

Transparent Ready System approach Electrical distribution application

Transparent Ready Power Equipment

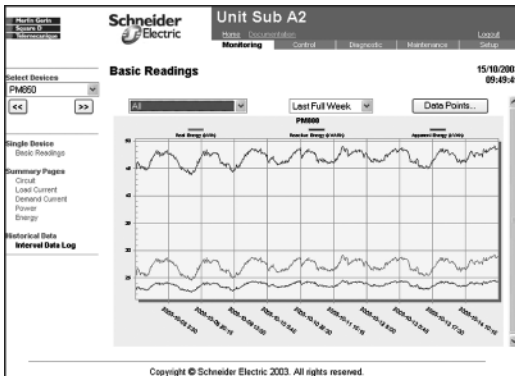
The application of Transparent Ready in electrical distribution power equipment is based on the concept of the Transparent Ready Power Equipment offer.

This is an optimized architecture in which the Transparent Ready services are mutualized within the EGX gateway, while providing communicating products built into the electrical equipment (switchboard) with transparent connectivity for any Modbus client on TCP/IP.

Once the parameters of the EGX gateway have been set, the user therefore has the benefit of very simple (see below) ready-to-use functions such as:

- The display of summary pages on instantaneous measurements and the status of the electrical equipment.
- The display of detailed electrical data on all circuits (rms current (A), actual power (kW), power factor, active and reactive powers, etc).
- The logging of standard data, power, trends, etc.
- The display of logs.
- Exporting data tables in standard Windows format.

The Web server embedded in the electrical equipment does not interfere with the Modbus communication flows from the Modbus clients on the Ethernet network.



Web Page Generator (WPG)

The Web Page Generator is a software tool for creating Web pages, designed for the commissioner of the Transparent Ready Power Equipment. Its purpose is the automatic creation of Web pages, according to the actual configuration of the electrical switchboard.

It includes a library of electrical distribution and motor control products such as:

- PM 800/500 power meters.
- Micrologic digital protection relays (Masterpact).
- Sepam 2000 and Sepam 20/40/80 digital protection relays.
- CM 3000/4000 circuit monitors for measuring and analyzing power quality.

The Web Page Generator software also supports:

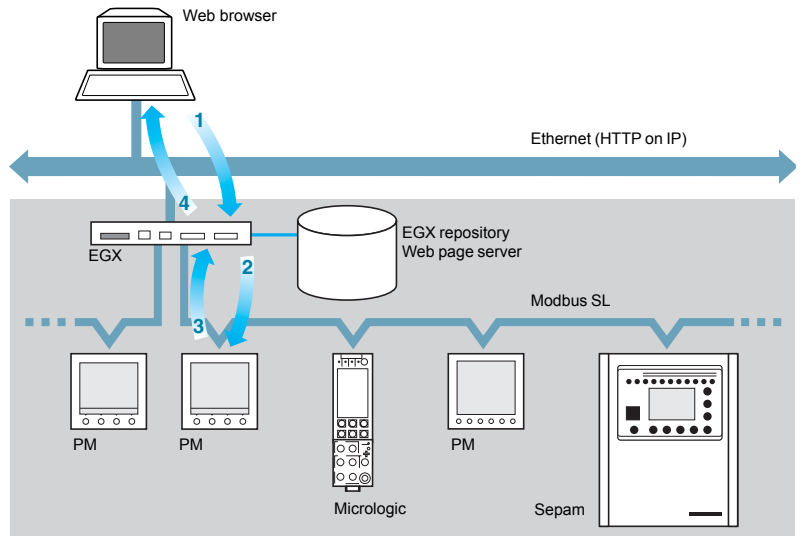
- Motorlogic Plus relays, Motorpact medium voltage motor controllers (Trademark Square D).
- TeSys model U starter controllers, ATV 31/58/68 Altivar variable speed drives, ATS 46/48 Altistart soft starters (Trademark Telemecanique).

It automatically creates the corresponding Web pages for each of the products connected on the Modbus (SL) serial link built into the electrical equipment and declared by the installer. It also automatically produces summary pages, providing the operator with an overall view of the status of his equipment. It also integrates an FTP client in the EGX gateway, which authorizes the immediate downloading of the HTML pages that have been created.

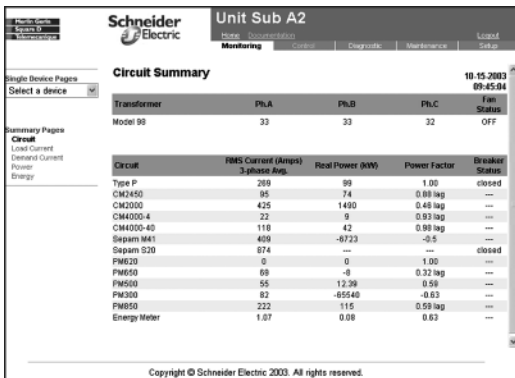
The level of knowledge required to carry out these operations has been set at a deliberately low level.

The operating mechanisms of the Web pages created in this way are described on page 48289/4. The HTML pages produced are standard format which can be edited further if necessary, using standard word processing or HTML tools.

Mechanism for dynamic reading via the Web



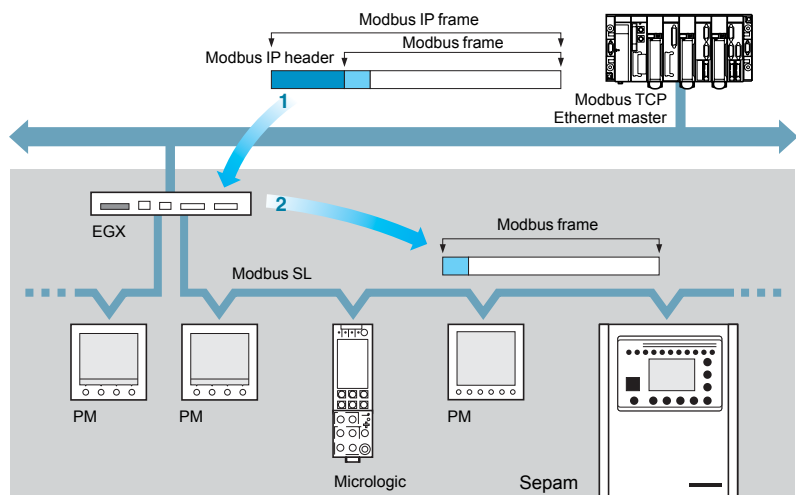
The EGX gateway uses HTML language for serving the Web pages containing dynamic values associated with the products on the Modbus SL link, and is thus compatible with all Web browsers. This mechanism is totally transparent for the user.



When HTML pages are created, each dynamic data location in the page causes a “<PL>tag” to be inserted which specifies the characteristics of the Modbus service required for finding the value of this variable, as well as presentation data for this variable (Modbus function code, Modbus address, register number, LSB order, unit). When the Web page is viewed (action 1, reception of an HTTP request from the Web client), the EGX gateway analyzes the contents of the requested Web page, detects any “<PL> tags”, then executes the Modbus services required for reading the dynamic variables (actions 2 and 3), fills in the HTML page accordingly and sends it all back as if it were a static page (action 4). The HTML page is displayed on the browser screen.

The page is automatically updated by the browser every 5 seconds.

Transparent access mechanism via Modbus messaging



When accessing product data on the Modbus SL link, via Modbus messaging, the gateway has no added value other than translating addresses, encapsulating and unencapsulating Modbus frames, whatever function code is used (transparent data access).

The gateway thus provides products on the Modbus SL serial link with the Ethernet pass band and a multi-master operating capability. The latter function is also effective when the Modbus master is connected directly to one of the two Modbus SL ports on the EGX gateway (configured this way).