DATA SHEET

# CM574-RS

## Communication module


## 1 Ordering data

| Part no. | Description | Product life cycle phase *) |
|---|---|---|
| 1SAP 170 400 R0201 | CM574-RS, communication module, 2 serial RS232/485, free configurable serial interface module | Active |

*) *Modules in lifecycle Classic are available from stock but not recommended for planning and commissioning of new installations.*

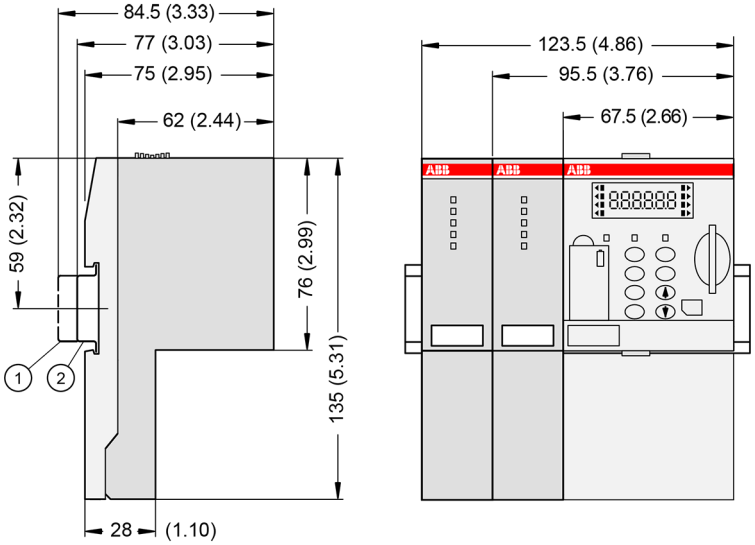
*Table 1: Spare parts for communication modules with 2 serial interfaces*

| Part no. | Description |
|---|---|
| 1SAP 182 000 R0001 | TA532: 9-pin terminal block set for communication modules CM574-RS and CM574-RCOM, 10 pieces, spring type terminal |

*The communication modules with 2 serial interfaces are delivered with two 9-pin terminal blocks TA532 (1SAP 182 000 R0001).*

*The terminal block listed in the ordering data is for spare part only if needed.*

# 2 Dimensions




1 Din rail 15 mm
2 Din rail 7.5 mm

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

# 3 Technical data

The system data of AC500 and S500 are applicable to the standard version *Chapter 4 "System data AC500" on page 3*.

The system data of AC500-XC are applicable to the XC version.

Only additional details are therefore documented below.

The technical data are also applicable to the XC version.

| Parameter | Value |
|---|---|
| Protocol | Programmable with Automation Builder e.g. Modbus / ASCII via serial interfaces |
| Interface | Serial interface |
| Serial interface standard | EIA RS-232 or EIA RS-485 |
| Potential separation | Yes, from the CPU, 500 V DC |
| Serial interface parameters | Configurable via software |
| Modes of operation | Programming or data exchange |
| Transmission rate | 9.6 kbit/s to 187.5 kbit/s |
| Protocol | Programmable |
| Interface connector | MC 0.5/9-G-2.5, 9-pin, male |
| Processor | PowerPC |
| Usable CPUs | PM57x, PM58x, PM59x |
| Usable terminal bases | All TB5xx |

| Parameter | Value |
|---|---|
| Ambient temperature | see:<br>System data AC500 ↳ *Chapter 4 “System data AC500” on page 3*<br>System Data AC500 XC |
| Communication module bus | Dual-port memory, 8 kB |
| Internal power supply | Through the communication module bus of the terminal base |
| Current consumption from 24 V DC power supply at the terminal base of the CPU | Typ. 80 mA |
| Internal RAM memory | 256 kB |
| External RAM memory | - |
| External Flash memory | 512 kB (firmware) + 2 x 64 kB (user data) |
| Status display | PWR, RDY, RUN, STA, ERR |
| Weight | Ca. 150 g |

# 4 System data AC500

## 4.1 Environmental conditions

*Table 2: 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 V AC...240 V AC wide-range supply | | |
| | Voltage | 120 V ... 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!**

**Risk of damaging the PLC due to improper voltage levels!**

– Never exceed the maximum tolerance values for process and supply voltages.
– Never fall below the minimum tolerance values for process and supply voltages.
Observe the **system data** *Chapter 4 “System data AC500” on page 3* and the **technical data** of the module used.

**NOTICE!**

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

– AC voltage above 264 V
– Frenquency 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.<br>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 |

## 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**

| Parameter | Value | |
|---|---|---|
| 230 V circuits against other circuitry | 2500 V | 1.2/50 µs |
| 120 V circuits against other circuitry | 1500 V | 1.2/50 µs |

| Parameter | Value | |
|---|---|---|
| 120 V ... 240 V circuits against other circuitry | 2500 V | 1.2/50 µs |
| | | |
| 24 V circuits (supply, 24 V inputs/outputs, analog inputs/ outputs), if they are galvanically isolated against other circuitry | 500 V | 1.2/50 µs |
| COM interfaces, galvanically 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 ... 240 V circuits against other circuitry | 1350 V | AC 2 s |
| | | |
| 24 V circuits (supply, 24 V inputs/outputs, analog inputs/ outputs), if they are galvanically isolated against other circuitry | 350 V | AC 2 s |
| COM interfaces, galvanically 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 SELV or PELV specifications must be used.

***Safety Extra Low Voltage (SELV) and Protective Extra Low Voltage (PELV)***

*To ensure electrical safety of AC500/AC500-eCo extra low voltage circuits, 24 V DC supply, communication interfaces, I/O circuits, and all connected devices must be powered from sources meeting requirements of SELV, PELV, class 2, limited voltage or limited power according to applicable standards.*

**WARNING!**

**Improper installation can lead to death by touching hazardous voltages!**

To avoid personal injury, safe separation, double or reinforced insulation and separation of the primary and secondary circuit must be observed and implemented during installation.

– Only use power converters for safety extra-low voltages (SELV) with safe galvanic separation of the primary and secondary circuit.
– Safe separation means that the primary circuit of mains transformers must be separated from the secondary circuit by double or reinforced insulation. The protective extra-low voltage (PELV) offers protection against electric shock.

## 4.5 Electromagnetic compatibility

*Table 3: Range of use*

| **Application** |
|---|
| Device suitable only as *Control Equipment for Industrial Applications*. |

*Table 4: Immunity against electrostatic discharge (ESD), according to IEC 61000-4-2, zone B, criterion B*

| **Parameter** | **Value** |
|---|---|
| Electrostatic voltage in case of air discharge | 8 kV |
| Electrostatic voltage in case of contact discharge | 4 kV, in a closed control cabinet 6 kV [1]) |
| 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. |

[1]) High requirement for shipping classes are achieved with additional specific measures (see specific documentation).

*Table 5: Immunity against the influence of radiated (CW radiated), according to IEC 61000-4-3, zone B, criterion A*

| **Parameter** | **Value** |
|---|---|
| Test field strength | 10 V/m |

*Table 6: Immunity against fast transient interference voltages (burst), according to IEC 61000-4-4, zone B, criterion B*

| **Parameter** | **Value** |
|---|---|
| Power supply (DC) | 2 kV |
| Power supply (AC) | 2 kV |
| Digital inputs/outputs (24 V DC) | 1 kV |
| Digital inputs/outputs (120 V AC ... 240 V AC) | 2 kV |

| Parameter | Value |
|---|---|
| Analog inputs/outputs | 1 kV |
| CS31 bus | 1 kV |
| Serial RS-485 interfaces (COM) | 1 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 |

*Table 7: Immunity against the influence of line-conducted interferences (CW conducted), according to IEC 61000-4-6, zone B, criterion A*

| Parameter | | Value |
|---|---|---|
| Test voltage | | 3V zone B, 10 V is also met. |
| High energy surges | | According to IEC 61000-4-5, zone B, criterion B |
| | Power supply (DC) | 1 kV CM / 0.5 kV DM [2]) |
| | DC I/O supply | 0.5 kV CM / 0.5 kV DM [2]) |
| | Communication Lines, shielded | 1 kV CM [2]) |
| | AC I/O unshielded [3]) | 2 kV CM / 1 kV DM [2]) |
| | I/O analog, I/O DC unshielded [3]) | 1 kV CM / 0.5 kV DM [2]) |
| Radiation (radio disturbance) | | According to IEC 55011, group 1, class A |

[2]) CM = Common Mode, DM = Differential Mode

[3]) When DC I/O inputs are used with AC voltage, external filters limiting high energy surges to 1 kV CM / 0.5 DM are required to meet requirements according IEC 61131-2.

## 4.6 Mechanical data

| Parameter | Value |
|---|---|
| Mounting | Horizontal |
| Degree of protection | PLC system: IP 20<br>● with all modules plugged in<br>● with all terminals plugged in<br>● with all covers closed |
| Housing | Classification V-2 according to UL 94 |
| Vibration resistance acc. to EN 61131-2 | all three axes<br>2 Hz ... 8.4 Hz, continuous 3.5 mm<br>8.4 Hz ... 150 Hz, continuous 1 g (higher values on request) |
| Shock test | All three axes<br>15 g, 11 ms, half-sinusoidal |
| **Mounting of the modules:** | |
| DIN rail according to DIN EN 50022 | 35 mm, depth 7.5 mm or 15 mm |

| Parameter | Value |
|---|---|
| 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 PLC Automation *catalog*, in the table "Certifications" in the chapter "Additional information".

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