5. Power Panel PP21

5.1 Order Data

Model Number	Short Description
	Power Panel
4P0420.00-490 [1)]	Power Panel PP21, LC display 4x20 characters, background lighting, 34 function keys, system compatible 2003 CPU, 700Kb SRAM, 1.4MB FlashPROM, 1 PCMCIA slot, 1 RS232 interface, 1 CAN interface: electrically isolated, network capable, 6 slots for screw-in modules, 10 digital inputs 24 VDC, 8 digital outputs 24 VDC, 0.4 A, IP65 protection (from front), 155 x 190 mm (WxH), 24 VDC, Order TB712 terminal blocks separately!
	Accessories
0AC201.9	Lithium batteries, 5 pcs., 3 V / 950 mAh, button cell
0MC111.9	PCMCIA memory card, 2MB FlashPROM
0MC211.9	PCMCIA memory card, 2MB SRAM
4A0035.00-000	Set of legend strips for 4P0420.00-490 (for 10 devices)
7TB712.9	Terminal block, 12 pin, screw clamps
7TB712.91	Terminal block, 12 pin, cage clamps
7TB712:90-02	Terminal block, 12 pin, 20 pcs., screw clamps
7TB712:91-02	Terminal block, 12 pin, 20 pcs., cage clamps

Table 3: Order data for the Power Panel PP21

1) All parts required to install the Power Panel, including key legend sheets, are included in its delivery. The backup battery and the 4 pin terminal block for the supply are also included. Two 12 pin terminal blocks must be ordered separately.

5.2 Photo

Figure 2: Power Panel PP21

5.3 Technical Data

Product ID	PP21
General Information	
C-UL-US Listed	In preparation
Standards Temperature Shock / Tests Carried Out Vibration / Tests Carried Out Emission / Tests Carried Out Immunity / Tests Carried Out	 IEC61131-2 / IEC60068-2-x IEC61131-2 / IEC60068-2-27 IEC61131-2 / IEC60068-2-6 EN50081-2 / EN55022+A1 IEC61131-2 / IEC61000-4-x
Processor	
Additional I/O Processor	Handles I/O data points
Instruction Cycle Time (Average value with 70% bit and 30% analog processing)	0.4 µs
Standard Memory User RAM System PROM User PROM	 700 Kbyte SRAM 600 KByte FlashPROM 1.4 MByte FlashPROM

Table 4: Technical data for PP21

Product ID	PP21
Data Buffering	
Backup Battery	Lithium battery 3 V / 950 mAh
Buffer Current	
Typical	10 µA
Maximum	200 µA
Hardware Watchdog	Yes
Voltage Monitoring	The internal supply is monitored for overvoltage and undervoltage
Fan	No
Peripherals	
Real-Time Clock	Nonvolatile
Resolution	1 sec
Status Display	LEDs
System Bus for Expansions	No
Slots for B&R 2003 Screw-in Modules	6
Suitable for IF Modules (without CAN)	Slots 1-3
TPU Functionality Support	Slots 4-6
Suitable for CAN Communication	Slot 1 with interface module 4IF370.7
PCMCIA slot (See "PCMCIA Slot" on page 37.)	1
Standard	JEIDA V 4.0 or PCMCIA Standard Release 2.0
Card Height	Max. 3 mm
Card Type	Memory cards
Memory Size	
SRAM	Max. 4 MByte
FlashPROM	Max. 4 MByte
Standard Communication Interfaces	
Application Interface IF1	RS232
Electrical Isolation	No
Design	9 pin DSUB plug
Max. Distance	15 m / 19200 Baud
Max. Baud Rate	115.2 kBaud
Application Interface IF2	CAN
Electrical Isolation	Yes
Design	9 pin DSUB plug
Max. Distance	1,000 m
Max. Baud Rate	500 kBaud
Digital Inputs	
Number of Inputs	10
Inputs with Additional Functions (TPU)	Inputs 1-4
Input Frequency (TPU)	50 kHz (Incremental encoder operation)
Wiring	Sink
Input Voltage	
Minimum	18 VDC
Nominal	24 VDC
Maximum	30 VDC
Input Current at Nominal Voltage	Approx. 4 mA
Input Delay	Max. 1 ms (not TPU)

Table 4: Technical data for PP21 (cont.)

Product ID	PP21
Electrical Isolation	
Input - PLC	Yes
Input - Output	Yes
Digital Outputs	
Amount/Type	
Highside Driver IC (Transistor)	8
Potential-Free Relay Contact	1
Switching Voltage	
Minimum	18 VDC
Nominal	24 VDC
Maximum	30 VDC
Continuous Current per	
Output	Max. 0.4 A
Module	Max. 3.2 A
Load for Potential-Free Relay Contact	Max. 0.5 A
Leakage Current when Switched Off	12 µA
Overload Protection	Yes
Switching On after Overload Cutoff	Automatically within seconds (depends on the panel temperature)
Continuous Short Circuit Current	Typ. 4 A
Internal Protective Circuit	Yes
Braking Voltage when Switching Off Inductive Loads	47 V
Switching Delay	
Log. 0 - Log. 1	Max. 450 µs
Log. 1 - Log. 0	Max. 450 µs
Electrical Isolation	
Output - PLC	Yes
Output - Input	Yes
HMI	
Display	
Type	LC Display
Number of Lines	4
Number of Characters/Line	20
Character Height	4.75 mm
Background Lighting	LED
Character Set	English/Katakana
Reading Angle	Approx. 60 °
Keyboard	
Number of Keys	34 membrane keys
Design	Covered keypad with metallic snap-action disks
Function Keys	17, with LEDs, labeled with legend sheets
System Keys	17 (number block, control keys)
Front	Multi-layered front with insertion slots for key legends
Protection According to IEC 60529	IP65 (from front)
Power Supply	
Input Voltage	
Minimum	18 VDC
Nominal	24 VDC
Maximum	30 VDC

Table 4: Technical data for PP21 (cont.)

Product ID	PP21
Power Consumption	Max. 20 W
Output Power for Screw-in Modules and PCMCIA Interface	10 W
Operational Conditions	
Installation	Vertical, ±45°
Altitude	Max. 3,000 m
Environment Temperature during Operation	0 to 50 °C
Relative Humidity during Operation	10 to 90% (non-condensing)
Storage Conditions	
Storage Temperature	-20 to 60 °C
Relative Humidity for Storage	5 to 95 % (non-condensing)
Mechanical Characteristics	
Weight	Approx. 1.25 kg
Dimensions Width Height Depth	 155 mm 190 mm 84.4 mm

Table 4: Technical data for PP21 (cont.)

5.4 Images

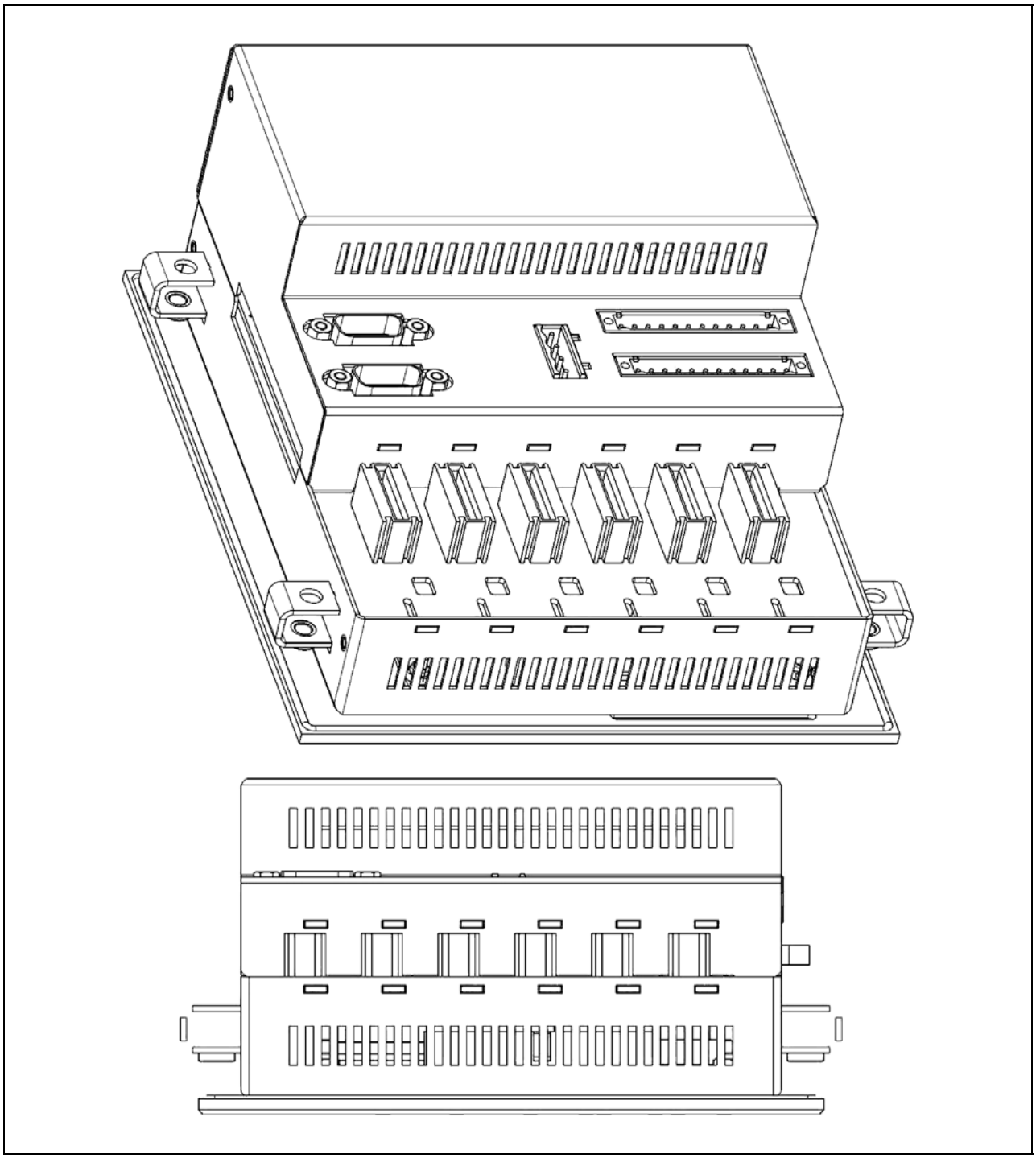

Figure 3: PP21

5.5 Dimensions

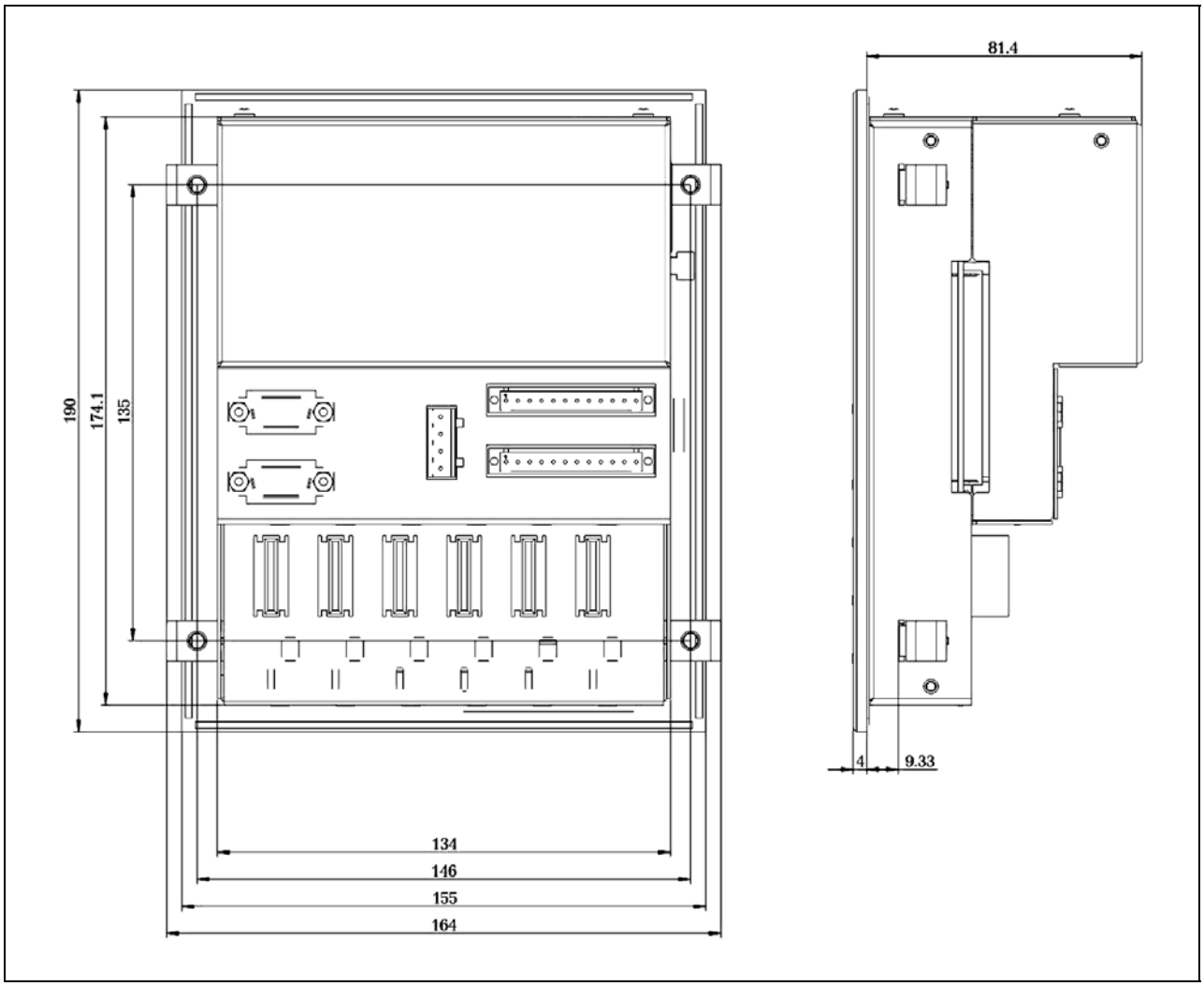

Figure 4: PP21 dimensions