Bus Connection Unit
560BCU04

Application
The Bus Connection Unit 560BCU04 R0001 is designed to make the RTU560s TSI, TSO, Alarm and Warning signals accessible to the outside.

By using the bus connection unit 560BCU04 R0001, up to 8 560CMUxx communication units can be used in a rack configuration (23TP22, 560MPR03).

To expand the RTU560 system bus to another rack (23TP22, 560MPR03), an 8 pole RJ45 connector is available. For cabling, a shielded 8 pole RJ45 patch cable can be used.

Characteristics
The Bus Connection Unit 560BCU04 R0001 is used in the racks 23TP22 or 560MPR03. It is available in two versions: The 560BCU04 R0001, containing a basic board and a termination board, and the 560BCU04 R0002, containing the extension boards for the connection of additional CMUs.

The 560BCU04 R0001 basic board is mounted on the 19 pole process interface connector of the rightmost used CMU slot in the rack. The 2nd or next CMUs are connected by using the 560BCU04 R0002 extension board. Via ribbon cables, the 560BCU04 connects the RTU560 communications bus to all CMU slots.

The leftmost CMU needs a bus termination realized by means of the 560BCU04 R0001 termination board. It is essential to always place the termination board as last board in the rack (see Fig. 3).

All supply voltages and control signals are interfaced by a ribbon cable connection from the rack to the 560BCU04 R0001. To enable operation using a 23TP22 rack, +24 VDC needs to be connected to a screw terminal connector.

The system signals ALARM and WARNING can be accessed via relay contacts and are supervised with a watchdog function. If the trigger from the communication unit is missing for more than 30 seconds, both relay contacts are activated and the contacts are closed.

The external minute interrupt of a real time clock 560RTCxx is connected to the system via an internal isolated optical-coupler (TSI) and routed to the time master of the RTU560 system. The minute pulse output (TSO) is available for other applications.

Also the signals for supervising redundant power supply units are distributed.

If it is intended to use a single CMU inside a standalone rack only a unit 560BCU04 R0003 is required for correct bus termination (see Fig. 4). Thus without usage of ALR, WRN, TSI, TSO and supervision of redundant power supply units.

Figure 1: Function Block Diagram
560BCU04 R0001 Basic board
Figure 2: Basic board, part 1 of 560BCU04 R0001

Figure 3: Extension board, 560BCU04 R0002

Figure 4: Termination board, part 2 of 560BCU04 R0001
Figure 5: Termination board 560BCU04 R0003 for single CPU usage

Figure 6: Assembly 560MPR03, 560BCU04 R0001 and R0002
Figure 7: Assembly 560MPR03 and 560BCU04 R0003
Technical Data
In addition to the general technical data of the RTU560, the following applies:

**Minute Pulse Input (TSI)**
- **X11** | Plug-in terminal strip 2-pole, 24 VDC input, isolated

**Minute Pulse Output (TSO)**
- **X10** | Plug-in terminal strips 2-pole, 24 VDC output

**Rack-to-Rack Interface**
- **X17** | RJ45 connector 90°

**Signal Outputs**
- **ALARM**
- **WARNING**
  - Plug-in terminal strips 2-pole each
  - Relay contact: Active closed, WARNING is set also in case of ALARM.
    - 1 A / ≤ 60 V DC / ≤ 30 W

**Watchdog**
- **Supervision time**: Approx. 30 seconds

**Compliances**
- **EMC**: EN550011, EN61000
- **Environmental Safety**: EN60255, IEC60870
- **Safety**: EN60950

**Voltage Supply**
- **Supply**: 5 V DC / approx. 80 mA
  - 24 V DC / approx. 60 mA

**Supply (external)**
- **+24V**: Screw terminal connection only in case of 23TP22 rack

**Mechanics**
- **PCB**: 126 x 92 mm
- **Weight**: Approx. 0.1 kg

**Connection Type**
- **X19**: 19 pol. Process interface connector

**Environmental Conditions**
- **Nominal operating temperature range**: -25°C … +70°C
- **Startup**: -40°C
- **Storage temperature range**: -40°C … +85°C
- **Relative Humidity (EN60068 2-30)**: 5 … 95 % (non condensing)

**Ordering Information**
- **560BCU04 R0001** (part 1: Basic board, part 2: Termination board): 1KGT 022300 R0001
- **560BCU04 R0002** (Extension board): 1KGT 022300 R0002
- **560BCU04 R0003** (Termination board): 1KGT 022300 R0003