Application Description

PROCONTROL P
Communication

Coupling Module
Coupling the PDDS Programming,
Diagnosis, and Display System
to the Station Bus

87TS01 − E/R1545

Application

Module 87TS01 is a coupling module for connecting computers to the PROCONTROL system. With module version R1545, the PDDS programming, diagnosis, and display system can be coupled to the PROCONTROL station bus via a serial interface of type RS 232c. The module's scope of action covers the entire PROCONTROL system. Data communication with the PROCONTROL system has to be activated from the PDDS.

Features

The module may be plugged into any station of the PROCONTROL bus system with redundant 24 V module supply (from 89MS01/R0200 or 89MS02/R0100). It is provided with a standard interface to the PROCONTROL station bus.

Description

Processing

Coupling to the PDDS is established by the processing section of the module using the RS 232c serial interface.

The entire data exchange between station−bus interface and processing section takes place over the shared memories.

Coupling to the station bus can be established in a PROCONTROL station.

All transfer processes over the V 24 interface are initiated from the PDDS using instructions conforming to a predefined protocol.

Throughout the entire PROCONTROL system, the following data exchange is possible per coupling module:

− Listening−in on PROCONTROL telegrams.
  The listening−in address list transferred by the PDDS is protected against data corruption by a CRC check sum.

− Reading registers of PROCONTROL modules.

− Writing into registers of PROCONTROL modules, e.g. for command output with and without reading−back of the data transferred.

− Reading lists from PROCONTROL modules (including the extended job memory format for new modules) such as limit−value and parameter lists.

− Writing lists of PROCONTROL modules (including the extended job memory format for new modules) such as limit−value and parameter lists.

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Addressing

On account of its interface with two systems, addressing of the module is done in two directions.

− In the direction of the PROCONTROL bus system, addressing is automatically defined by the module slot.
− In the direction of the serial interface, addressing is done by setting the coupling module number on the 87TS01 module.

For applications with the PDDS, the coupling module number has to be set to 1.

Initialization

Initialization of the module takes place in two phases. Both phases are passed through automatically.

Initialization on the bus system side is started automatically with voltage connection, i.e. when the module is plugged into its slot.

During initialization, all light−emitting diodes of the module are ON. After initialization is completed, the light−emitting diodes go OFF.

Initialization on the computer side also takes place automatically and is effected by the PDDS via the serial interface.

Command output to the bus system

Commands from the PDDS are transmitted to the 87TS01 module together with destination address and data. Per event, the 87TS01 module feeds these commands into the bus system.

Transfer of lists

Using the coupling module, the PDDS can read all user lists from the PROCONTROL P modules and write them into these modules according to a predefined protocol.

Annunciation functions and diagnosis

Faults in the module or in the RS 232c interface are detected by the module with the help of diagnosis functions and are annunciated (see also the 87TS01−E/R15.. module description).

Annunciations on the module

On the module front, two red and two green light−emitting diodes are located:

− Light−emitting diode ST

Red light−emitting diode ST emits a steady light when a disturbance is detected in the area of the station−bus interface or when the receive monitoring responds.

− Light−emitting diode STV

Red light−emitting diode STV emits a steady light when a disturbance is detected in the processing section of the module.

Light−emitting diodes ST and STV are controlled from the station−bus interface of the module.

The two green light−emitting diodes, M1 and M2, indicate the operating status of the processing section.

− Light−emitting diode M1

Green light−emitting diode M1 is ON when data communication with the PDDS is active via the serial RS 232c interface.

− Light−emitting diode M2

Green light−emitting diode M2 is ON when job processing is active in the processing section of the module.

Additionally, light−emitting diodes M1 and M2 indicate the following conditions:

− M1 and M2 continuously OFF indicates an idle condition.

− M1 and/or M2 continuously ON indicates a fault condition.

− M1 and M2 flashing alternately at 1−second intervals indicates a fault condition during initialization.

The monitoring function in the processing section ensures that re−initialization by the PDDS is activated in case disturbances occur in the processing section. Transfer through the serial interface is safeguarded by a check sum. In the case of transmission errors, the disturbed telegram will be repeated.

The diagnosis functions of the bus interface are explained in the 87TS01−E/R15.. module description.
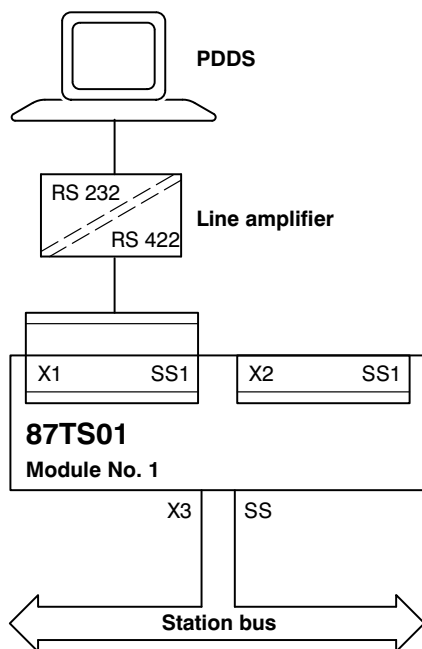
Connection diagrams

The standard cables specified shall be used for connecting the module.

Combination of one 87TS01 module and one PDDS on the station bus

The PDDS may be connected to connector X1 or connector X2.

The use of a standard cable ensures that an RS 422 interface is available at the connector. For call−up by the PDDS, coupling module number 1 must be set.

Ordering Data

Order No. for the complete module Type: 87TS01−E/R1545 Order No.: GJR2368900R1545

Order No. of plug−in memory modules Position: A401 Order No.: GJR2352840Pxxxx
A106 GJR2352841Pxxxx
A108 GJR2352842Pxxxx

Pxxxx = Position number according to the latest program ver-
sion.

Standard accessories

Signal cable for line amplifier max. length 500 m Cable assignments depending on the line amplifier used.

Signal cable for PDDS max. length 15 m Cable assignments depending on the line amplifier used.

Technical data subject to change without notice!

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