

TRANSFORMER LOGGER AND MONITOR

- NETWORK WIDE ACCESS PLATFORMS

Network engineers are facing challenges to provide reliable and secure supply whilst maximising the use of existing infrastructure. Furthermore, regulatory power quality requirements are to be complied with. The Miro-F Transformer Monitor and Logger is easily installed and provides multiple access platforms to accommodate different communications requirements for the efficient retrieval of network data.

To achieve reliable and secure supply, network engineers need to know how transformers are performing and when/where proactive action should be taken. The Miro-F provides engineers with information for: planning; operations; maintenance; and network modelling. Information includes V, I, P.F, THD, Sags, Swells, Interruptions and other power quality measurements.

A typical Australian utility will have thousands of distribution transformers in its network with a mix of pole-tops and kiosks which can vary in capacity, typically ranging in size from 15kVA to 1,500kVA. The Miro-F provides access platforms intended for secure monitoring of large scale networks; hence ideally suited for Australian networks.

NETWORK WIDE ACCESS PLATFORMS

The following provides a brief description of the various access platforms offered by the Miro-F. All the access platforms described below are supported via IP over 3G/4G Cellular and Ethernet networks.

Manual TCP/IP:

A connection is made to each Miro-F using a TCP/IP connection (as provided by the Citrus software platform). Inserting a static IP address provides a transparent connection which allows: Configuration; Downloads of logged data; Firmware updates; and Security (SSH encryption & authentication).

Automatic FTP Uploads:

Individual Miro-F devices initiate an FTP Upload connection to a server. Full power quality data including Event captures are pushed

periodically to the FTP server, to be viewed and analysed by Citrus. This system features: periodic push of data; and Security (FTPES - FTP with explicit TLS).

Citrus Data Retrieval (CiDR):

CiDR is an automatic data collection service that is installed on a server and polls Miro-F devices to retrieve data. System features: Time synchronisation (server); Pulls data periodically (server initiates connection); Configurable download period; Automatic conversion to PQDIF; and Security (SSH encryption & authentication).

SCADA - DNP3.0:

Analogue and binary data points from the Miro-F device are polled periodically by the SCADA master and stored in a database, ready for interrogation and analysis. System features: Time synchronization (SCADA Master); Analogue dead-bands; Automatic reconnection; and Security (DNP3.0 Secure Authentication).

The list of data points is scalable and can include a number of desired measurements. Examples of analogue data points include: Voltage (L-N, L-L), Current (L-N, L-L), Harmonic magnitudes, THD, Flicker (Pst, Plt), Power (W, Var, VA), Power Factor, Temperature, Voltage (min, max), Current (min, max), Voltage (10 cycle rms), Current (10 cycle rms). Examples of binary data points include: IEC defined events (Dip, Swell, Interruption) and single-phase outage.



Transformer Monitoring Made Easy



MIRO-F

- The Miro-F Transformer Monitor and Logger is a precision power quality instrument, intended for permanent installation and specifically designed for comprehensive and reliable LV side transformer monitoring.
- Measures three phase voltages, four currents (three phases and neutral) and two temperatures.
- Integrated Wi-Fi and Cellular (3G/4G), provides platforms for TCP/IP, FTP and DNP3.
- Suited for large scale network asset management. Provides network critical information for planning, operations, maintenance and network modelling.
- Back-plate and magnetic feet for quick and easy installation. The weatherproof design (IP66) enables installation on pole-top transformers.

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