



Compact Controller MDS-PLC for Dosing Applications

Operation Manual

MDS-PLC



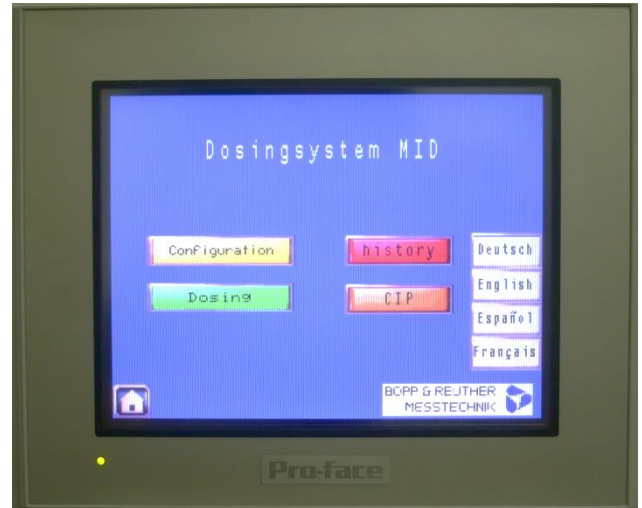
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MDS-PLC

1. Main features

- 4 meter inputs 100 kHz
- 4 valve outputs 0.2A
- suitable for quick dosing processes
- with overflow rate correction and max. dosing time switch-off
- history of the last four fillings
- colour touch panel



2. Description

The compact controller **MDS-PLC** is a touch panel with integrated PLC. It allows the independent operation of four dosing points. Any flow sensor that can supply a 24 VDC volume pulse can be connected. The overflow rate is corrected for each dosing point separately and the valve is switched off once a settable maximum dosing time has been reached. A tolerance output is available for each channel and indicates whether dosing has taken place within the specified limit values. Dosing can be started and stopped via external inputs or via the touch panel.

All inputs and outputs can be connected to screw terminals at the rear of the controller.



3. Applications

Filling machines with max. 4 filling points

Thanks to this compact controller, the manufacturers of filling machines are able to integrate dosing functions into their machines quicker.

An external PLC is not required as operation of the compact controller takes place either via the external inputs or via the touch panel.

All accuracy-relevant functions are integrated in the compact controller. This ensures the dosing result is not negatively affected by an external PLC, even when using an inexpensive one.

Compositions

By connecting various volume meters it is also possible to mix several products, thus achieving a composition.

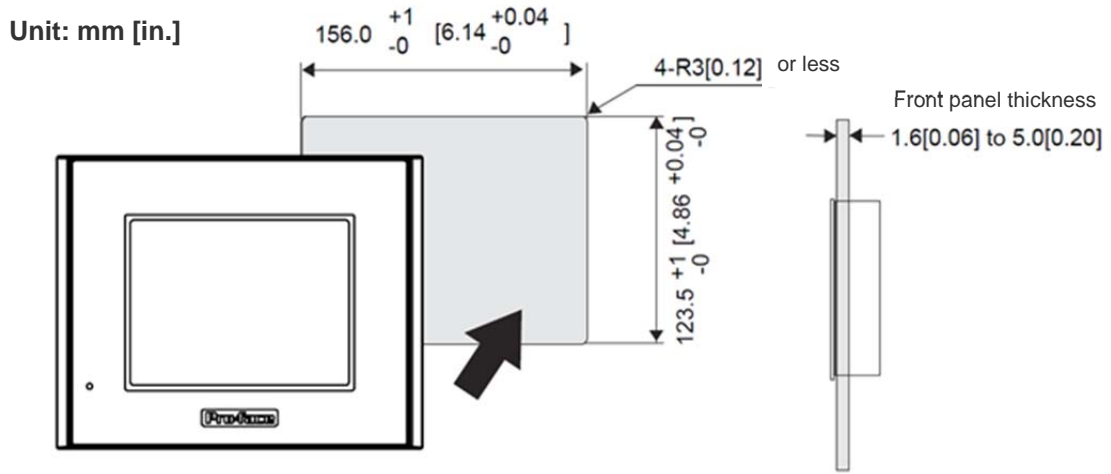
It is possible to use the magnetic inductive flow meter for conductive products while the mass flow meter or the oval wheel meter can be used for non-conductive ones.

The k-factor of the volume meter can be entered separately for each channel in the configuration.

4. Technical data

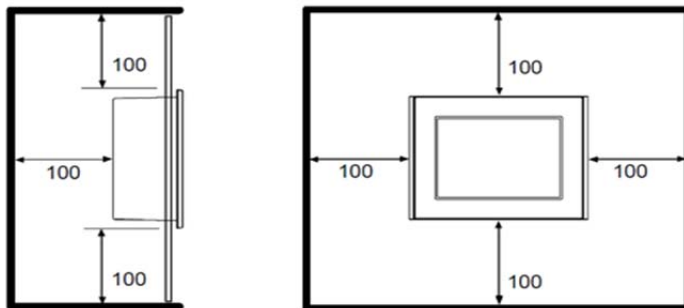
Inputs	4 meter inputs 100 kHz 4 start inputs 4 stop inputs 1 CIP input
Outputs	4 valve outputs max. 0.2A 4 tolerance outputs 4 outputs for valve closed
Rated voltage	24VDC
Max. permissible voltage	28VDC
Power consumption	27W max.
Ingress protection	IP65 front
Temperature range	0 to + 50°C
Meter voltage level	Lo 0 - 5VDC Hi 19 - 24VDC
Meter input current	6.5mA (24V)
Remaining inputs input current	4.1mA (24)
Meter internal resistance	Approx. 3.7k
Remaining input resistances	Approx. 5.9k
Display	Colour touch panel 320 x 240 pixels
Dimensions	170 x 135 x 80

5. Installation dimensions

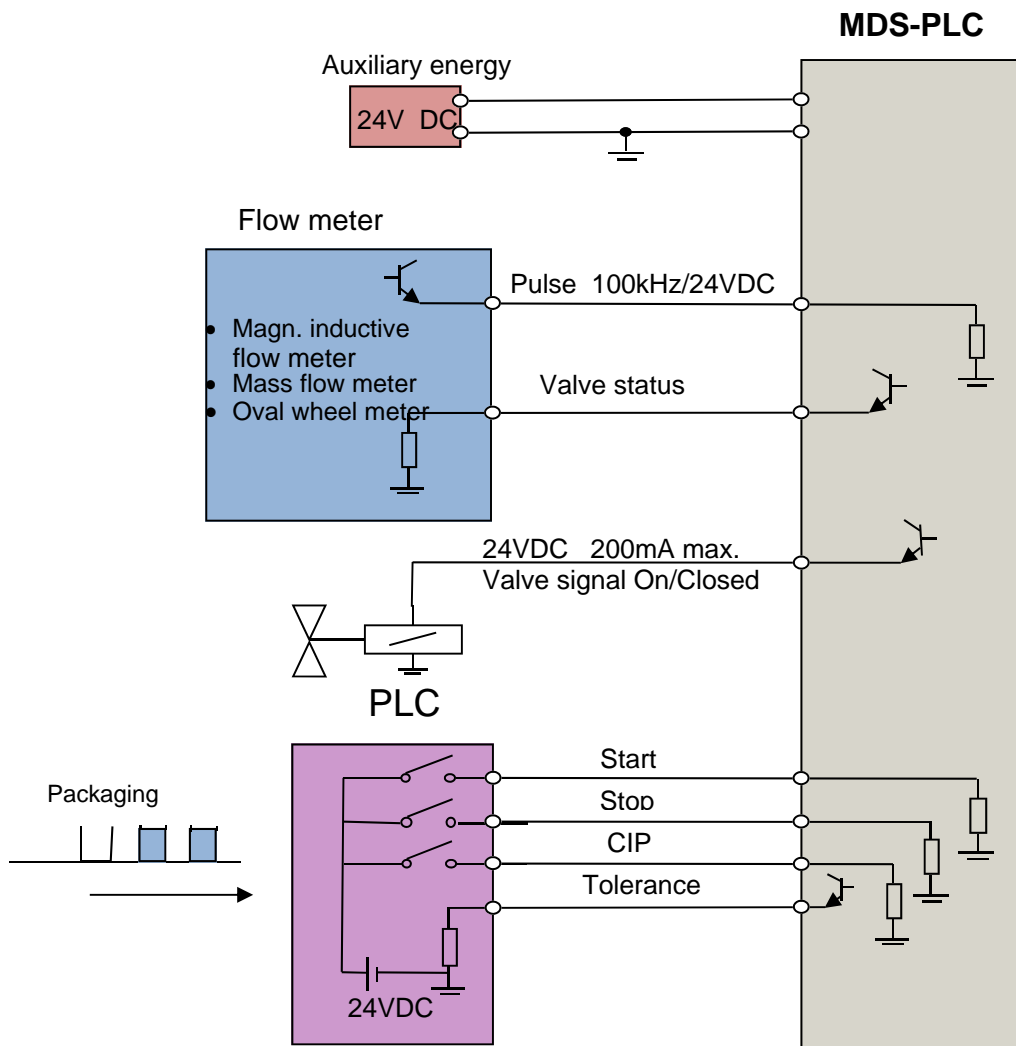
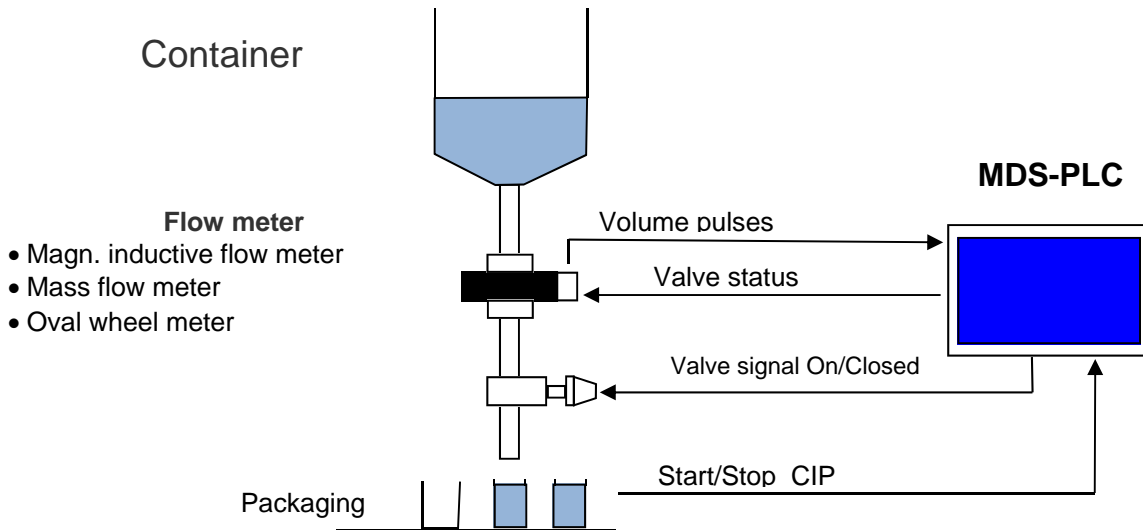


To facilitate maintenance tasks and enhance ventilation, install the MDS-PLC at least 100 mm from adjacent structures and other devices.

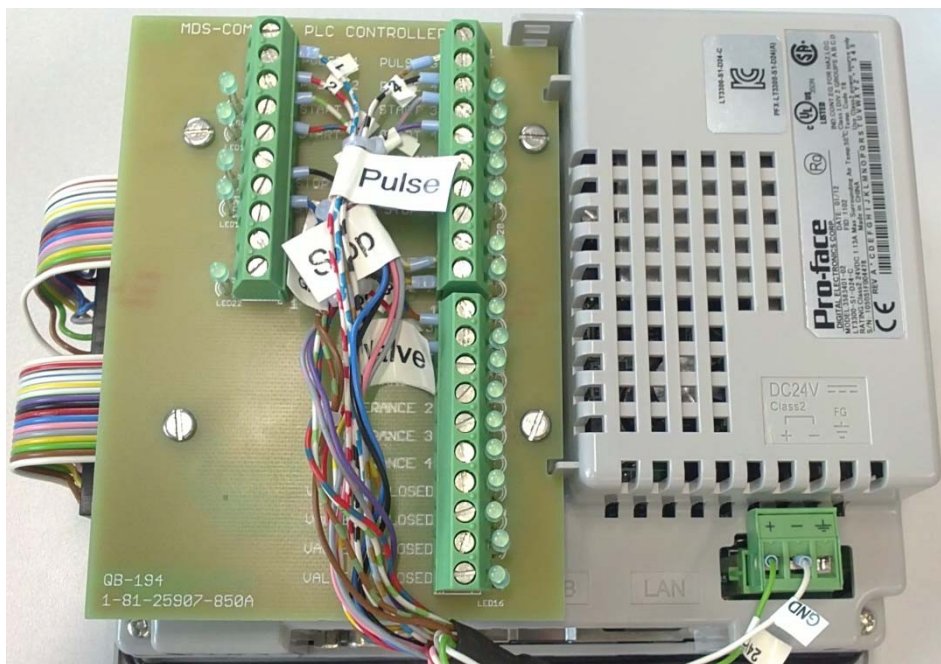
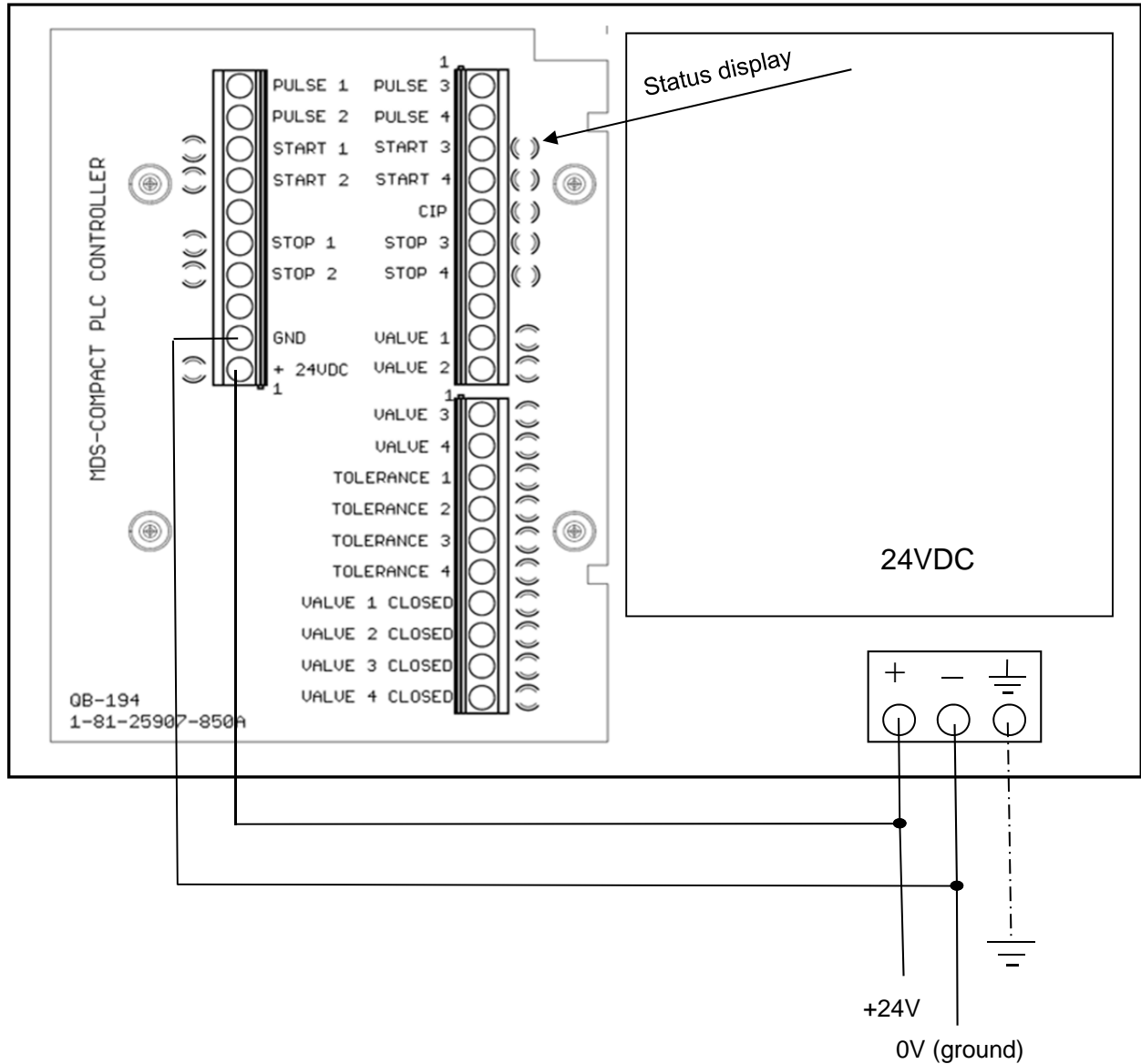
Unit: mm



6. General design of the dosing unit



7. Wiring



Rear view

8. Operation manual

8.1 Main menu

The main menu is displayed when the system is switched on:

Press the following buttons:

Configuration: Change to the Configuration screen

Dosing: Change to the Dosing screen

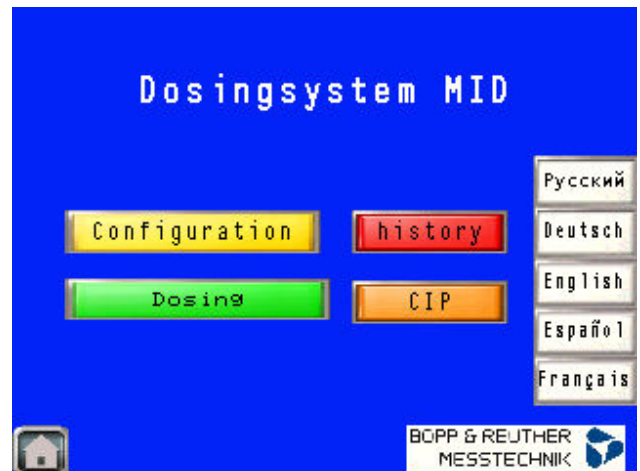
History: Change to the History screen

CIP : Change to the CIP screen

 Change to the Main menu

Select languages:

German, English, Spanish, French



8.2 Configuration


Channel active: Switches on the channel

K-factor Pul/L: Enter the K-factor Max 65535 Pul/L
Filling cannot be started with 0

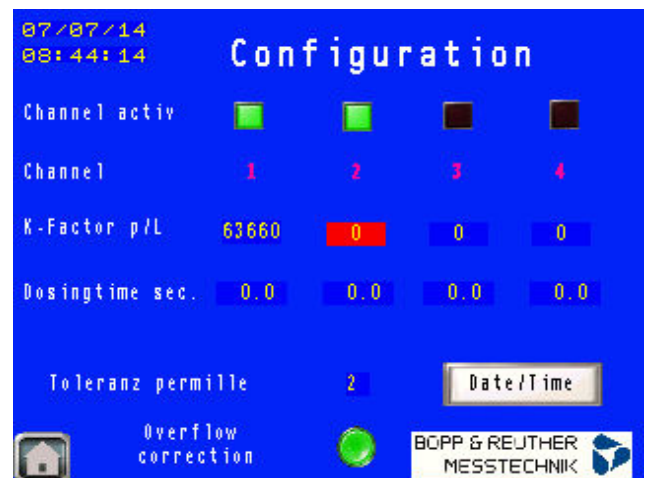
Dosing time: Once the set time has been reached, the Valve is closed irrespective of whether the target quantity has been achieved or not.

Tolerance in per mill: For all channels.
If the tolerance quantity has been exceeded, the tolerance output is set for the subsequent filling.

Overflow correction: On/Off

 Change to the Date/Time setting screen.

 Change to the Main menu



8.3 Dosing

Channel no.: 1— 4

Target value: Max. target value = 2040109466 / K-factor
 Filling cannot be started with 0.
 The decimal point is calculated automatically. If the value is too great, the max. quantity is determined automatically.

Target value field: When flashing red, the channel is active, enter the target value.

Actual value: Display the filled quantity. The decimal point is calculated automatically.

Dosing time sec.: Current filling time

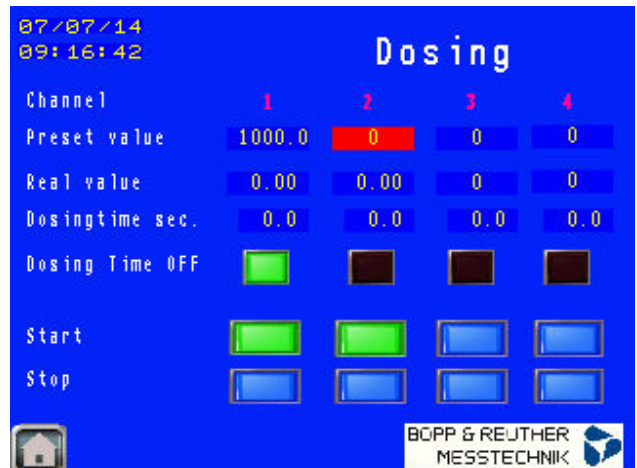
Dosing time OFF: The dosing time limitation can be switched on/off here. Enter the time in the Configuration menu. If 0 is entered as the dosing time and the "Dosing time OFF" button is active, filling cannot be started.

Start: Starts the filling process. If the K-factor or target value is 0, it is not possible to start the filling process.

Stop: Stops the filling process



Change to the Main menu



8.4 History

Details: Button for changing the screen to the "History data" channel .. 1 — 4

Cycle: Total no. of fillings

Overflow: Average overflow quantity

Overfilled: Total no. of fillings above the tolerance

Underfilled: Total no. of fillings below the tolerance

Reset menu: Change to the "Reset channel no." menu



Change to the Main menu



8.5 History data details channel ..

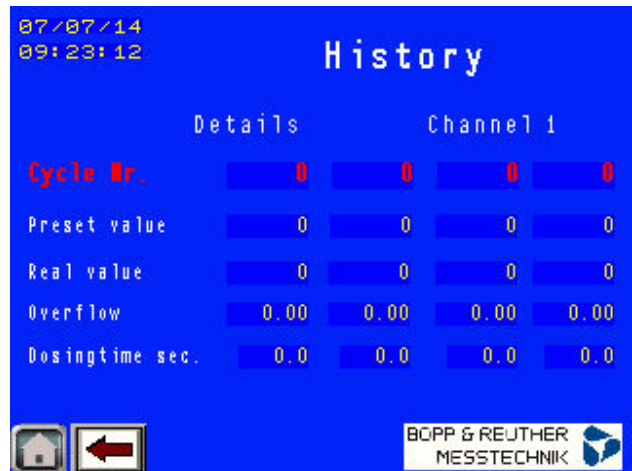
Shows the values of the last four fillings



Back to the **History** screen



Change to the Main menu



8.6 Reset channel ...

- Cycle: Sets the cycle meter to 0
- Overflow: Sets the average overflow value to 0
- Overfilled: Sets the overfilled meter to 0
- Underfilled: Sets the average underfilled meter to 0



Back to the **History** screen



Change to the Main menu



8.7 Delete ...

Acknowledge deletion of the meter

- Yes Set to 0
- No Back to the Reset menu



Back to the **History** screen



Change to the Main menu



8.8 CIP...

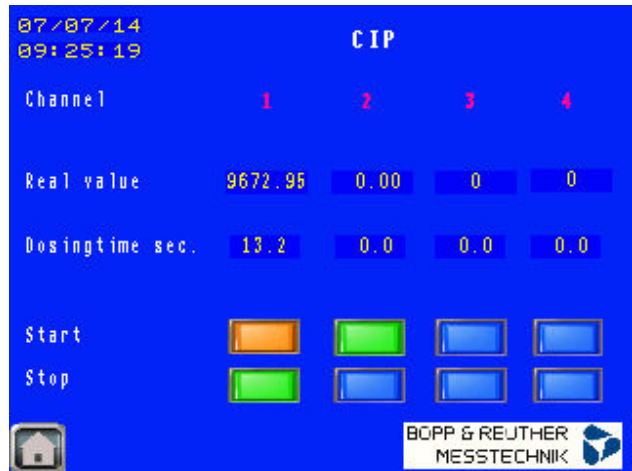
CIP cleaning (Cleaning in Place)

Start: In order to open the valve, the channel must be activated and the K-factor entered.

Stop: Closes the valve



Change to the Main menu

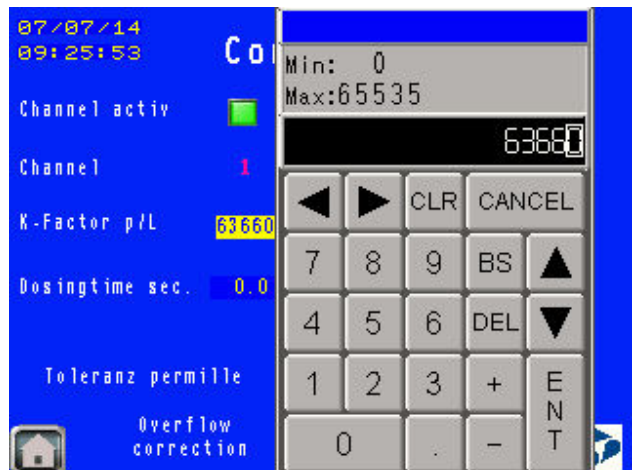


8.9 Enter values...

Touch the respective number to enter the values. The numeric keypad is subsequently displayed. Acknowledge your entry via "Enter".



Change to the Main menu



8.10 Date/Time

Enter

- Day
- Month
- Year
- Hours
- Minutes
- Seconds



Change to the Configuration screen



Change to the Main menu

