

Description

PowerPlex® Keypads are compact **PowerPlex®** operating units for DC 12 V and DC 24 V applications. Each individual key is freely configurable. A range of versatile colouring of the individual keys is available. The key symbols are provided by means of slide-in foils.

PowerPlex® is a decentralized electrical power distribution system. All **PowerPlex®** Modules ensure, alone or in combination with other **PowerPlex®** components, reliable control and monitoring of all installed electrical devices and functions. They protect loads and harness against overcurrent. In addition the modules are used to collect sensor data from level and temperature sensors as well as shunt resistors. Outputs for dimming of electrical loads are also available.

All modules of a **PowerPlex®** system are communicating via CAN bus using a SAE J1939 based protocol. **PowerPlex®** can be configured directly by the vehicle manufacturer using the **PowerPlex®** Configuration Software on a standard PC. The configuration is transferred to the modules via the CAN bus using a USB/CAN adapter.

Typical applications

- Buses, special vehicles, mobile homes etc.
- Watercraft, e.g. leisure boats, workboats

Features and Benefits

- Compact and light-weight design
- Freely configurable control of electrical loads
- Protection against overload, short circuit and reverse polarity
- LED backlighting of keys
- Status monitoring by means of configurable LED colour change of the keys
- User-defined key legends through slide-in foils
- Dimming optional, e.g. for energy-saving or night operation
- Chemical resistance against various agents

Part numbers:

- Series-100 – only keys

part number	keypad version
PP-M-KP100-02-000	2-way
PP-M-KP100-06-000	6-way
PP-M-KP100-08-000	8-way

- Series-200 – keys and 7-segment display

part number	keypad version
PP-M-KP200-15-000	15-way

Approvals

Approval authority	Standard	Rated voltage
KBA	ECE regulation No. 10 (E1)	DC 12 V
		DC 24 V

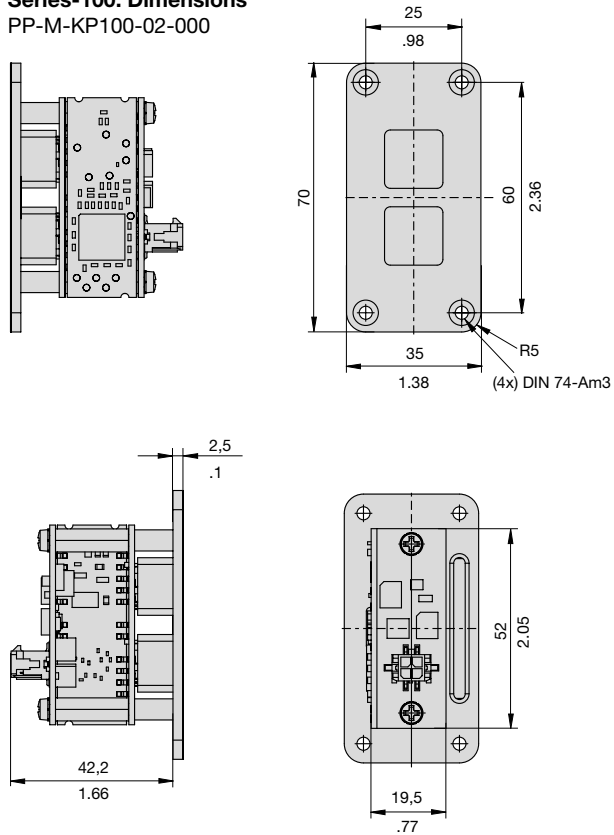


Technical Data

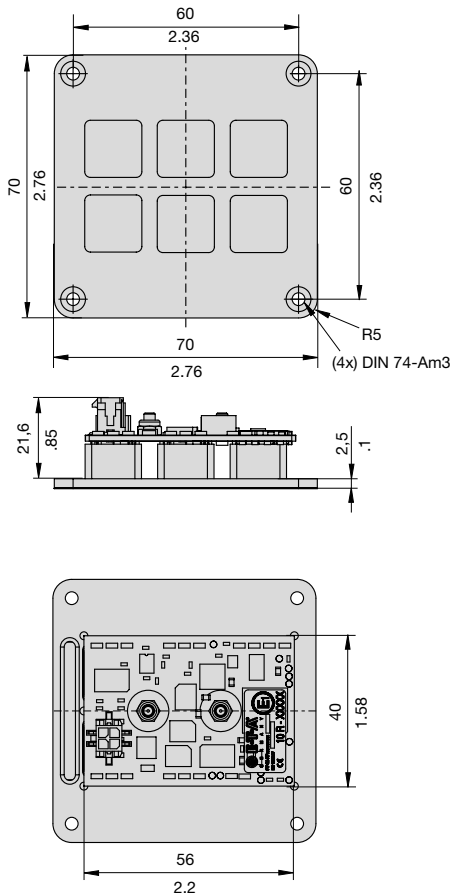
Rated voltage	DC 12 V / DC 24 V	
Operating voltage	9 ... 32 V DC	
Quiescent current	typically 12.5 ... 15 mA at DC 24 V	
LED current per key	blue	typically 18 mA at DC 24 V, 100% brightness
	green	typically 5.5 mA at DC 24 V, 100% brightness
	red	typically 15 mA at DC 24 V, 100% brightness
Degree of protection	IP53 from the front IP00 from the rear	
Operating temperature range	-20... +70° C (-4... +158° F)	
Storage temperature range	-30... +70° C (-22...+158° F)	
Humidity (IEC 60068-2-30, Db)	40 °C, 95% RH, 240 hrs	
Vibration (IEC 60068-2-6, Fc)	10 Hz to 57 Hz: ± 0.38 mm 57 Hz to 200 Hz: acceleration 5 g	
Shock (IEC 60068-2-27, Ea)	25 g (11 ms)	
EMC	CE marking to EN 61000-6-2, EN 61000-6-4	
Mass	series-100	
	2-way	41 g
	6-way	53 g
	8-way	53 g
	series-200	
	15-way	113 g
Interface	CAN to SAE J1939 250kBits/s The CAN terminals at each end of the bus have to be connected with a 120 Ω terminating resistor.	
Keyfields		
Size	15 x 15 mm ² , backlit	
Illuminant	RGB Multi LEDs, configurable colour matching	
Brightness	max. typically 400 mcd/key	
Pressure	3.5 N	
Typical life	min. 145,000 cycles	
Foil		
Design	E-T-A standard design	
Chemical resistance	alcohols, thinned acids, disinfectants (by Merz) to DIN 42115	
Symbols	individual design through slide-in foils (not part of the delivery scope, dimensional drawings on request)	

Dimensions

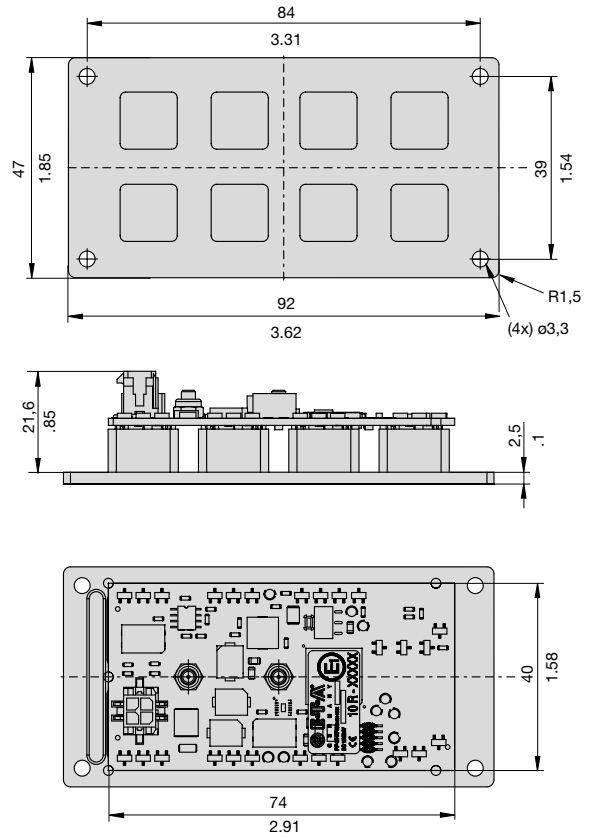
Series-100: Dimensions
PP-M-KP100-02-000



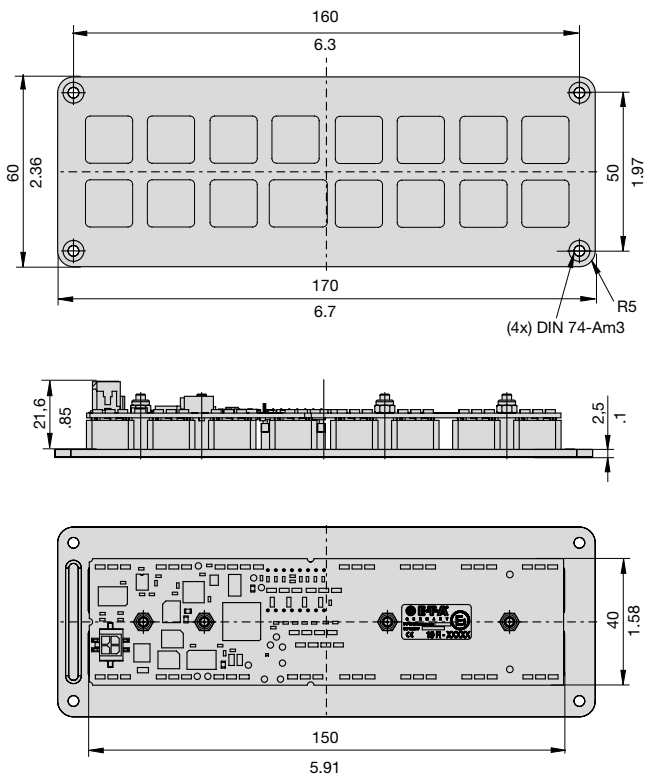
PP-M-KP100-06-000



Series-100: Dimensions
PP-M-KP100-08-000

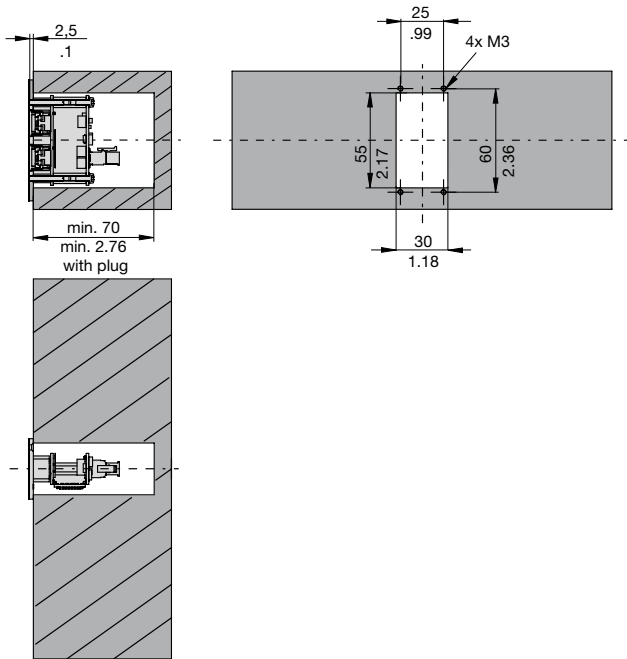


Series-200: Dimensions
PP-M-KP200-15-000

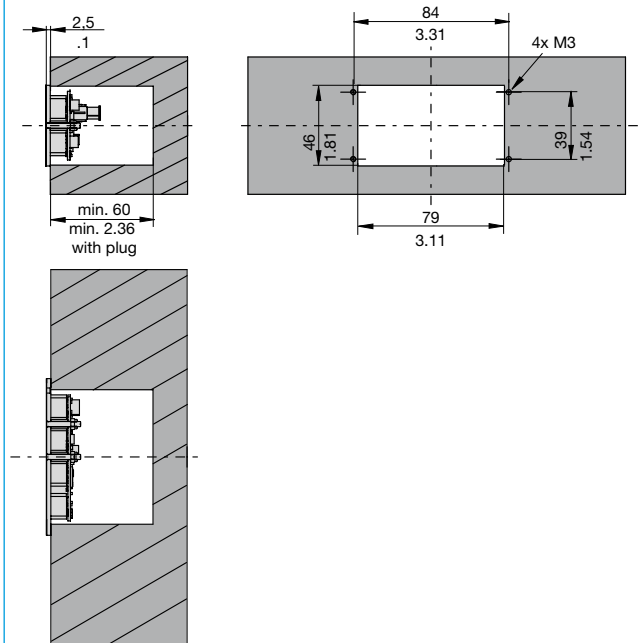


Mounting dimensions

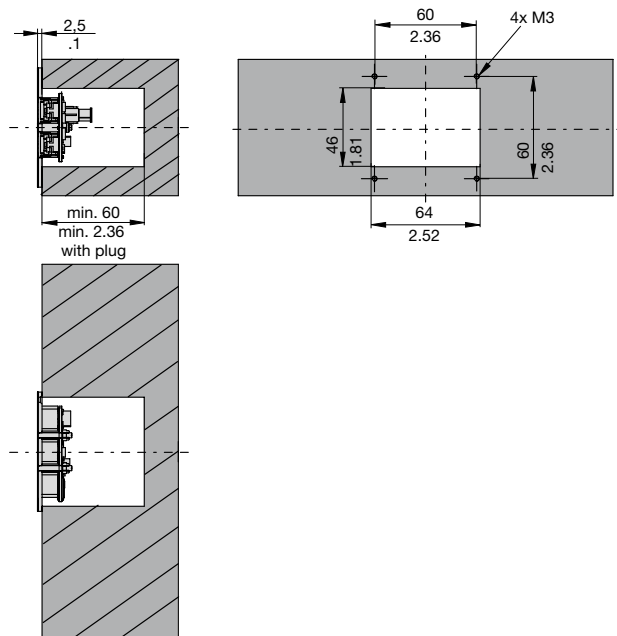
Series-100: Installation dimensions for IP53
PP-M-KP100-02-000



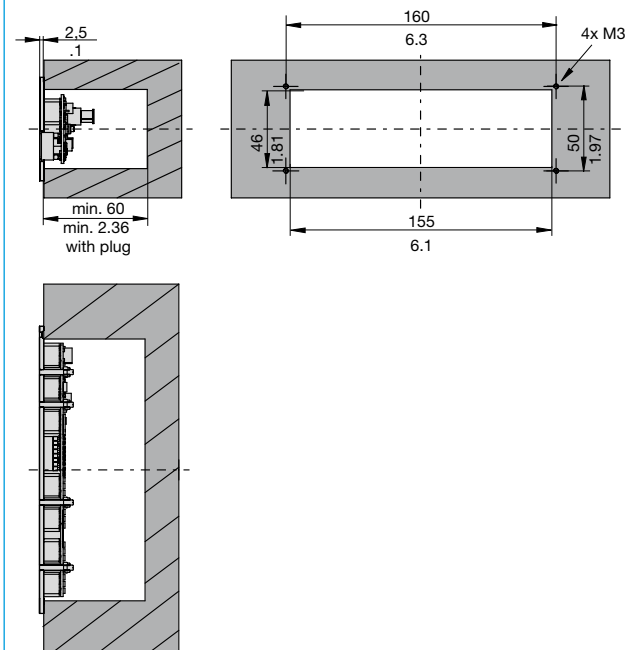
Series-100: Installation dimensions for IP53
PP-M-KP100-08-000



PP-M-KP100-06-000



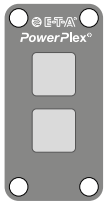
Series-200: Installation dimensions for IP53
PP-M-KP200-15-000



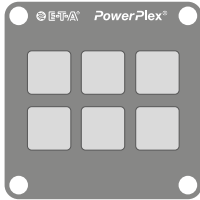
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E-T-A standard foil design

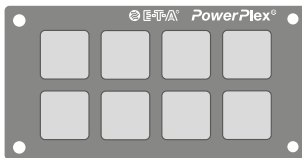
PP-M-KP100-02-000



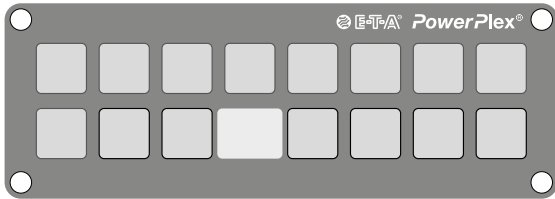
PP-M-KP100-06-000



PP-M-KP100-08-000

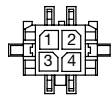


PP-M-KP200-15-000



Pin assignment

4-pole connection*

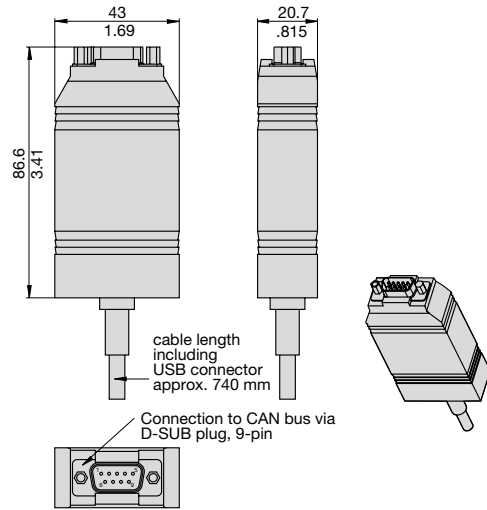


interface	assignment	pin
CAN	CAN-L	1
	CAN-H	2
power supply (DC 12V/24V; DC 9... 32 V)	U _{Batt} -	3
	U _{Batt} +	4

*) Mating connectors are not included in delivery (see accessories)

Accessories

USB/CAN converter: X PP-USBCO
X PP-USBC1 (opto-decoupled)



Pin assignment D-SUB output plug

PIN	assignment
2	CAN-L
7	CAN-H

This is a metric design and millimeter dimensions take precedence. Applicable for nominal dimensions without direct tolerance indication: DIN ISO 286 ± IT 13. Refer to product datasheet for installation and safety instructions.

PowerPlex® Configuration Software

Connection package:

Contains 4-pole connector casing,
4 x crimp contacts 20-24AWG (0.22-0.5mm²) XPP-CP-120