

MiCOM Alstom P591/2/3

Interface units

P591/2/3 units provide functions for simple diagnostics and testing and are easily configured via switches



CUSTOMER BENEFITS

- Flexibility to use current differential protection over integrated services digital network (ISDN) multiplexers and modem connections
- Loopback facilities to simplify the differential scheme test
- Visual indication for easy diagnostics and testing

The MiCOM Alstom P591, P592 and P593 units are standalone fibre optic to electrical communications interface units

They allow connections between P54x current differential relays and remote Pulse Code Modulation (PCM) multiplexing equipment, broadband modems or similar telecommunications equipment using 64 kbit/sec data channels (conforming to ITU-T recommendations V.35, G.703 or X.21. G.703 with 2Mbit/s is also supported).

MODELS AVAILABLE

- P591**- Fibre optic to electrical signal G.703 (co-directional) 64 kbit/s or 2 Mbit/s
- P592**- Fibre optic to electrical signal V.35
- P593**- Fibre optic to electrical signal X.21

APPLICATIONS

One P591, P592 or P593 unit is required per data channel (for each transmit/receive signal pair). The interface unit is usually located close to the PCM multiplexer and provides optical/electrical and electrical/optical signal conversion between a MiCOM Alstom P54x relay and the telecommunications equipment, which can be up to 1 km away and interconnected by 850 nm multi-mode fibre cables.

The P543 to P546 relays can be deployed on communications links where the multiplexer interfaces with a Synchronous Digital Hierarchy (SDH or SONET). Note that in these applications the conventional propagation delay measurement may be unreliable due to switching, thus GPS time synchronisation is required. A P594 interface unit can provide synchronising signals for up to 4 MiCOM Alstom relays within a substation (Please see the P594 sales brochure for more information). P591/2/3 interface units are housed in a 10 TE case and are suitable for flush mounting.

FIBRE OPTIC CONNECTIONS TO P54x

Fibre optic connections between the relay and interface units are made through BFOC 2.5 (ST®) type connectors. The optical devices used are designed for short-haul communications and operate with a nominal wavelength of 850 nm (The levels of fibre optic radiation emitted from these interface units are not hazardous).

CONNECTIONS TO G.703

ITU-T G.703 co-directional electrical connections to the P591 interface unit are made via the terminal blocks at the rear of the device (G.703 at 64 kbit/s and 2 Mbit/s are supported). The G.703 signals are isolated by pulse transformers to 1 kV. Since the G.703 signals are only ± 1 V magnitude, the cable connecting the P591 unit and the multiplexer must be properly screened against electromagnetic noise and interference.

The interface cable should consist of pairs of 24 AWG (19/0.12 mm), twisted and shielded, and have a characteristic impedance of about 120 ohms.

The choice of grounding depends on local codes and practices. It is recommended that the interface cable shield be connected to the multiplexer frame ground. The cable may be connected to the P591 case ground if no ground loop current is expected. External connections of the P591 are shown in Fig.1.

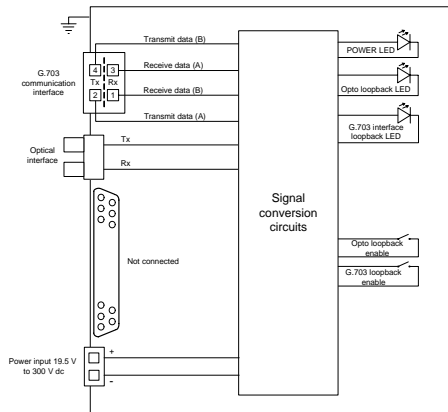


Figure 1 P591 connections to ITU-T G.703 (co-directional)

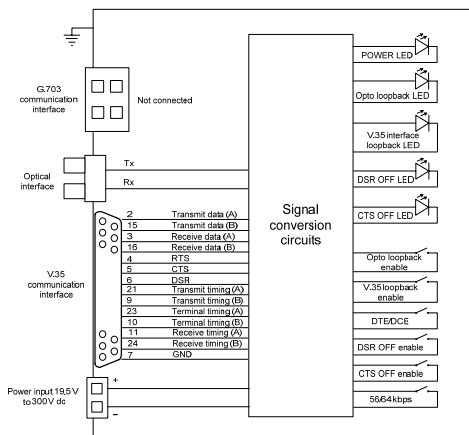


Figure 2 P592 connections to ITU-T V.35

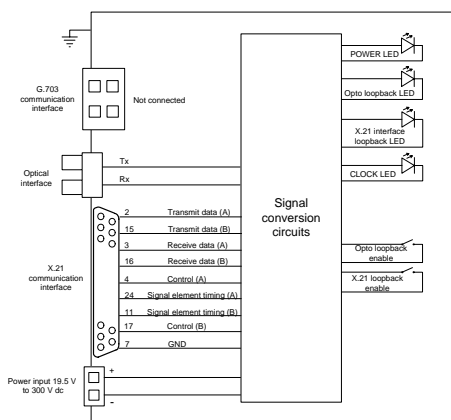


Figure 3 P593 connections to ITU-T X.21

CONNECTIONS TO V.35

ITU-T V.35 electrical connections to the P592 interface unit are made via a D sub-miniature connector at the rear of the device. Since the V.35 signals are either of ± 0.55 V or ± 12 V magnitude, the cable connecting the P592 unit and the multiplexer must be properly screened against electromagnetic noise and interference. The interface cable should consist of pairs of 24 AWG (19/0.12 mm), twisted and shielded, and with a characteristic impedance of about 100 ohms. The choice of grounding depends on local codes and practices.

It is recommended that the interface cable shield be connected to the multiplexer frame ground. The cable may be connected to the P592 case ground if no ground loop current is expected. External connections of the P592 are shown in Fig. 2.

CONNECTIONS TO X.21

ITU-T X.21 electrical connections to the P593 interface unit are made via a D-subminiature connector at the rear of the device. The use of twisted pairs of 24 AWG (19/0.12 mm) stranded cable, foil shielded and with drain wire is recommended.

Due to the similarities between EIA449 and X.21, the P593 may also be suitable for connection to EIA449/EIA422 equipment. External connections of the P593 are shown in Fig.3.

For more information
please contact Alstom Grid:

Alstom Grid Worldwide Contact Centre
www.alstom.com/grid/contactcentre/

Phone: +44 (0) 1785 250 070

Visit us online: www.alstom.com

DEVICE TRACK RECORD

P591/2/3 interfaces are derived from the successful MITZ01, MITZ02 and MITZZ03 interface units.

Over 3,540 MITZ01, MITZ02 and MITZZ03 units delivered since launch in 1986.

Over 14,000 P591/2/3 units delivered since launch in 2001.