RM 232 Adapter
For Storage & Transmission of Data

Applications

- Data logging
- Data processing
- Data analysis
- Data recording
  Y(t) recorder
  XY recorder

Product Features

- Storing Data in Offline /online mode
- Transmission of data to PC in Online mode via RS 232 serial interface.
- Simultaneous viewing of up to 6 parameters through 6 Rish multi RM 232 adapters in Data logger mode.
- Optically isolated transmission from multi meter to adapter.
- Easy parameter setting manually and through PC
- Graphical analysis of data through y-t & X-Y mode

Ziegler RM232 Adapter

The storage adapter RM 232 when attached to the hand-held RM series 12S…18S multi meters permits direct transmission of measured data (Online) of a single or more Rish Multi meters to a PC .On-site data storage without PC is possible in offline mode of adapter and Data can be downloaded to PC afterwards. The data is synchronized by a integrated clock for real time application.

Memory : 128 kB (corresponds to approx. 200000 meas. Values). Saving of the measured values according to difference value procedure (compressed).

Operation

RM 232 Adapter has LCD-segment-display unit and 4 keys. Nearly all parameters can be set manually or by means of the interface via a PC.
In On-line mode (on address) the adapter transfers data received from multi meter (without storing in its internal memory) to a PC over RS 232 serial interface.
In Off-line mode (store mode), the adapter stores data received from multi meter in its internal memory (with PC).This data can be subsequently uploaded to a PC from internal memory of the adapter..
In both these modes sampling rate can be chosen from 50 ms…60 Seconds. Various parameters like sampling rate, hysteresis, etc. can be set manually from the front 4 keys or via PC using PC-mode.

Sampling

Sampling is dependent upon the selected signal hysteresis setting. This sampling method results in an expansion of virtual memory, which is dependent upon measurement signal hysteresis. Thus storage capacity can be substantially increased (10 to 100 times). Within the sampling rate of 5 seconds to 60 seconds, the adapter stores the reading after acquiring the data & immediately goes in to the standby mode for the reminder of the sampling interval and thus lengthens battery service life. Signal acquisition is interrupted during the rest period for this reason. Thus the functional principal can be compared to that of point recorder.
Sampling rate adjustable from: 50ms…1 minute for RM 232 adapter.

Interface packs

An interface pack can connect one or more RM 232 adapter with a
PC. It contains all hardware and software components required to configure a
PC measurement system.

Single channel storage pack
1 Storage adapter RM 232
1 RS-232 bus cable, 1.5 m long
1 CD With Software
1 Copy of instruction manual of Rishcom 100

Four-channel storage pack
4 Storage adapters RM 232
1 RS-232 bus cable , 2 m long
1 CD with Zicom 100 Software

1 Copy of instruction manual of Zicom 100

Configuration of a multi-measurement system (on-line and off-line)

To configure a powerful multi-measurement system up to six RM 232 can be interconnected and connected to a PC on-line via a standard interface cable (RS-232C) and/or up to ten devices can be operated off-line.
Each adapter can manually be provided with a specific address for communication.

Configuration of a multi-measurement system for 4 Adapters

- Four Ziegler RM Series 12...16,18 Multi meters With Storage adapters are cascaded
- Each of the measurement values is transmitted via infrared light to the RM 232 storage adapter through the closed, electrically isolated Multi Housing
- This pack can be connected to a PC through RS 232 interface.

Zicom 100 Software for Data Analysis & Recording
Zicom 100 software (can be run with DOS or WINDOWS) is used for the processing and representation of measurement data on a PC. Sampling in the on-line mode can be performed manually with an adjustable sampling interval, or dependent upon signal dynamics (with adjustable signal hysteresis). Storage in the ASCII format is controlled with two trigger thresholds per measurement channel, as well as with the internal clock.
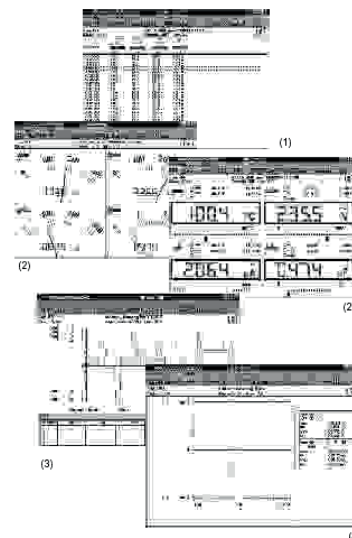
Data logger (Figure 1)

The acquired data is continuously shown on the screen in the form of clear table.

Multi meter (Figure 2)

Transmitted measurement values from a maximum of 4 freely selectable channels are digitally displayed at the monitor, and represented in an analog /digital or analog + digital Format during on-line operation.

Y(t)recorder (Figure 3)

The acquired measured values are shown on the screen as time diagram with horizontal time axis and measured with a cursor. Stored signals can be zoome in amplitude and the time axis and/or compressed ("zoom"). The time scale can be presented in absolute time or relative measuring time.

X-Y recorder (Figure 4)

The acquired data are shown on the screen on-line as X-Y diagram and measured with the cursor. Same as in all other form of presentation, all scales can be freely selected.

Math function with powerful arithmetic can analyze, link and display measured data on-line and off-line.

Sampling

In case of Online mode, sampling can optionally be performed
* Manually sampling : With mouse click
* Auto sampling : With selectable interval 50 ms…1 hour or
* Delta Sampling : With selectable interval 50 ms…1 hour and settable hystersis (0…500 digits)

The data can be stored on level Trigger and/or Time Trigger. Also it is possible to store Data automatically as multiple files.

Data processing

The measured data can further be processed by means of a powerful computer function and by linearization functions.
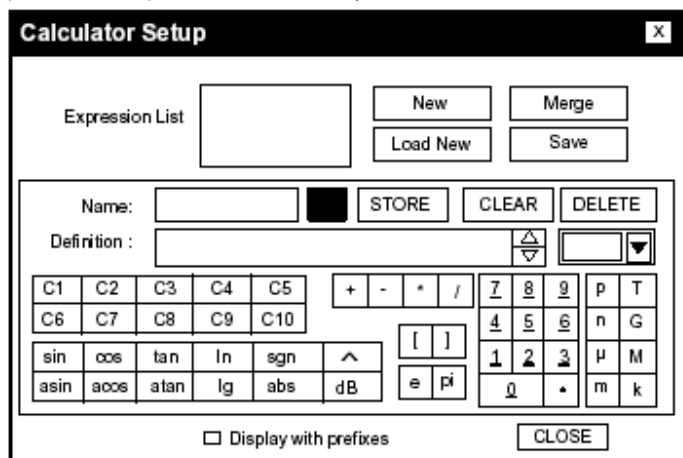
Thus it is possible, for example, to present mA signals from sensors or transformers directly in print values as active power, and many more

Parameter Setting for the RM 232 Storage Adapters

The storage adapters can be set manually via the front keys or via the serial interface of the PC. By transmission, of the time from the computer, as many as ten adapters can acquire measured data synchronous with time. Values for minimum and maximum triggering, recording time and post-trigger time can easily be set. Also the beginning of the measurement is controlled via the crystal clock of the memory, just as is scanning rate and signal hysteresis.

Specifications

Supported Measuring Instruments

Ziegler RM 12...16,18 from Ziegler Insrumens

Operating Elements

LCD-segment-display unit, 4keys.

Nearly all parameters can be set manually or by means of the interface via a PC.

Memory Capacity

128 KB CMOS with battery backup. Measured values are stored according to the differential value method (compressed) with adjustable hysteresis. The number of values stored depends on the nature of input and the variations in the input. If more changes occur in the input, less readings are stored or vice-versa. Approximately 200000 measured values are stored if sample rate is less than or equal to 50 msec, if hysteresis is set to 0 and if changes in input are minimum.

Real-time Clock

Battery buffered real-time clock.
Max. deviation: 1 min / month.

Interface

To the multi meter

Optically unidirectional receiver, wavelength 950 nm, 8192 baud, 8 bits, no parity, 1 stop bit

To the PC

Normal, bi-directional, 9600 baud, 8-bits, no parity, 1 stop bit

Baud rate

Adjustable (via interface command and keyboard to 19200 or 38400 Baud)

Number of Adapters

A maximum of 10 data memory adapters interlinkable. With simultaneous data recording (online) the number depends on the set baud rate:
 A maximum of 6 adapters with a baudrate of 19200 baud;
A maximum of 4 adapters with a baudrate of 9600 baud;

RS232 Serial Port (9 Pin Connector)

Pin 9 of RS232 interface is used for synchronizing linked up adapters in the PC operation.
Pins 4 and 7 have to be set on logic 1 by the PC and are used for power supply of the data memory adapter. In the data memory adapter electricity is drawn from this supply up to a minimum level of 5 V; if the level is lower electricity is drawn from battery.
Pin 3 (PC TXD) is used for the negative level generation of the RS232 interface signal PC-RXD. With exception of Pin **1** and the synchronization pin **9 ,** all interface pins are looped to further data memory adapters.

Power Supply

Battery

2 x 1.5 V mignon cells
dry cells as per IEC R6 Type 3006   1100 mAh

Alkali-Manganese acc. To IEC LR6 Type 4006   2300 mAh

Operational duration

Alkaline-Manganese cells switched off
13500 h = 1.5 years (Without self discharging of the battery)
Alkaline-Manganese cells switched on

Sampling interval rate	Duration (approx.)
5 s	500 hr
60 s	1300 hr

Battery test

Automatic indicator of the symbol "⊣⊢" if the serial battery voltage falls below approx. 2.5 V.

Consumption

The PC does not use up power from the batteries if electricity supply is sufficient (up to approx. 2 memory adapters connected in series).

Temperature Range /Climate Category
Operating Temperature   0 ºC …. +50 ºC
Storage Temperature   -25 ºC …. + 70 ºC
Climate Category   2z/0/50/70/75% in compliance
                               with DIN VDE 3540

Electrical Safety
Device with safety extra-low voltage per DIN VDE 0411
Creepage paths and clearance between poles per IEC 61010/ DIN VDE 0411

Mechanical Design
Housing   Made of electrically conductive plastic
Dimensions   135 x 97 x 39 mm
Weight   approx. 0.25 kg with battery
Interface   to PC:
                 9-pole Sub-D recessed port at left, threaded to closest data memory adapter:
                 9-pole Sub-D recessed port at right, with knurled-head screw

Ordering Codes

Designation	Type	Order code
Single channel storage pack including memory adapter RM 232 Cable & Software	**1 CH pack**	**33027**
Four channel storage pack including 4 nos memory adapter RM 232 Cable & Software	**4 CH pack**	**33028**