FUJI ELECTRIC

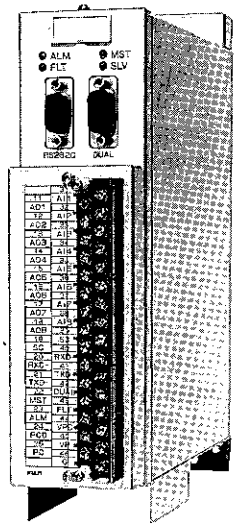
FFI SYSTEM

MASTER STATION (RACK MOUNTING TYPE)

DATA SHEET PNT

This instrument has functions for converting optical signals from FFI system field instruments to electric signals, and for converting electric signals to optical signals for the field instruments.

It is a rack mounting type master station. It has an ability of RS-232C transmission and of duplex configuration.



FEATURES

1. **Connection up to 8 field instruments**
   By using an optical transmission line or optical distributor line (RS-422), the data from up to 8 field instruments can be connected to a receiving instrument via the master station.
2. **Easy interface with control and supervisory equipment**
   Since data tranceived with field instruments by optical digital transmission is converted to analog signals or digital signals, it can be readily connected to various receiving instruments.
3. **General-use transmission interface available (option)**
   RS-232C transmission interface is available for the master station. This interface allows a personal computer or a control device to collect the data of field instrument or to set the parameters of such devices.

SPECIFICATIONS

Functional specifications

1. **Interface with field instruments**
   Acquires field instrument data or RAS information. Both optical unit type and optical distributor type are available.

   FFI line: Optical unit type; half-duplex bidirectional optical transmission using a single optical fiber
   Optical distributor type; RS-422 interface by way of optical distributor (PSK)

   No. of transmission lines:
   1 channel (up to 8 field instruments can be connected)

   Transmission distance:
   Optical unit type; up to 1.2km between master station and field instruments
   Optical distributor type; up to 50m between master station and optical distributor

   Transmission cycle:
   Transmission with field instruments at intervals of 0.2 seconds.

2. **Interface with receiving instrument**
   Converts optical digital signals from field instruments to analog output signals, and also converts received analog input signals to optical signals for field instruments.

   Analog input signal:
   8 points (non-isolated)
   1 to 5V DC, input resistance; 1MΩ or more
   Absolute max. input; ±30V
   Resolution; 12 bits
   Overall accuracy; ±0.2%FS
   Conversion speed; 200ms/8 points

   Analog output signal:
   8 points (non-isolated)
   1 to 5V DC, output resistance; 1Ω or less
   Allowable output current; 2mA
   Resolution; 10 bits
   Overall accuracy; ±0.2%FS
   Conversion speed; 200ms/8 points

   Digital input signal (used only when duplexing):
   1 point (photocoupler isolation, dielectric strength 500V AC for 1 minute)
   12V DC or less signal ON, 20V DC or more signal OFF (input current approx. 13mA/24V DC)

   Digital output signal:
   3 points (photocoupler isolation)
   Open collector; transistor output
   Output rating; 30V DC 100mA
   FLT; main unit CPU fault
   MST; FFI transmission normal
   ALM; field transmission fault (8 points together)

3. RS-232C interface (option)
   Transmission method:
   Polling/selecting, half-duplex non-modulated bit serial
   Synchronous system:
   Start-stop synchronization
   Code format: Binary format
   Signal level: Complies with JIS C 6361 (EIA RS-232C)

Signal level	Data signal	Control signal
12V ± 2V	0	ON
−12V ± 2V	1	OFF

   Transmission speed:
   9600 bps, character length 8 bits, 1 stop bit, no parity bit
   Transmission distance:
   50m or less
4. Indication function (LED lights up on instrument front)
   FLT: Lights up when fault occurs
   ALM: Lights up when field instrument faulty
   MST: Lights up when operating
   SLV: Light up at standby (when duplexing function provided)
5. Duplexing function (option)
   If primary master station becomes faulty in a duplex configuration, the standby station will operate and continue to provide analog output and the transmission with the field instruments.
   - If a stoppage occurs (internal processing stopped) during duplex operation, then the power of the master station must be turned off once in order to resume the power on status. A switch is therefore necessary for cutting off instrument power to the exterior.
6. Usage conditions
   Power supply: 24V DC (20 to 30V DC)
   100V AC (85 to 132V AC) 50/60Hz
   200V AC (187 to 264V AC) 50/60Hz
   Power consumption:
   Approx. 9W (with DC power),
   Approx. 15VA (with AC power)
   Dielectric strength:
   500V AC (DC power supply) / 1500V AC (AC power supply) for 1 minute
   Insulation resistance:
   100MΩ or more at 500V DC
   Ambient temperature:
   0 to 45°C
   Ambient humidity:
   90%RH or less (non-condensing)

Structure and materials

Enclosure: Steel plate casing
Finish color: Silver (melamine resin coating)
Outer dimensions (H × W × D):
247 × 59 × 235mm
Weight: Approx. 2kg
Mounting method:
Mounted on panel front (using screws)
Input connection: Optical unit type; Via Fuji's prescribed optical cable and optical connector (must be prepared separately)
Optical distributor type; Via front panel screw terminals (M3 screw)
Power supply, ground, DI, DO, AI connection:
Via front panel screw terminals (M3 screw)
RS-232C connection:
Front panel connector (D-SUB 9 pins)

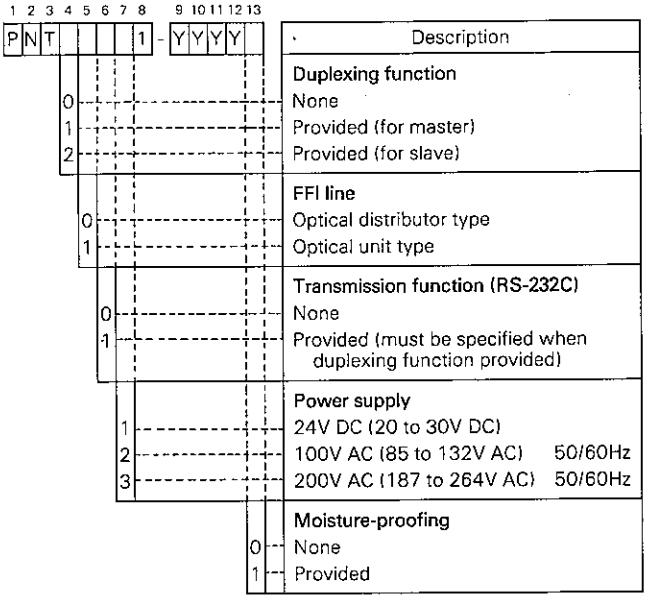
SCOPE OF DELIVERY

Master station (excluding optical cable, optical connector, opposite side connector for RS-232C, and synchronous signal cable for duplex configuration)

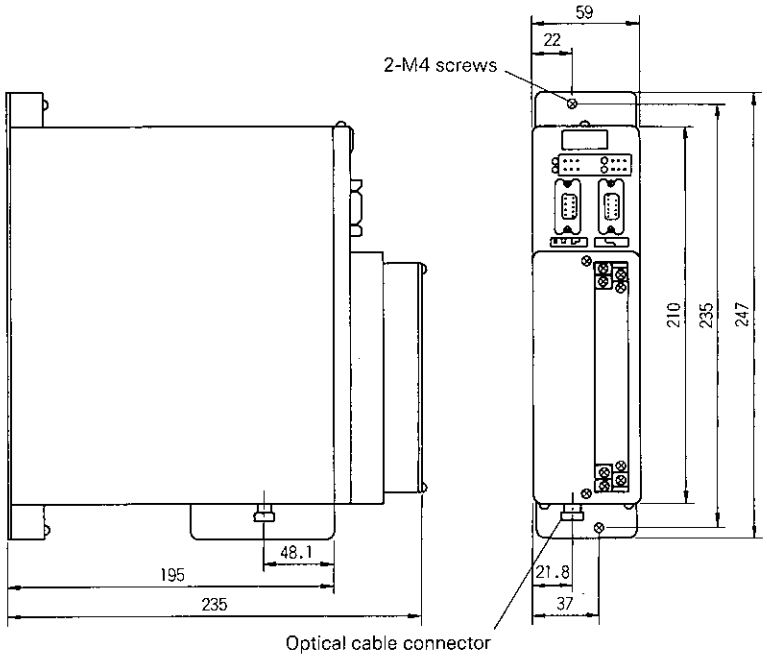
RELATED DEVICES

- Optical fiber type transmitter
- Optical star coupler (EDS8-43)
- Optical distributor (EDS9-48)
- Optical cable, optical connector
- Duplex switching unit (PWK1: with RS-232C)
  (PWK2: without RS-232C)

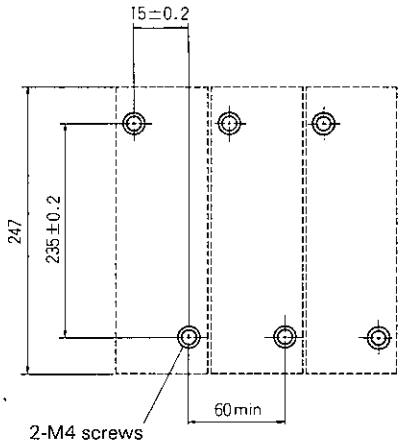
CODE SYMBOLS



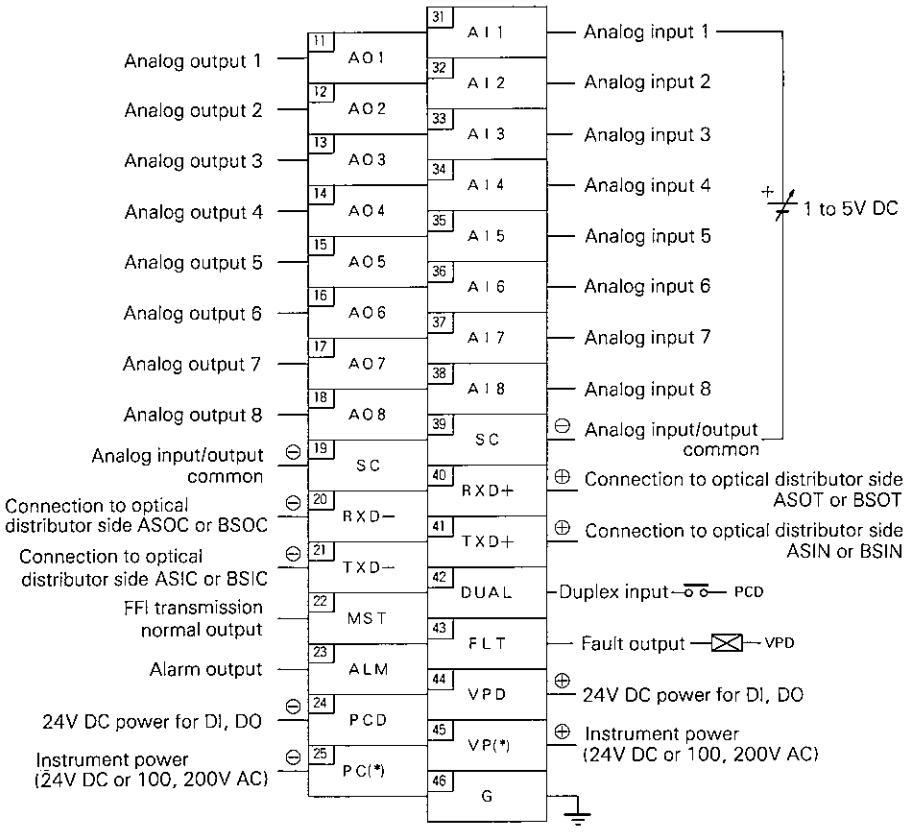
OUTLINE DIAGRAM (Unit: mm)



Mounting dimension

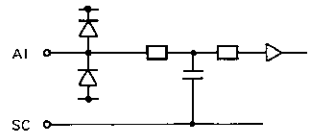


CONNECTION DIAGRAM

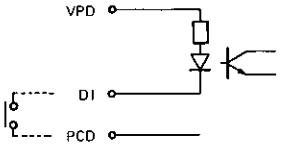


Note * : Sign is AC in case of AC power.

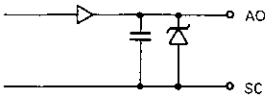
Analog input circuit configuration



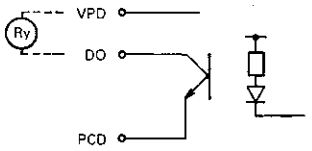
Digital input circuit configuration



Analog output circuit configuration

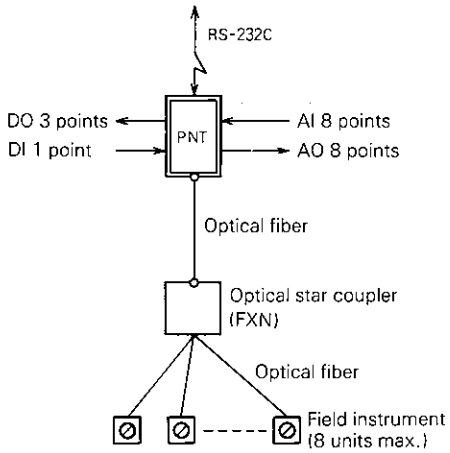


Digital output circuit configuration

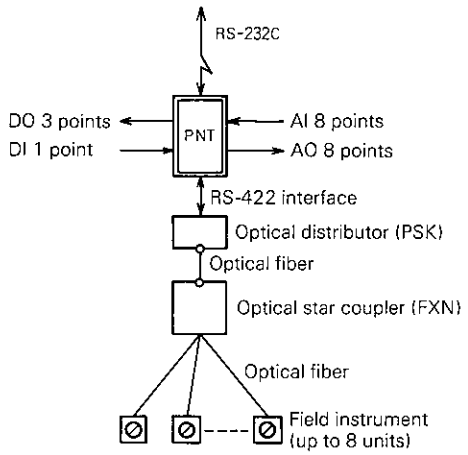


SYSTEM CONFIGURATION DIAGRAMS

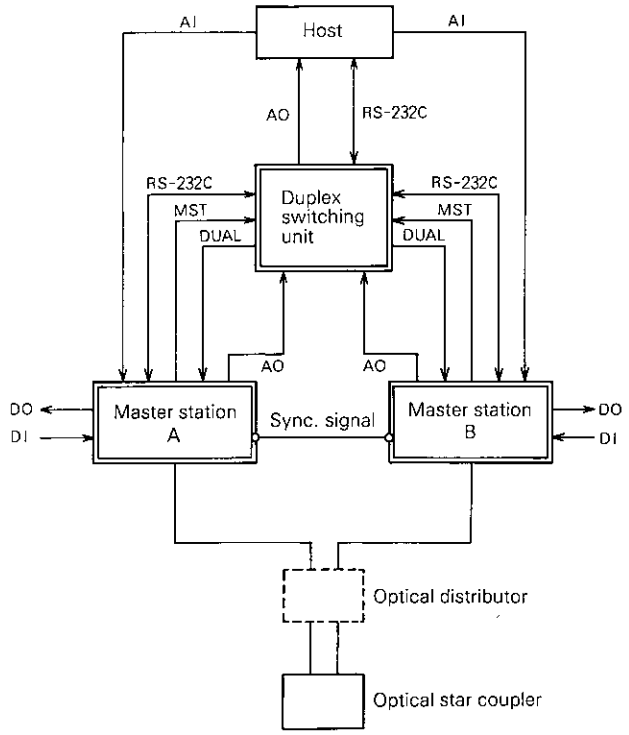
1. Optical unit type



2. Optical distributor type



3. Duplex system



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