yes	Female
TTMM-202-LO-K1-I-B	Looped	K1, black	Yes	Both
TTMM-202-LO-CE-X-N	Looped	CE, black	No	No
TTMM-202-LO-CE-X-F	Looped	CE, black	No	Female
TTMM-202-LO-CE-X-B	Looped	CE, black	No	Both
TTMM-202-LO-CE-I-N	Looped	CE, black	Yes	No
TTMM-202-LO-CE-I-F	Looped	CE, black	Yes	Female
TTMM-202-LO-CE-I-B	Looped	CE, black	Yes	Both
TTMM-202-NL-F1-X-N	No loop	F1, black	No	No
TTMM-202-NL-F1-X-M	No loop	F1, black	No	Male
TTMM-202-NL-F1-I-N	No loop	F1, black	Yes	No
TTMM-202-NL-F1-I-M	No loop	F1, black	Yes	Male
TTMM-202-NL-F2-X-N	No loop	F2, black	No	No
TTMM-202-NL-F2-X-M	No loop	F2, black	No	Male
TTMM-202-NL-F2-I-N	No loop	F2, black	Yes	No
TTMM-202-NL-F2-I-M	No loop	F2, black	Yes	Male
TTMM-202-NL-E1-X-N	No loop	E1, black	No	No
TTMM-202-NL-E1-X-M	No loop	E1, black	No	Male
TTMM-202-NL-E1-I-N	No loop	E1, black	Yes	No
TTMM-202-NL-E1-I-M	No loop	E1, black	Yes	Male
TTMM-202-NL-G1-X-N	No loop	G1, black	No	No
TTMM-202-NL-G1-X-M	No loop	G1, black	No	Male
TTMM-202-NL-G1-I-N	No loop	G1, black	Yes	No
TTMM-202-NL-G1-I-M	No loop	G1, black	Yes	Male
TTMM-202-NL-P1-X-N	No loop	P1, black	No	No
TTMM-202-NL-P1-X-M	No loop	P1, black	No	Male
TTMM-202-NL-P1-I-N	No loop	P1, black	Yes	No
TTMM-202-NL-P1-I-M	No loop	P1, black	Yes	Male
TTMM-202-NL-J1-X-N	No loop	J1, black with blue lid	No	No
TTMM-202-NL-J1-X-M	No loop	J1, black with blue lid	No	Male
TTMM-202-NL-J1-I-N	No loop	J1, black with blue lid	Yes	No
TTMM-202-NL-J1-I-M	No loop	J1, black with blue lid	Yes	Male
TTMM-202-NL-J2-X-N	No loop	J2, black with blue lid	No	No

Ordering Code	Loop Options	Auxiliary Connector	Phase Indicator	Dust Cap
TTMM-202-NL-J2-X-M	No loop	J2, black with blue lid	No	Male
TTMM-202-NL-J2-I-N	No loop	J2, black with blue lid	Yes	No
TTMM-202-NL-J2-I-M	No loop	J2, black with blue lid	Yes	Male
TTMM-202-NL-B1-X-N	No loop	B1, black	No	No
TTMM-202-NL-B1-X-M	No loop	B1, black	No	Male
TTMM-202-NL-B1-I-N	No loop	B1, black	Yes	No
TTMM-202-NL-B1-I-M	No loop	B1, black	Yes	Male
TTMM-202-NL-K1-X-N	No loop	K1, black	No	No
TTMM-202-NL-K1-X-M	No loop	K1, black	No	Male
TTMM-202-NL-K1-I-N	No loop	K1, black	Yes	No
TTMM-202-NL-K1-I-M	No loop	K1, black	Yes	Male
TTMM-202-NL-CE-X-N	No loop	CE, black	No	No
TTMM-202-NL-CE-X-M	No loop	CE, black	No	Male
TTMM-202-NL-CE-I-N	No loop	CE, black	Yes	No
TTMM-202-NL-CE-I-M	No loop	CE, black	Yes	Male

Certifications & Standards

- **CE Compliance:** All components and final assemblies are CE certified, conforming to the requirements of applicable European directives, including the Low Voltage Directive (2014/35/EU) and the EMC Directive (2014/30/EU).
- **Standards Compliance:** Designed in accordance with the following international standards:
 - EN 61439-1: Low-voltage switchgear and controlgear assemblies – General rules.
 - EN 61439-4: Assemblies for construction sites (ACS).
- **Manufacturer Information:**
 Designed and manufactured by:
 Tesla Entertainment Kft.
 Address: H-1151 Budapest, Károlyi Sándor út 158.; Hungary
 EU VAT ID: HU26587255
- **Country of Origin:** Hungary; all units are assembled and tested at our facility in Budapest.

Safety Notice

- This device must be installed, operated, and maintained by qualified personnel only. Internal components may carry live voltage during operation. Maintenance tasks, including connector replacement, must only be carried out with the power supply fully disconnected/isolated.
- All safety guidelines, installation procedures, and maintenance instructions are provided in the product's user manual. Please read and follow them carefully to ensure safe and correct operation.

- For full warranty terms and legal information, please refer to our General Terms and Conditions available at: <https://TeslaTech.GmbH/GTCS>

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