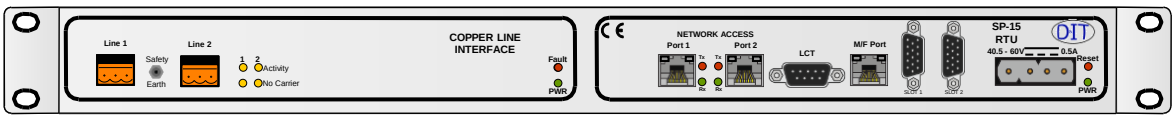
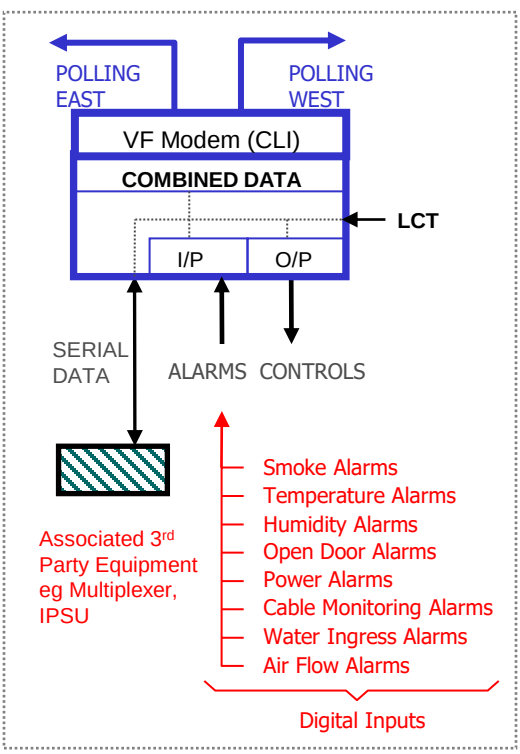
SP-15 Remote Terminal Unit With Copper Line Interface



- **1U Compact Rackmount Construction**
- **Local or Remotely Manageable**
- **Integral Input/Output Functionality**
- **Serial management interface to Associated equipment**
- **Configurable features**
- **Various Polling Options**
- **Back to Back RTU Operation Option**



This SP-15 Remote Terminal Unit (RTU) with Copper Line (CLI) facilities provides similar facilities to the standard SP-15 but includes VF modems (LHS) allowing the SP-15s to be interconnected using copper cable or VF transmission circuits (e.g. PCM/TDM VF Circuits). Copper Line distances up to 16 km can be supported. It provides a cost effective solution to integrate third party equipment(s) with proprietary protocols into a common management solution. Additionally a number of control outputs and alarm inputs, can be accommodated.

Communications with the RTU can be by means of auxiliary or overhead working channels at a number of data rates. Resilience can be accommodated by using a ring configuration, where the RTU is polled from either East or West direction.

A system deploying SP-15s may be configured to support remote transparent access, enabling third party equipments to be managed remotely from a management centre.

Product Overview

The SP-15 RTU primarily operates as an intelligent alarm gatherer and control element within a Network Management System (NMS). Its ability to operate with a variety of communication protocols enables its installation in a wide range of locations.

The D&IT Microsoft Windows™ based Network Management System may be used to configure the system elements, and supports the subsequent remote monitoring, management and control of the inter-connected network system equipment. In addition, the extensive set of alarms that can be created, showing system status, provide an essential aid to network maintenance. Simple back to back operation between two RTUs is also supported using different software.

The SP-15 RTU has a single Multifunction Port, which can be utilised to connect to third party equipment or to act as the access port to other RTUs in a spur configuration. The ability of the RTU to connect to third party equipment is an important function of the RTU. The remote interfacing to third party equipment enables the inclusion of the Remote Terminal Windows (RTW) access to its management functions which can be displayed on the Graphics Display Terminals of the NMS.

Operation

The SP-15 RTU is an intelligent device which, after initialisation, stores its configuration in non-volatile memory. When first switched on, the RTU runs internal diagnostics and then listens for further instructions on its dedicated polling ports. Any given SP-15 will only respond to messages containing its own specific address. All other messages are ignored and passed on to the next unit.

When specifically addressed, the RTU responds in one of four different ways depending on the current RTU status. When an RTU, which has not been initialised, is polled it responds with a special message. This message informs the Network Management System that a sequence of messages is required, which correspond to the particular RTU parameters, as defined in the RTU Database. On receipt of these messages, the RTU reverts to normal operation.

In a stable or quiescent network environment the most usual event on polling is that the RTU has no alarms to report. In this case, the response is a short 5-character message and polling of the next RTU takes place with the minimum delay. This is known as “exception polling” and the technique is fundamental in achieving the very fast polling cycles that are inherent in the D&IT system.

When the RTU does have alarm data to report when polled, the unit returns a message that includes a full status report.

The fourth type of message is a routine full status check that the RTU sends periodically, defined by the Auto-Verify period. This purely time-based report, provided at a user selectable period, is used to verify database correlation after successive “nothing to report” polling messages.

The SP-15 unit can also be configured (using different software) for back-to-back operation, communicating across cable or VF Voice circuits via the on-board VF Modems. Typically, the D&IT monitoring system is required to detect a set of contact closures at the originating site (SP-15 RTU) and extend these states across an existing transmission system (or copper cable) to a remote SP-15 unit where the equivalent contact closures (in the form they were originally created) will be provided for local engineering use.

Input/Output

A high degree of flexibility is ensured by the modular nature of the connectivity designed into the SP-15. The RTU control board itself has two slots provided for the fitting of ‘Plug-in-Modules’ (PIMs). Other options include the Copper Line Interface which support Copper Cable distances up to 16 km. The line interfaces are available in standalone format.

Standard I/O modules include an eight channel optically isolated input card and a fail-safe four relay output module.

SPECIFICATION

Enclosure	1U (1.75") Aluminium ventilated enclosure
Rack Practice	19” – alternative brackets available
Weight	1.4 kg
Connectors	
LCT	1 x 9-way ‘D’ male (RS232)
Polling Ports	2 x RJ45 (RS232 or RS422)
Multi-function Port	1 x RJ45 (RS232 or RS422)
Copper Lines 1& 2	2 x 3 way Klippon connector (VF) - 1 for each of the 2 Line ports
Power	4-way Trident
Power Supply	24V/48V nominal (20V to 68V, 72V without damage), positive or negative ground permitted
Power Consumption	8W Max
Status Indication	12 LEDs on front elevation (6 on LHS unit and 6 on RHS unit)
Polling Speeds	1200, 2400, 4800 or 9600 baud
I/O Modules	Physical provision for two modules (on main unit)
Environmental	Meets the appropriate requirements of EN300-019 EEE producer registration number WEE/BH2828WV
EMC	Meets the requirements of BS EN 55022 (Emissions) and BS EN 55024 (Immunity)
Safety	Meets the requirements of LVD 73/23/ECC (EN 60950)

WEE/BH2828WV

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