

DATA SHEET

# TU505, TU506

## Terminal Unit



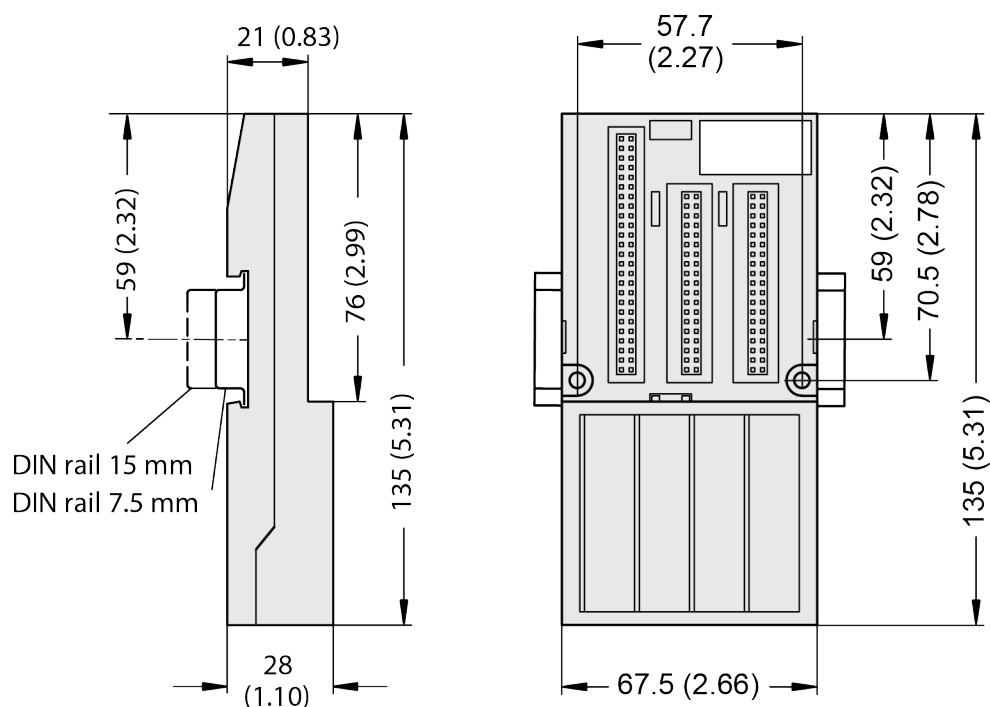
## 1 Ordering Data

Part No.	Description	Product Life Cycle Phase *)
1SAP 210 200 R0001	TU505-FBP, FBP terminal unit, screw terminals	Classic
1SAP 210 000 R0001	TU506-FBP, FBP terminal unit, spring terminals	Classic



*\*) For planning and commissioning of new installations use modules in Active status only.*

## 2 Dimensions



*The dimensions are in mm and in brackets in inch.*

## 3 Technical Data

The System Data of AC500 and S500 [Chapter 4 “System Data AC500”](#) on page 3 are valid for standard version.

The System Data of AC500-XC are valid for the XC version.

Only additional details are therefore documented below.

For information about wiring specifications see .

Parameter	Value
Number of I/O channels per module	16
Distribution of the channels into groups	2 groups of 8 channels each (1.0...1.7, 2.0...2.7), the allocation of the channels is given by the inserted FBP Interface Module
FieldBusPlug	M12, 5-pin
Rated voltage	24 V DC
Max. permitted total current	10 A (between the terminals 1.8...2.8 and 1.9...2.9)
Earthing	Direct connection to the earthed DIN rail or via the screws with wall mounting

Parameter	Value
Screw terminals	Front terminal, conductor connection vertically with respect to the printed circuit board
Spring terminals	Front terminal, conductor connection vertically with respect to the printed circuit board
Weight	200 g
Mounting position	Horizontal or vertical

## 4 System Data AC500

### 4.1 Environmental Conditions

Table 1: Process and supply voltages

Parameter	Value
24 V DC	
Voltage	24 V (-15 %, +20 %)
Protection against reverse polarity	Yes
120 V AC	
Voltage	120 V (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
230 V AC	
Voltage	230 V AC (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
120...240 V AC wide range supply	
Voltage	120...240 V (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
Allowed interruptions of power supply, according to EN 61131-2	
DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2
AC supply	Interruption < 0.5 periods, time between 2 interruptions > 1 s



#### NOTICE!

Exceeding the maximum power supply voltage for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.



#### NOTICE!

Improper voltage level or frequency range which cause damage of AC inputs:

- AC voltage above 264 V
- Frequency below 47 Hz or above 62.4 Hz

**NOTICE!**

Improper connection leads cause overtemperature on terminals.

PLC modules may be destroyed by using wrong cable type, wire size and cable temperature classification.

Parameter		Value
Temperature		
	Operating	0 °C ... +60 °C: Horizontal mounting of modules. 0 °C ... +40 °C: Vertical mounting of modules. Output load reduced to 50 % per group.
	Storage	-40 °C ... +70 °C
	Transport	-40 °C ... +70 °C
Humidity		Max. 95 %, without condensation
Air pressure		
	Operating	> 800 hPa / < 2000 m
	Storage	> 660 hPa / < 3500 m
Ingress protection		IP20

## 4.2 Creepage Distances and Clearances

The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2.

## 4.3 Insulation Test Voltages, Routine Test

According to EN 61131-2

230 V circuits against other circuitry	2500 V	1.2/50 µs
120 V circuits against other circuitry	1500 V	1.2/50 µs
120 V to 240 V circuits against other circuitry	2500 V	1.2/50 µs
24 V circuits (supply, 24 V inputs/outputs, analogue inputs/outputs), if they are electrically isolated against other circuitry	500 V	1.2/50 µs
COM interfaces, electrically isolated	500 V	1.2/50 µs
COM interfaces, electrically not isolated	Not applicable	Not applicable
FBP interface	500 V	1.2/50 µs
Ethernet	500 V	1.2/50 µs
ARCNET	500 V	1.2/50 µs

230 V circuits against other circuitry	1350 V	AC 2 s
120 V circuits against other circuitry	820 V	AC 2 s
120 V to 240 V circuits against other circuitry	1350 V	AC 2 s
24 V circuits (supply, 24 V inputs/outputs, analogue inputs/outputs), if they are electrically isolated against other circuitry	350 V	AC 2 s
COM interfaces, electrically isolated	350 V	AC 2 s
COM interfaces, electrically not isolated	Not applicable	Not applicable
FBP interface	350 V	AC 2 s
Ethernet	350 V	AC 2 s
ARCNET	350 V	AC 2 s

## 4.4 Power Supply Units

For the supply of the modules, power supply units according to PELV specifications must be used.

## 4.5 Electromagnetic Compatibility

Immunity		
<b>Immunity against electrostatic discharge (ESD):</b>		According to EN 61000-4-2, zone B, criterion B
	Electrostatic voltage in case of air discharge	8 kV
	Electrostatic voltage in case of contact discharge	4 kV, in a closed switch-gear cabinet 6 kV <sup>1)</sup>
	ESD with communication connectors	In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.
	ESD with connectors of Terminal Bases	The connectors between the Terminal Bases and Processor Modules or Communication Modules must not be touched during operation. The same is valid for the I/O-Bus with all modules involved.
<b>Immunity against the influence of radiated (CW radiated):</b>		According to EN 61000-4-3, zone B, criterion A
	Test field strength	10 V/m
<b>Immunity against transient interference voltages (burst):</b>		According to EN 61000-4-4, zone B, criterion B
	Supply voltage units (AC, DC)	4 kV

<b>Immunity</b>		
	Digital inputs/outputs (24 V DC)	2 kV
	Digital inputs/outputs (120/230 V AC)	2 kV
	Analog inputs/outputs	1 kV
	CS31 system bus	2 kV
	Serial RS-485 interfaces (COM)	2 kV
	Serial RS-232 interfaces (COM, not for PM55x and PM56x)	1 kV
	ARCNET	1 kV
	FBP	1 kV
	Ethernet	1 kV
	I/O supply, DC-out	1 kV
<b>Immunity against the influence of line-conducted interferences (CW conducted):</b>		According to EN 61000-4-6, zone B, criterion A
	Test voltage	3V zone B, 10 V is also met.
High energy surges		According to EN 61000-4-5, zone B, criterion B
	Power supply DC	1 kV CM / 0.5 kV DM <sup>2)</sup>
	DC I/O supply	0.5 kV CM / 0.5 kV DM <sup>2)</sup>
	Communication Lines, shielded	1 kV CM <sup>2)</sup>
	AC-I/O unshielded	2 kV CM / 1 kV DM <sup>2)</sup>
	I/O analog, I/O DC unshielded	1 kV CM / 0.5 kV DM <sup>2)</sup>
Radiation (radio disturbance)		According to EN 55011, group 1, class A

<sup>1)</sup> High requirement for shipping classes are achieved with additional specific measures (see specific documentation).

<sup>2)</sup> CM = Common Mode, DM = Differential Mode

## 4.6 Mechanical Data

Mounting	Horizontal
Degree of protection	IP 20
Housing	According to UL 94
Vibration resistance acc. to EN 61131-2	all three axes 2 Hz...15 Hz, continuous 3.5 mm 15 Hz...150 Hz, continuous 1 g (higher values on request)
Vibration resistance with SD Memory Card inserted	15 Hz...150 Hz, continuous 1 g
Shock test	All three axes 15 g, 11 ms, half-sinusoidal
<b>Mounting of the modules:</b>	
DIN rail according to DIN EN 50022	35 mm, depth 7.5 mm or 15 mm

Mounting with screws	Screws with a diameter of 4 mm
Fastening torque	1.2 Nm

## 4.7 Approvals and certifications

Information on approvals and certificates can be found in the corresponding chapter of the Main catalog, PLC Automation.