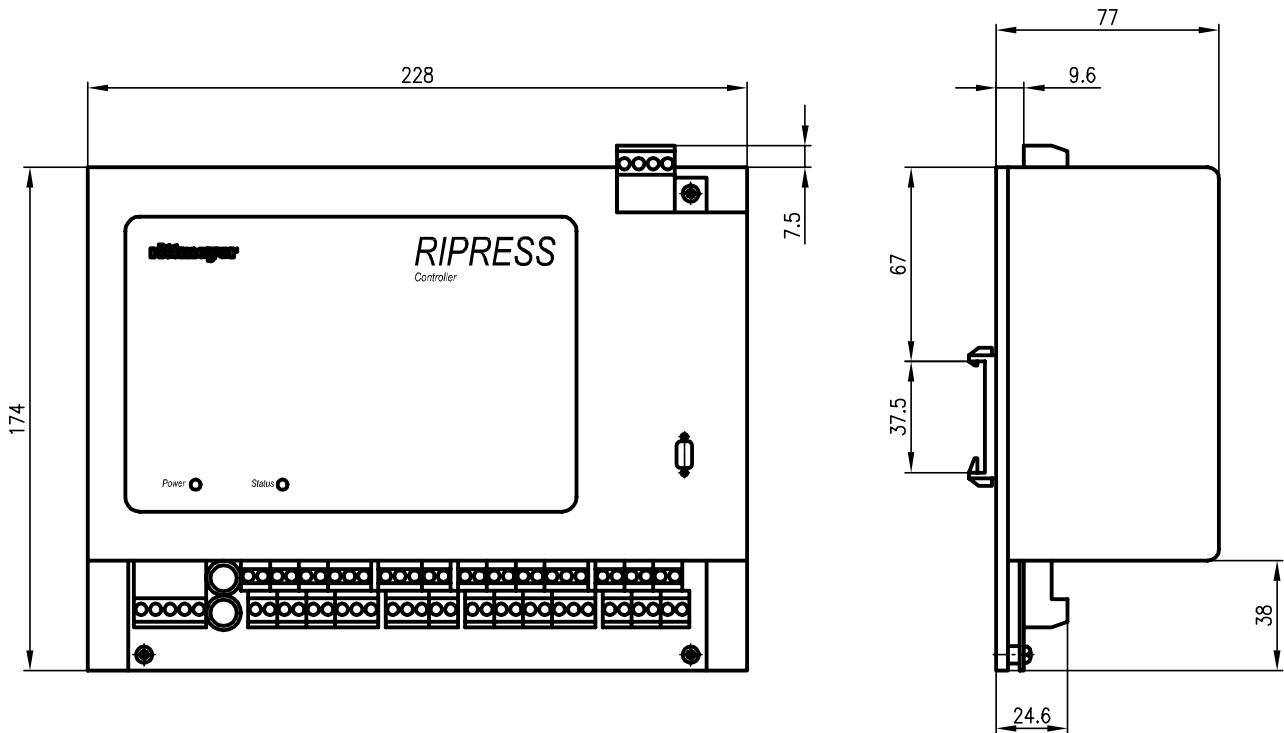


Dimensions

Basic Unit



Remote MMI

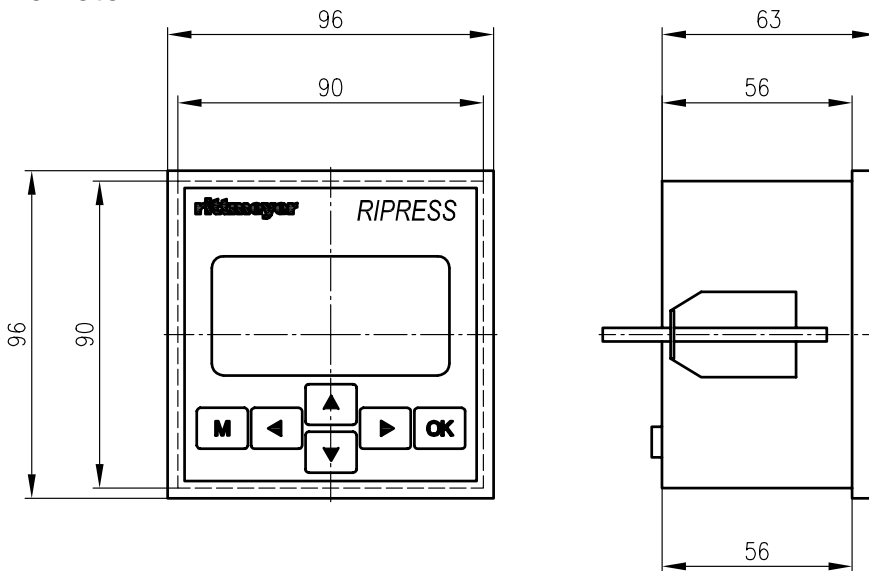


Figure 1: Front View, Side View

Application

Together with corresponding analogue or digital sensors, the RIPRESS Controller primarily serves the acquisition/calculation, display and remote indication of level, flow and volume.

Limit value monitoring, alarm functions, PID control, event and measured value recording as well as remote access to data and parameterisation are integrated.

Brief Description

Up to four sensors can be connected to a RIPRESS Controller via 4 ... 20 mA or MODBUS RTU. The measured value (typically pressure) is converted into a process value (typically level, flow, volume) by means of an interpolation curve with 20 points. Several prepared functions (interpolation point values) are available for this.

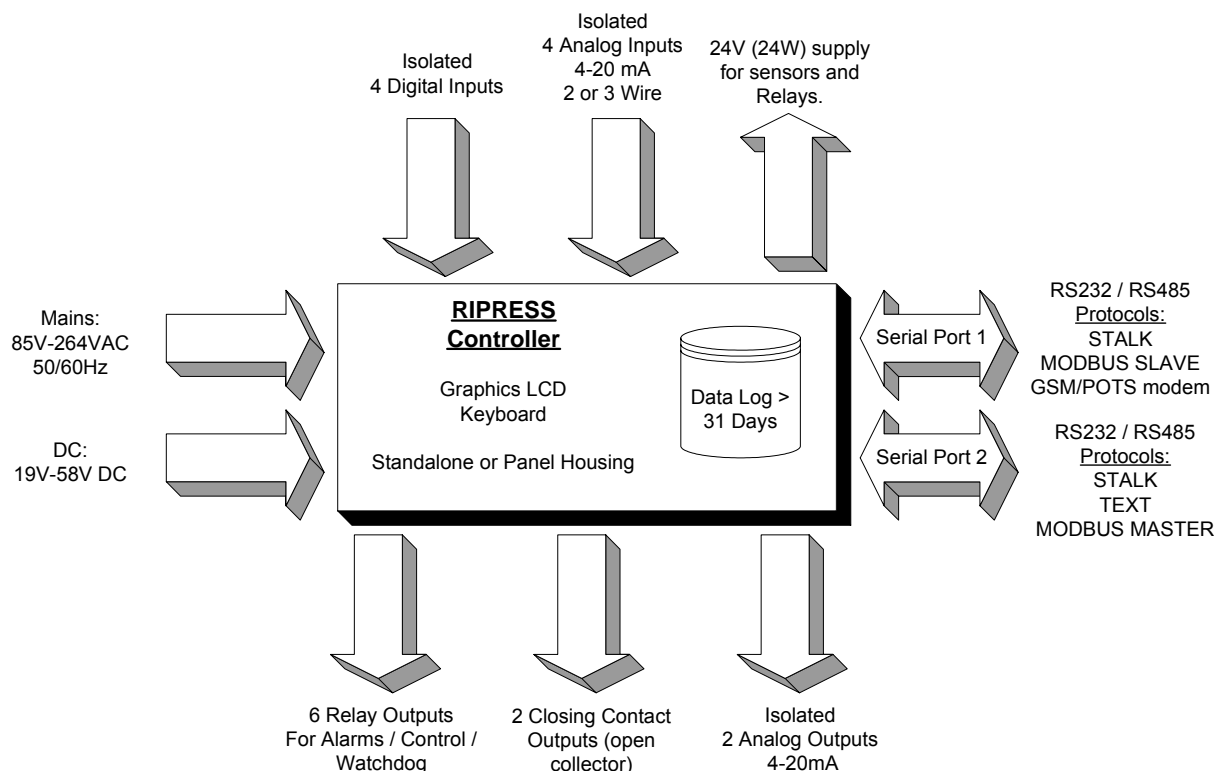
The two analogue outputs (4 ... 20 mA) can be used as a correcting variable (PID controller) or as a signal amplifier.

The individual measured values can be recorded and monitored against limit values.

Various preset events can initiate an alarm via SMS, remote interrogation is possible via modem/GSM, data connection to higher-level systems (SPS / SCADA) takes place via MODBUS RTU.

All system parameters can be interactively entered or amended and the measured values displayed via the 6 membrane keys and the graphical LCD. The RIPRESS Controller supports the languages German, French, Italian, Spanish and English.

Block Diagram



Technical Data

Construction

Basic Unit

- Plastic housing IP 20
- Height: 174 mm, width: 228 mm, depth: 77 mm
- Weight: approx. 1.000 kg
- Mounting on 35 mm DIN rails (EN 50022-35)

Remote MMI

- Plastic housing 96 x 96 mm (DIN 43700)
- Mounting depth including terminals and fixing clamp: approx. 75 mm
- Weight: approx. 200 grams
- Connection to base unit serial via RS485

Power Supply

- Alternating current: 85 ... 250 VAC / max. 40 W
 - Fine-wire fuse 2A quick-acting
- Direct current: 19 ... 58 VDC / max. 40 W
 - Fine-wire fuse 3A quick-acting
 - Polarity reversal protection

Indications Basic Unit

Status LED

Power Green, lit when power supply present.

Status two-colour LED (green, red):

Green steady: OK / red flashing for configuration warnings:

- 2 flashes: Inconsistency in setting up a function pair
- 3 flashes: Inconsistency in setting up linked analogue outputs
- 4 flashes: Selected alarm relay not available
- 5 flashes: Unavailable relay added to rotation queue
- 6 flashes: Selected modbus sensor model inconsistent with register offset and/or data type

Red steady: Critical error / green flashing for error code:

- 1 flash: Registry corrupt
- 2 flashes: Modbus sensor offline
- 3 flashes: Analogue sensor outside 4-20mA
- 4 flashes: RIPRESS Relays offline
- 5 flashes: Software error (or new firmware)

MMI

Graphical LCD

- Graphic: 66 x 33 mm, matrix 128 x 64 dots
- Alphanumeric: 8 lines of 20 characters each (5 x 7 dot matrix)
- Backlighting

Keyboard

6 membrane keys on MMI front plate

Inputs

Analogue

4 electrically isolated inputs 4 ... 20 mA with 12-bit resolution. Input resistance 150 Ω.
Alternatively max. 4 probes MPC/J via MODBUS RTU Master (Port 2). Each probe connected via MODBUS occupies an analogue input.

Digital

4 optocoupler inputs. For signal recognition, at least 3 VDC is necessary, maximum activation with 24 VDC.
Maximum reverse voltage 5 VDC.
Insulation voltage: 2500 Vrms

Application possibilities:

- Higher-level safety criterion (effective on a relay output)
- Event only recording (logging)
- Impulse counter

Outputs

Analogue

2 electrically isolated outputs 4 ... 20 mA with 12-bit resolution.

Relays

- 6 relays each with a change-over contact with 6A 250VAC / 28 VDC contact load.
5 relays for limit value functions / 1 relay dedicated to OK function

Digital

2 transistor outputs, max. 50mA / 80 VDC.
Application: Output of quantity impulses (100 ms) based on a flow measured value.

Power Supply for External Equipment

24 VDC / 1 A available for supplying the sensors and measured value output (RIPRESS relays).
12 VDC / 300 mA available for supplying a modem.

Data Interfaces

- 2 serial interfaces each with RS232 and RS485 connections.
- Port 1 for configuration (STALK), MODBUS RTU Slave or GSM/analogue modem.
- Port 2 for configuration (STALK), MODBUS RTU Master.

Environmental / Operating Conditions

- Operating temperature range: -20 ... +60°C
- Storage temperature range: -40 ... +80°C
- Protection class: IP20

Quality Tests

The RIPRESS Controller fulfils the requirements of the EU EMC directives (89/336/EWG) for noise immunity (EN 61000-6-2) and noise emissions (EN 61000-6-3), as well as the low voltage directive (EN 61010-1).

Internal Measured Value Processing

The measured value (typically pressure) is converted into a process value (typically level, flow, volume) by means of an interpolation curve with 20 points. Several prepared functions (interpolation point values) are available for this.

The individual measured values can be monitored against limit values. The limit value event can be assigned to an alarm and/or a relay.

The alarm event can initiate an SMS.

Any two measured values can be calculated together (addition, subtraction, average and multiplication).

The following prepared conversion functions are available:

Converting level into volume:

- Vertical cylinder
- Vertical cylinder with cone
- Horizontal cylinder
- Ball

Converting level into flow:

- V-section
- Rectangular contracted
- Rectangular suppressed
- Cipolletti (trapezoidal weir)
- Parshall channel
- Leopold Lagco channel
- Venturi channel
- Manning (closed pipe, partially filled)

Data Storage

If desired, data storage can be initiated every 1 to 255 minutes. All configured values are stored in a 2 MB Flash memory and can be read out with the PC software. 1 minute values can be stored in the unit over one month, 15 minute values over one year.

Operation

The graphical LCD and the 6 membrane keys form a comfortable user interface. The individual inputs and outputs are presented in detail starting from the measured value overview over all 4 inputs.

Parameterisation

Simple parameterisation is possible on the unit itself. Access to the parameterisation level is protected by password (PIN). The PC software provided enables comfortable operation.

Electrical Connections

General

Connection is made by means of 2.5 mm² terminal screws. All connection designations end with a U for the upper row of terminals and with an L for the lower row of terminals. The designations are always aligned to the centre of the terminal.

5 cable glands are prepared.



AC / DC Supply	Block 1	Block 2	Block 3	Block 4
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Block 1 contains:

- Digital outputs 1 and 2 (impulse)
- Digital inputs 1 to 4
- Analogue outputs 1 and 2
- Port 2, RS485, electrically isolated

Block 2 contains:

- Port 1 and 2, RS232
- Port 1, RS485
- 12 VDC supply for external modem

Block 3 contains:

- Relay connections for all 6 relays (change-over contact)

Block 4 contains:

- Analogue inputs 1 to 4
- 24 VDC supply for sensors and measured value outputs

Accessories

RIPRESS Relays Type: MPKR Article No.: P. MPKR

- Output of a measured value (raw or processed) with 21 bit in binary, GRAY or BCD code
- Connection via MODBUS
- A maximum of 4 RIPRESS relays are supported.

Rittmeyer AG Grienbachstr. 39 Postfach 2558 CH-6302 Zug	Rittmeyer GmbH Postfach 1908 DE-70709 Fellbach Raiffeisenplatz 6 DE-70736 Fellbach	Rittmeyer Ges.m.b.H Walkürengasse 11/2/1 Postfach 73 AT-1152 Wien	Rittmeyer Italiana s.r.l. Via Valbona 43 IT-24010 Ponteranica (BG)	Rittmeyer S.A. Calle Julián Camarillo 26-3 ^o ES-28037 Madrid
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