

Data-Recording-Device

Regulating-Measuring-System RMS-2-B

to control two injection pumps



Technical Data

Power Supply	230 V, 50 Hz, 1,5 A, 24 V DC
Dimensions (L x W x H) Weight	400 x 270 x 430 mm approx. 24 kg
Operation Temperature	-10°C up to +50°C [+14°F up to +122°F]
Housing	corrosion-resistant stainless steel housing protection class IP 64
Display	touch-screen Display 10,4" LCD colour TFT with integrated function buttons, protection class IP 65 (front)
Plug Connections	industrial models with codification, spring contacts
Monitor Configuration Languages	in series german / english (further languages on request!)
Operation / Inputs	structured and easy understandable buildup, numeric and alpha-numeric input via touch-screen
Display / Measuring Values	as a digital numerical value, as a analog bar graph, as a trend line
Error Indications	error indications / malfunctions will be shown on screen

Application:

Data acquisition and recording (pressure and flow) at pumping of cement, fly ash and bentonite suspensions at anchoring, fillings, injections, sleeve pipe injections

Pump Control

- Pumping and Measuring ON/OFF
- Break ON/OFF
- EMERGENCY-STOP with actuation LED (pump shut-off)
- SUSPENSION / FLUSHING
- PUMPING / CIRCULATION
- DELIVERY RATE (infinitely variable adjustment)
- HAND / AUTOMATIC (automatic shut-off at achieving the adjusted target quantity)
- High pressure
- Pressure shut-off
- Pressure regulation (pump will be regulated on defined pressure)
- Flow regulation (pump will be regulated on defined flow rate)
- Pump control on GIN method
- Network compatible, optional: access via internet / mobile communication

Flow Measuring

- via inductive flow meter DMM (signal 4-20 mA)
- via stroke counting

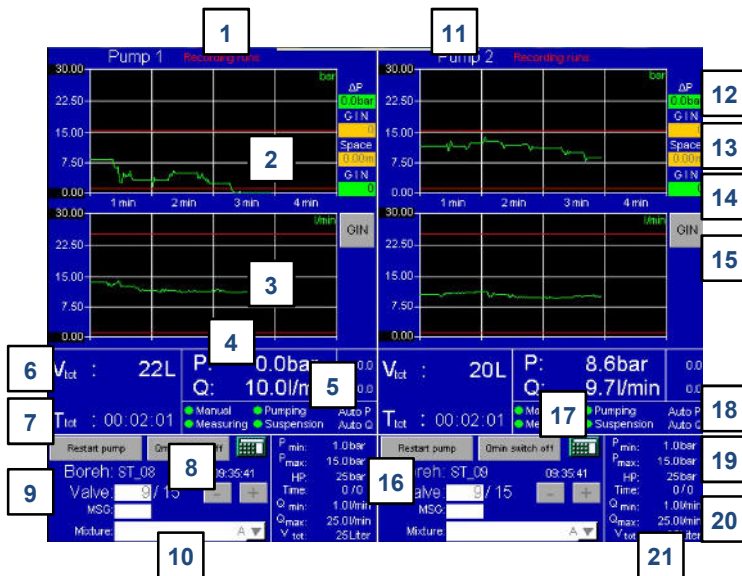
Pressure Measuring

- via electronic pressure sensor (signal 4-20 mA)

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Pump-Screen RMS-2-B



- 1 recording status
- 2 pressure graph
- 3 delivery rate graph
- 4 current pressure
- 5 current quantity
- 6 current injection quantity
- 7 current injection time
- 8 change of level number
- 9 position and level number
- 10 phase = name of the suspension
- 11 pump number
- 12 GIN parameter
- 13 distance / depth
- 14 current GIN value
- 15 GIN graph or linear graph
- 16 cancel the pump shut-off
- 17 status delivery pump
- 18 active pressure and flow control
- 19 min. / max. pressure
- 20 min. / max. flow rate
- 21 total quantity

Settings / operation modes RMS-2-B

In addition to the known functions of RMS-1-B, such as pressure control (two-point), definition of required quantity, injection options, depth and sleeve pipe injection, definite allocation of position and level as well as the entry of building site data, RMS-2-B has the following functions:

Pressure and quantity control

The defined target pressure or required quantity is started up and held by a control. The pump is not being shut down or started up again but controlled in the range of the defined target value. Combined pressure and quantity control is also possible.

GIN Process

Injection according to the GIN process with automatic control is possible. Such parameters as lance length, number of stage, pressure difference are adjustable.

Soft Start

In this mode the pump starts up very slowly and gently after a shut-down.

High Pressure

Operating this switch the pump drives to the defined high pressure (HD) value (HD = high pressure = burst pressure).

Data Evaluation: NINJA (New INjection Analysis)

The program NINJA serves the logging, analysis, control, recording, presentation and archiving of injection data, which was recorded by our data recording system RMS-1-B and RMS-2-B and saved in ASCII format.

The project management allows the administration of several projects (job sites and sections) with different machines and RMS devices. Injection position protocols and daily logs can be generated automatically and printed out comfortably. Injection protocols are saved in the graphic format PNG, can be printed parallel and provided to the construction management. The daily logs and position protocols have a tabular format in A4 upright.

Individual adjustments of the protocols (language, layout, company logo, site data and scale) are possible. Furthermore comments to each position and stage are also printed out. Additionally a comfortable viewer with zoom function is available for the injection protocols.

Our NINJA program has no dongle or expiry date (copy protection)! Our customers get to copy our programs on several computers without additional license fees.