## CM574-RS
Communication module

### 1 Ordering data

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
<th>Product life cycle phase *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SAP 170 400 R0201</td>
<td>CM574-RS, communication module, 2 serial RS232/485, free configurable serial interface module</td>
<td>Active</td>
</tr>
</tbody>
</table>

*) Modules in lifecycle Classic are available from stock but not recommended for planning and commissioning of new installations.
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 % Chapter 4 “System data AC500” on page 3 are applicable to the standard version.

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.
## 4 System data AC500

### 4.1 Environmental conditions

Table 1: Process and supply voltages

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V DC</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V (-15 %, +20 %)</td>
</tr>
<tr>
<td>Protection against reverse polarity</td>
<td>Yes</td>
</tr>
<tr>
<td>120 V AC</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>120 V (-15 %, +10 %)</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz (-6 %, +4 %)</td>
</tr>
<tr>
<td>230 V AC</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>230 V AC (-15 %, +10 %)</td>
</tr>
</tbody>
</table>
### Parameter | Value
---|---
**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 |

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**NOTICE!**

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

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**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

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**NOTICE!**

Improper connection leads cause overtemperature on terminals.

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

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### 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 |

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### 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 V circuits against other circuitry</td>
<td>2500 V</td>
</tr>
<tr>
<td>120 V circuits against other circuitry</td>
<td>1500 V</td>
</tr>
<tr>
<td>120 V...240 V circuits against other circuitry</td>
<td>2500 V</td>
</tr>
<tr>
<td>24 V circuits (supply, 24 V inputs/outputs, analog inputs/outputs), if they are galvanically isolated against other circuitry</td>
<td>500 V</td>
</tr>
<tr>
<td>COM interfaces, galvanically isolated</td>
<td>500 V</td>
</tr>
<tr>
<td>COM interfaces, electrically not isolated</td>
<td>Not applicable</td>
</tr>
<tr>
<td>FBP interface</td>
<td>500 V</td>
</tr>
<tr>
<td>Ethernet</td>
<td>500 V</td>
</tr>
<tr>
<td>ARCNET</td>
<td>500 V</td>
</tr>
<tr>
<td>230 V circuits against other circuitry</td>
<td>1350 V</td>
</tr>
<tr>
<td>120 V circuits against other circuitry</td>
<td>820 V</td>
</tr>
<tr>
<td>120 V...240 V circuits against other circuitry</td>
<td>1350 V</td>
</tr>
<tr>
<td>24 V circuits (supply, 24 V inputs/outputs, analog inputs/outputs), if they are galvanically isolated against other circuitry</td>
<td>350 V</td>
</tr>
<tr>
<td>COM interfaces, galvanically isolated</td>
<td>350 V</td>
</tr>
<tr>
<td>COM interfaces, electrically not isolated</td>
<td>Not applicable</td>
</tr>
<tr>
<td>FBP interface</td>
<td>350 V</td>
</tr>
<tr>
<td>Ethernet</td>
<td>350 V</td>
</tr>
<tr>
<td>ARCNET</td>
<td>350 V</td>
</tr>
</tbody>
</table>

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 2: Range of use**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial applications</td>
<td>Yes</td>
</tr>
<tr>
<td>Domestic applications</td>
<td>No</td>
</tr>
</tbody>
</table>

**Table 3: Immunity against electrostatic discharge (ESD), according to IEC 61000-4-2, zone B, criterion B**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic voltage in case of air discharge</td>
<td>8 kV</td>
</tr>
<tr>
<td>Electrostatic voltage in case of contact discharge</td>
<td>4 kV, in a closed switchgear cabinet 6 kV (^1)</td>
</tr>
<tr>
<td>ESD with communication connectors</td>
<td>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.</td>
</tr>
<tr>
<td>ESD with connectors of terminal bases</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test field strength</td>
<td>10 V/m</td>
</tr>
</tbody>
</table>
### Table 5: Immunity against fast transient interference voltages (burst), according to IEC 61000-4-4, zone B, criterion B

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage units (DC)</td>
<td>2 kV</td>
</tr>
<tr>
<td>Supply voltage units (AC)</td>
<td>2 kV</td>
</tr>
<tr>
<td>Digital inputs/outputs (24 V DC)</td>
<td>1 kV</td>
</tr>
<tr>
<td>Digital inputs/outputs (120 V AC...240 V AC)</td>
<td>2 kV</td>
</tr>
<tr>
<td>Analog inputs/outputs</td>
<td>1 kV</td>
</tr>
<tr>
<td>CS31 bus</td>
<td>1 kV</td>
</tr>
<tr>
<td>Serial RS-485 interfaces (COM)</td>
<td>1 kV</td>
</tr>
<tr>
<td>Serial RS-232 interfaces (COM, not for PM55x and PM56x)</td>
<td>1 kV</td>
</tr>
<tr>
<td>ARCNET</td>
<td>1 kV</td>
</tr>
<tr>
<td>FBP</td>
<td>1 kV</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 kV</td>
</tr>
<tr>
<td>I/O supply (DC-out)</td>
<td>1 kV</td>
</tr>
</tbody>
</table>

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

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

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP 20</td>
</tr>
<tr>
<td>Housing</td>
<td>Classification V-2 according to UL 94</td>
</tr>
<tr>
<td>Vibration resistance acc. to EN 61131-2</td>
<td>all three axes</td>
</tr>
<tr>
<td></td>
<td>2 Hz...8.4 Hz, continuous 3.5 mm</td>
</tr>
<tr>
<td></td>
<td>8.4 Hz...150 Hz, continuous 1 g (higher values on request)</td>
</tr>
</tbody>
</table>
### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock test</td>
<td>All three axes</td>
</tr>
<tr>
<td></td>
<td>15 g, 11 ms, half-sinusoidal</td>
</tr>
<tr>
<td>Mounting of the modules:</td>
<td></td>
</tr>
<tr>
<td>DIN rail according to DIN EN 50022</td>
<td>35 mm, depth 7.5 mm or 15 mm</td>
</tr>
<tr>
<td>Mounting with screws</td>
<td>Screws with a diameter of 4 mm</td>
</tr>
<tr>
<td>Fastening torque</td>
<td>1.2 Nm</td>
</tr>
</tbody>
</table>

### 4.7 Approvals and certifications

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

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