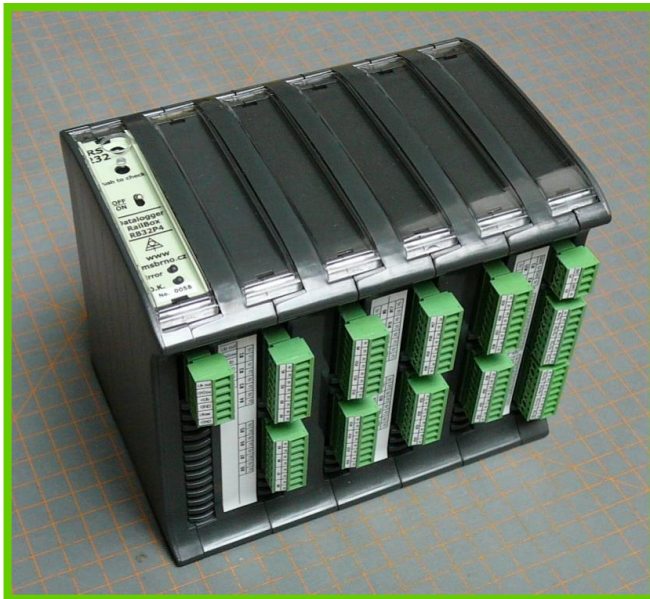




EMS Brno

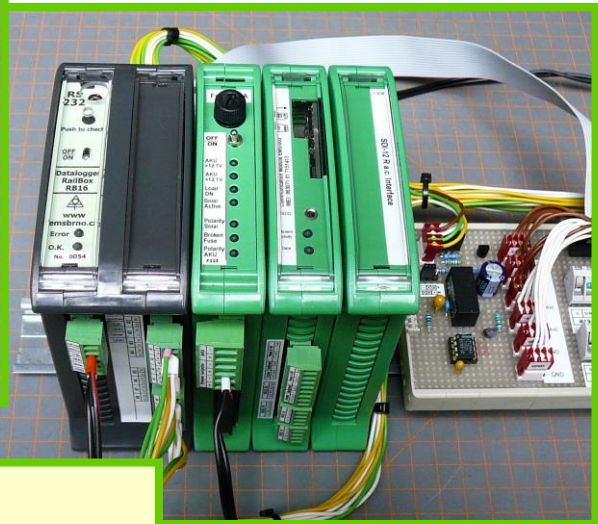
Data Acquisition Environment
Hardware – Software – Cloud application
www.emsbrno.cz

Datalogger RailBox RB line



Main features:

- Modular concept for DIN rail mounting
- Up to 64 voltage inputs and 8 counters
- SDI-12 input
- Additional modules available: Modem, LAN interface, Power unit with solar charger
- Manufactured by EMS



Specification:

- Available models with 16, 32 or 64 voltage channels and 4 or 8 counters
- Supported SDI-12 sensors are virtually handled as any standard (analog) input
- Voltage inputs in eight ranges from 20 mV to 2.5 V
- Sixteen-bit resolution
- Excitation output for connection of 16 or 32 RTD temperature sensors
- Storage capacity 250 000 values
- Measuring and storing interval from 20 sec to 4 hrs
- External power supply 6.5 to 16 Volts
- Programmable switch for external systems

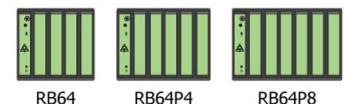
Datalogger line RailBox RB



RB0 RB16 RB16P4 RB16P8



RB32 RB32P4 RB32P8



RB64 RB64P4 RB64P8

Specification

| | |
|--|--|
| Number of voltage channels | 16, 32 or 64 (see RB types table below) |
| Ranges | ± 20 mV up to ± 2.5 V in eight ranges |
| Resolution | 16 bit |
| Accuracy | 0.03% of full scale |
| Voltage limit | maximum +5 V from GND on any input terminal |
| Number of counters | 4 or 8 (see RB types table below) |
| Resolution | 16 bit |
| Max. frequency of pulses | 400 Hz |
| Input | open collector, mechanical switch, TTL (max. voltage 16 V) |
| SDI-12 input | up to 64 sensors, max. 108 logged variables |
| Datalogging part: | non-volatile memory, 512 kB (optionally 1024 kB) |
| Capacity | 250,000 (500,000) values |
| Measuring interval | 20 sec to 4 hrs |
| Averaging interval | 20 sec to 4 hrs |
| Warm-up time | 1 to 5 sec, independently set for time of measurement and averaging |
| Excitation | two independent switches for excitation in time of measurement and averaging |
| Exciting voltage | Ub - 0.7 V, max 100 mA 5 V \pm 0.4 V, independent outputs for excitation in time of measurement and averaging |
| max. load | 30 mA |
| Programmable switch | two synchronized outputs – switched Ub and open collector (100 mA max) |
| RTD excitation current | approx. 150 μ A, multiplexed to each output |
| Auxiliary input for Pt1000 temperature sensor intended for the measurement of the temperature of the thermocouple reference junction – ratio based measurement | |
| Overvoltage protection | diode suppressors connected to each input terminal completed with limiting circuit with warning sound |
| Power supply voltage | 6.5 to 16 Volts |
| Power consumption – idle | less than 1 mA (depends on arrangement) |
| Power consumption – measuring | 30 mA (without excited load) |
| System clock back-up | Lithium coin type battery CR2032, 3 V |
| Back-up battery lifetime | 5 years at least |
| Size (L x W x H) | 25 to 105 x 120 mm |
| Weight | 0.15 to 0.6 kg |
| Operating environment temp. | -40 to 60 °C |
| Protection | enclosure IP65 optionally on demand |

RailBox RB types

| | Voltage channels | Pulse channels | RTD PtXXXX channels | SDI-12 input |
|---------------|------------------|----------------|---------------------|--------------|
| RB0 | | | | YES |
| RB16 | 16 | | | YES |
| RB16P4 | 16 | 4 | 16 | YES |
| RB16P8 | 16 | 8 | 32 | YES |
| RB32 | 32 | | | YES |
| RB32P4 | 32 | 4 | 16 | YES |
| RB32P8 | 32 | 8 | 32 | YES |
| RB64 | 64 | | | YES |
| RB64P4 | 64 | 4 | 16 | YES |
| RB64P8 | 64 | 8 | 32 | YES |



RailBox RB0 or RBxxxx base module wiring

Top side

| | | |
|-----------------|-----|---|
| COM PORT | Tx | → |
| | Rx | → |
| | GND | → |
| Ub PM | → | |
| 5V PM | → | |
| GND | → | |
| Ub PS | → | |
| 5V PS | → | |
| GND | → | |
| Ub out | → | |
| Ub PM | → | |
| Rx | → | |
| Tx | → | |
| SDI | → | |
| GND | → | |

Bottom side

| | |
|---|--------|
| ← | Ub out |
| ← | GNDsw |
| ← | +Ub |
| ← | GND |
| ← | Ubsw |
| ← | GND |

Software

Mini32 universal software running under Windows® 7, 8 and 10. The software assures all necessary operations – system setup, data downloading and processing. Its data processing part is made for work with large and long-time data series. It offers exceptionally sophisticated visualization and data manipulation, it includes basic statistic features, creates and prints graphs and exports data to different file formats.

Two-year full warranty.