The fault recorder is a digital recording device capable of acquiring and simultaneously memorising up to 32 analogue and 128 digital inputs.

All analogue and digital inputs, as well as the power supply are galvanically isolated (from one another and in relation to earth) for up to 2kVRMS.

The digital fault recorder is fully configurable and programmable using a personal computer connected via serial port or Ethernet. The application program of the device can be updated locally and remotely.

The housing is made entirely of steel and fitted with handles; its dimensions are standard for a 19” rack (9 units high, 400mm deep) and it can be supported purely by the fastening screws on the front. The protection level is IP30 in the front and IP20 in the other areas.

Connections are executed by means of screw terminals suitable for receiving flexible conductors up to 4mm² for analogue inputs and up to 2.5mm² for other inputs.

The digital fault recorder is fitted with:

- 24 analogue current inputs with two selectable capacities and measuring range of up to 150Arms;
- 8 analogue voltage inputs with two selectable capacities and measuring range of up to 800Vrms with 0.1V resolution;
- 16 bit analogue acquisition with a 0 to 3 kHz bandpass and sampling frequency up to 10,000 samples per second;
- 128 digital inputs of 24 or 110VCC nominal, acquired at 2500 Hertz and protected from polarity inversion;
- Solid state 256 Mbyte hard disc drive (expandable) capable of containing, at maximum acquisition frequency, more than 100 recordings for a duration of over 150 seconds;
- Two RS232 serial ports and one RJ45 10/100 Ethernet port;
- Time/date display synchronisable via GPS or time signal;
- Status buttons and LEDs on front panel;
- Power supply at 110 VCC ± 20%, protected from polarity inversion.

Two types of data are memorised: Fault recording (oscillograms) and chronologic event recording (CER);

- The fault recordings are triggered under conditions which are fully configurable, namely: Status change of a digital input, surpassing of analogue input thresholds (minimum or maximum rms, drift), logical combinations of previous conditions, pushbutton or PC control. It is possible to connect one or more fault recorders so that when one is started up, the others will follow. The duration of the
fault recording and pre-trigger/post-trigger times can be configured via PC. The recordings are memorised through an effective data compression technique.

- The CER function allows the last 100,000 digital input signal state transitions configured for this purpose to be memorised.

The fault recorder provides for automatic remote transmission of data via Ethernet or modem.

The digital fault recorder is delivered with a PC management program (in a Windows environment) which allows for:

- The complete configuration of the fault recorder with the option of labelling and calibrating the inputs;
- Real-time display of the status of all inputs;
- Selection, downloading onto PC and deleting data, with option to print the results of the acquisitions and recordings; downloading can be selected according to manual mode, automatic mode based on time or automatic mode based on memory occupation threshold.
- Display the triggers which generated the recordings and their key characteristics;
- Interpretation and display of oscillograms with option to: Select the graph outlines to be displayed, evaluate amplitudes at different times, display a window for each outline or several outlines (analogues and/or digital) within the same window, manually operate amplitude zoom on a single outline or all the outlines of the same kind, activate time cursors and zoom between the two cursors;
- Perform an FFT analysis and other functions which are typical of numeric analysis of sample signals (punctual measurements and rms, calculation of P and Q, harmonic calculation and THD, vectorial calculation and display including direct, inverse and homopolar sequence components);
- Export and import files in COMTRADE (standard IEC) and compressed formats.

The product complies with the specifications of ENEL DV1047A2-NC.