

| | | |
|------|---|-------------|
| 1 | INTRODUCTION | E-2 |
| 1.1 | Unpacking and Control | E-2 |
| 1.2 | About this Manual | E-2 |
| 1.3 | User's Responsibility for Safety | E-2 |
| 1.4 | Electromagnetic Compatibility | E-2 |
| 2 | SPECIFICATION | E-3 |
| 2.1 | Type Specification | E-3 |
| 2.2 | Design and Measuring Principle | E-4 |
| 2.3 | Dimensions Electronic housing SE35 Batch controller | E-5 |
| 2.4 | Technical Data | E-6 |
| 3 | INSTALLATION | E-7 |
| 3.1 | Installation Guidelines | E-7 |
| 3.2 | Process Mounting | E-8 |
| 3.3 | General electrical connection | E-9 |
| 3.4 | Electrical Wiring | E-9 |
| 3.5 | Electrical Wiring with Power Supply 230/115 VAC | E-10 |
| 4. | OPERATION AND CONFIGURATION | E-11 |
| 4.1 | Controller operating and Control elements | E-11 |
| 4.2 | Description of the Dosing Options | E-12 |
| | 4.2.1. «LOC.MANU» Option | E-12 |
| | 4.2.2. «LOC.MEM» Option | E-12 |
| | 4.2.3. «MEM+MANU» Option | E-12 |
| | 4.2.4. «EXT.MEM» Option | E-13 |
| | 4.2.5. «EXT.[T]» Option | E-14 |
| 4.3 | Main menu | E-15 |
| | 4.3.1. Dosage in manual mode | E-15 |
| | 4.3.2. Dosage in automatic mode | E-16 |
| | 4.3.3. Dosage proportional to a pulse duration | E-17 |
| | 4.3.4. Display of flow rate and the initial preset volume during the dosage | E-17 |
| | 4.3.5. Pause / reset function | E-18 |
| 4.4. | Calibration Menu | E-19 |
| | 4.4.1. Language | E-19 |
| | 4.4.2. Measurement units | E-20 |
| | 4.4.3. K-Factor | E-20 |
| | 4.4.4. Dosing options | E-21 |
| | 4.4.5. Overfill correction | E-23 |
| | 4.4.6. Alarm | E-23 |
| | 4.4.7. Relays | E-24 |
| | 4.4.8. Totalizer | E-26 |
| 4.5. | Test Menu | E-26 |
| | 4.5.1. EXT.ACT. | E-26 |
| | 4.5.2. Check on operation of relays | E-27 |
| | 4.5.3. Transducer frequency readout | E-27 |
| 5. | MAINTENANCE | E-28 |
| 5.1 | Fault prompts | E-28 |
| 5.2. | Transducer maintenance | E-30 |
| 5.3. | Default configuration of 8035 INLINE Batch controller on delivery | E-31 |
| 5.4 | Spare Parts List | E-31 |
| | APPENDIX | A-1 |
| | Flow Chart (l/min, DN in mm and m/s) | A-1 |
| | Flow Chart (US-gallon/min, DN in inch and Ft/s) | A-2 |

Dear Customer,

Congratulations on your purchase of our batch controller SE35 INLINE.

Before installing or mounting this device, please take our advice and read the entire manual thoroughly.

This will enable you to fully profit from all of the advantages offered by this product.

1.1 Unpacking and Control

Please verify that the product is complete and free from any damage. The standard delivery must include:

- 1 Batch Controller electronic SE35
- 1 Instruction manual SE35
- 1 Instruction manual S030 Inline

Compare the type specification on the label to the following list to ensure that you have received the proper unit. If there is any loss or damage, please contact your local Bürkert subsidiary.

1.2 About this Manual

This manual does not contain any warranty statement. Please refer to our general terms of sale and delivery.

Only properly-trained staff should install and/or repair this product. If difficulties should occur at the time of installation, please contact your nearest Bürkert sales office for assistance.

1.3 User's Responsibility for Safety

Bürkert manufactures a broad range of flow sensors. While each of these products is designed to operate in a wide variety of applications, it is the user's responsibility to select a controller model that is appropriate for the application, install it properly, and maintain all components. Special attention must be paid to the chemical resistance of the sensor against the fluids which are directly contacting the product.



This symbol appears in the manual to call special attention to instructions that affect the safe installation, function and use of the product.

1.4 Electromagnetic compatibility

This device conforms to the EMC-Directive of the European Community 89/336/EEC. In order to comply with this directive, the wiring instructions must be followed.

2.1 Batch controller electronic SE35 Batch INLINE,

The batch controller 8035 is consisting of a S030 fitting which houses the paddle-wheel and an electronic controller SE35, specially designed to be installed on the fitting.

Use a separate order N° for the S030 Fitting. For more informations about the fittings see the corresponding instruction manual.

| International Standard Version | Cable Input | Order Nr |
|--|--------------------|-----------------|
| Batch Controller SE35, Power Supply 12-30 VCC | | |
| 2 totalizers, 2 relays | 2 x PG 13,5 | 423920 |
| Batch Controller SE35, Power Supply 115-230 VAC | | |
| 2 totalizers, 2 relays | 2 x PG 13,5 | 423926 |

| North-America Standard Version | Cable Input | Order Nr |
|--|--------------------|-----------------|
| Batch Controller SE35, Power Supply 12-30 VCC | | |
| 2 totalizers, 2 relays | 2 x PG 13,5 | 423932 |
| Batch Controller SE35, Power Supply 115-230 VAC | | |
| 2 totalizers, 2 relays | 2 x PG 13,5 | 423937 |

2.2 Design and Measuring Principle

Design

The Batch Controller SE35 Inline consists of an electronic IP65 housing SE35 set by quarter turn on the fitting S030. The electronic housing integrates the electronic board with display, programming keys and also a the transducer. The paddle-wheel is mounted in the fitting.

The transducer component converts the measured signal and displays the actual value. The output signals are provided via two PG 13.5.

Measuring and Dosing Principle

When liquid flows through the pipe, 4 magnets inserted in the paddle-wheel set in rotation produce a measuring signal in the transducer.

The frequency modulated induced voltage is proportional to the flow velocity of the fluid. A conversion coefficient, specific to each pipe (size and material) enables the conversion of this frequency into flowrate. This coefficient (Factor-K in pulse/liter) is available in the instruction manual of the inline fitting (S030).

The controller SE35 Batch is mounted on a pipe in series with the valve. The SE35 unit measures the flow, calculates the volumes, and operates the valve(s) according to the selected program (see § 4).

The controller electronic module SE35 Batch requires a power supply of 12...30 VDC (230/115 VAC as option).

Dosing options

Following dosing modes are available

I) Local dosing command:

a) The user enters the volume to be measured and initiates the dosing from the keypad. ("*LOC.MANU*") (§ 4.3.1)

b) Local dosing with preset volumes. Selection of a pre-set volume and activation of the process from the keypad ("*LOC.MEM*"). (§ 4.3.2)

c) Combination from "*LOC.MANU*" and "*LOC.MEM*" options. activated from the keyboard ("*MEM+MANU*") (§ 4.3.1 + § 4.3.1).

II) Remote dosing command:

a) Dosing controlled by binary inputs issued from a PLC. Each pulse controls the dosing of a preselected volume ("*EXT.MEM*") (§ 4.3.4)

b) Automatic dosing controlled by the pulse duration. The distributed volume is directly proportionnal to the pulse duration ("*EXT. [T]*") (§ 4.3.3)

2.4 Batch Controller 8035 INLINE external dimensions (mm)

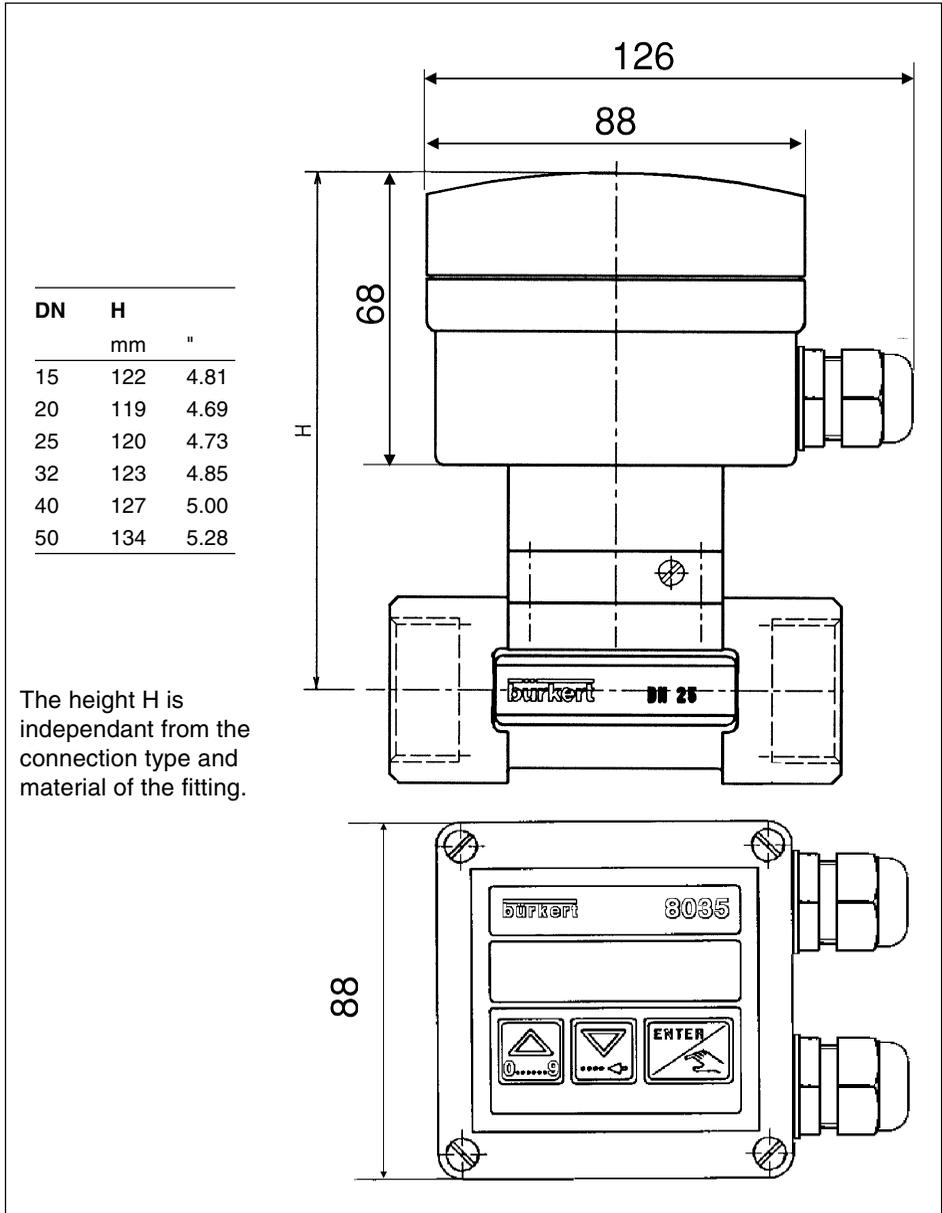
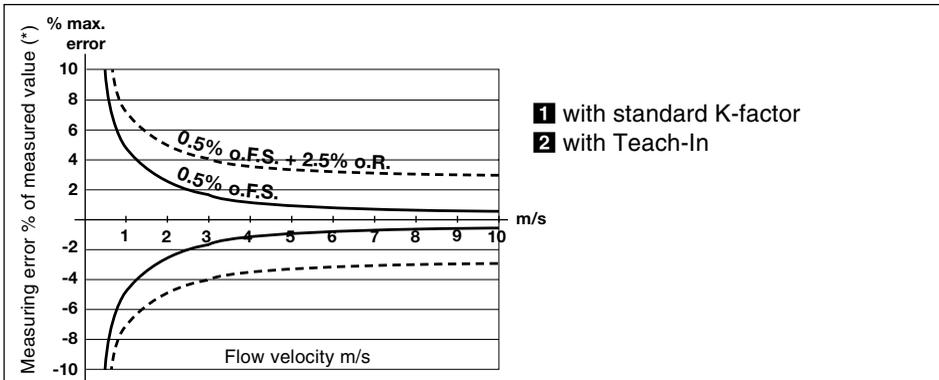


Fig. 1 Batch Controller 8035 INLINE external dimensions

2.4 Technical Data

| | |
|------------------------|---|
| Pipe diameter | from DN 15 to DN 50 (1/2" to 2") |
| Measuring range | 0,3 to 10 m/s (1.0 to 32.8 ft/s) |
| flow range | as from 3 l/min (DN15 pipe, 0.3 m/s flow velocity) |
| flow range | as from 0.8 gpm (1/2" pipe, 1.0 ft/s flow velocity) |
| Plastic fitting | PN10 |
| Fluid temperature max | PVC: 50 °C (132°F); PP: 80 °C (176°F); PVDF: 100 °C (212°F) |
| Metal fitting | PN16 |
| Fluid temperature max: | 100 °C (212°F) |
| Ambiant temperature | 0 to 60 °C (32 to 140 °F) |
| Storage temperature | 0 to 60 °C (32 to 140 °F) |
| Relative humidity | 80 % |
| Enclosure | IP65 |
| Measuring error | 1. With In-line calibration (Teach-In): $\leq \pm 0.5\%$ o.F.S. (at 10 m/s) * 2. With standard mean K-Factor: $\leq \pm(0.5\%$ o.F.S. +2.5% o.R.) * $\leq \pm 0.5\%$ o.F.S. (at 10 m/s) * |
| Linearity | $\leq \pm 0.5\%$ o.F.S. (at 10 m/s) * |
| Repeatability | 0.4% o.R. * |
| Display | 15 x 60 mm LCD 8 digits, alphanumeric, 15 segments, 9 mm high |
| Sensor holder | PVDF, PP, PVC, SS 316L (1.4404), Brass |
| Paddle-wheel | PVDF |
| Axis and bearing | ceramic |
| O-rings | FPM |
| Electronics housing | PC; Front plate foil polyester |
| Voltage supply | 12...30 VDC (230 VAC power supply as option) |
| Binary inputs | 4 inputs, 5...30 VDC |
| Relay output | 2 relays, 3 A, 220 V, freely adjustable |

(*) Under reference conditions i.e. measuring fluid water, ambient and water temperature 20°C, applying the minimum inlet and outlet pipe straights, matched pipe dimensions.
 o.F.S. = of standard Full Scale (10 m/s) - o.R. = of Reading



Measuring error with/without Teach-In

3.1 Installation Guidelines



The controller SE35 Batch INLINE can only be used to measure pure, liquid and water-like fluids (solids content $\leq 1\%$, viscosity max. 300 cSt with on-line calibration).

Observe pressure-temperature dependence according to the respective fitting materials.

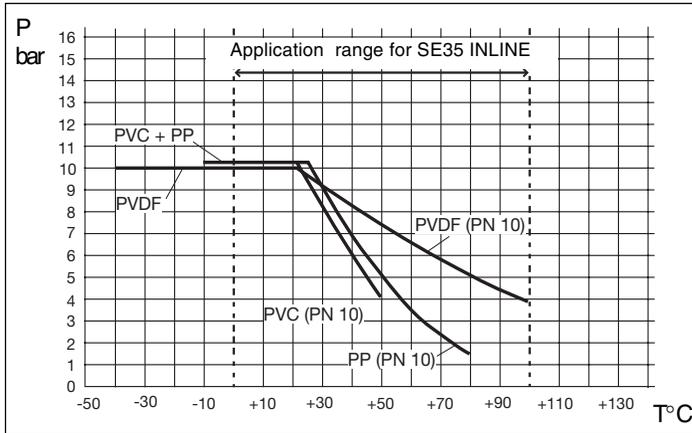


Fig. 2 Pressure-Temperature-Diagram

Fitting S030 installation guidelines

The pipe must be completely filled with the liquid, i.e. air bubbles must not be present. The flow sensor is not designed for gas flow measurement.

The device must be protected from constant heat radiation and other environmental influences, such as direct exposure to sunlight.

The recommended upstream and downstream straight pipe length should respect 10xD in and 3xD out.

According to pipe's design, necessary distances can be bigger or use a flow straightener to obtain the best accuracy.

For more information please refer to EN ISO 5167-1.

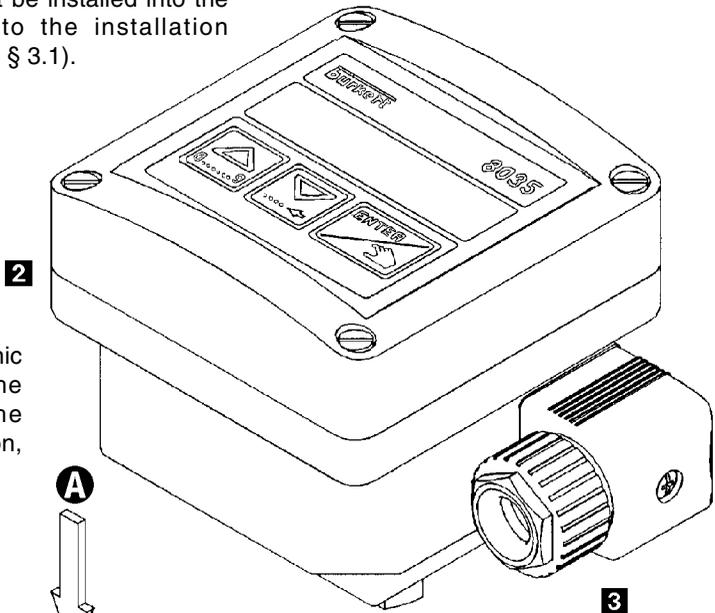
The flow sensor can be installed in either horizontal or vertical pipe.

The suitable pipe size is selected using the diagram on the end pages. Pressure and temperature ratings must be respected according to the selected fitting material. (see fig. 2)

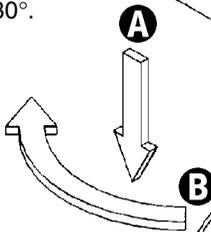
3.2 Process mounting

The flow controller electronic module SE35 Batch INLINE can be easily installed in pipes using the specially designed fitting system S030 INLINE.

1. The fitting **1** must be installed into the pipe according to the installation specifications (see § 3.1).



2. Fasten the electronic housing **2** to the fitting using the bayonet connection, and turn by 30°.



Wiring instructions § 3.4

3. Tighten the electronic housing with the screw **4**.

Fig. 3 Batch controller 8035 INLINE Batch mounting diagram

3.3 General Electrical Connection

The connecting cable conducts the input/output signals and must not be installed in combination with high voltage or high frequency carrying lines. If a combined installation cannot be avoided, either keep a min. space of 30 cm (approx. 1 ft) or use coax cables. When using coax cables observe faultless grounding of the shield. For normal operating conditions, the input/output signal can be transmitted by a simple cable of 0.75 mm² cross section.

The power supply must be of good quality (filtered and regulated).

Note: For EMC purposes, the earth must be connected via the earth lug on the side of the enclosure. This point must be connected locally to a good earth.

3.4 Electrical connection SE35 Batch

The connections are made via the two 13,5 cable glands.

Remove cover, pull the cable through a PG 13.5 and wire according to following pin assignment and fig. 4:

- 1: Binary input 1
 - 2: Binary input 2
 - 3: Binary input 3
 - 4: Binary input 4
 - 5: Indicator lamp output (Transistor Open Collector)
 - 6: Common (binary inputs and outputs)
 - 7: L+ (12...30 VDC)
 - 8: L-
 - 9: Earth
 - 10: Relay 2
 - 11: Relay 2
 - 12: Relay 1
 - 13: Relay 1
- Main valve
see § 4.4.7

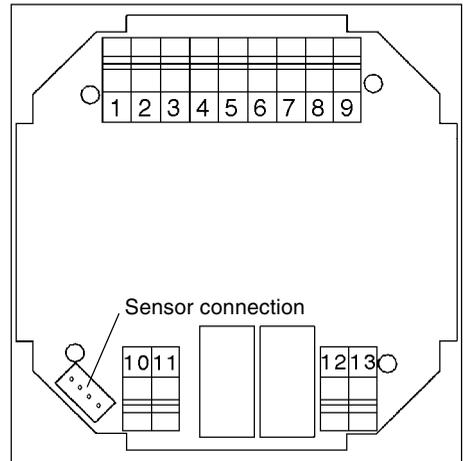


Fig. 4 Pin assignment SE35 Batch

Note: The driver unit supply voltage can be used for the binary inputs and the indicator lamp output (open collector). In this case the common terminal (6) and the L- terminal (8) should be connected together.

3.5. Electrical Connections for a Supply Voltage of 230/115 VAC (option)

Remove the cover from the unit, the power supply board is on the bottom of the housing. Pull the cable through a PG 13.5 cable gland and wire according to fig. 5. The other connections will be the same as on the standard version § 3.4.

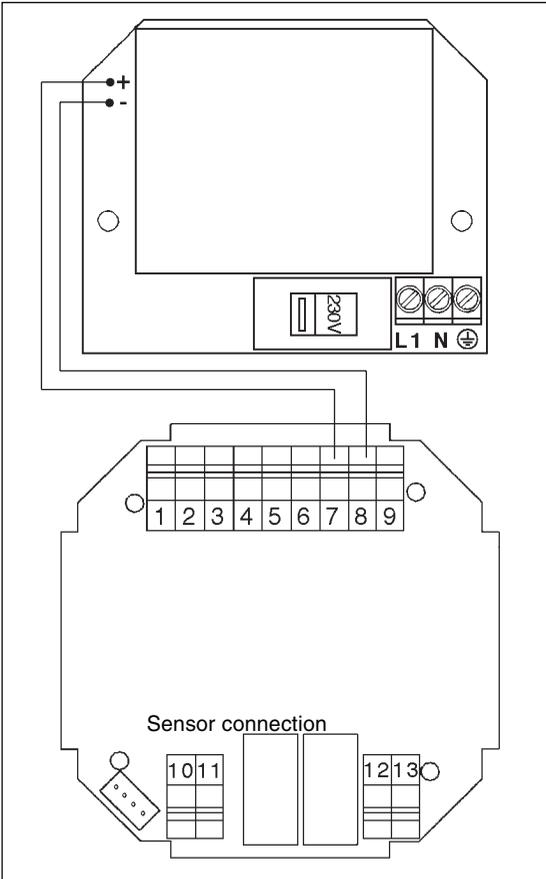


Fig. 5 Connection diagram for controller 8035Batch 230V /115 V AC option



Important: The 230/115 VAC version doesn't allow the driver unit power supply to be used for the binary data inputs and the indicator lamp output (open collector).

The operation is classified according to three levels.

A) Display

This menu allows the user to control the dosing by the keypad (start, pause, reset, stop); using the LCD display, he can monitor the flow rate and the initial preset volume throughout the dosing operation. The readings of the main counter and the daily counter are displayed within this menu. The daily counter can be set to zero.

B) Parameter Definition

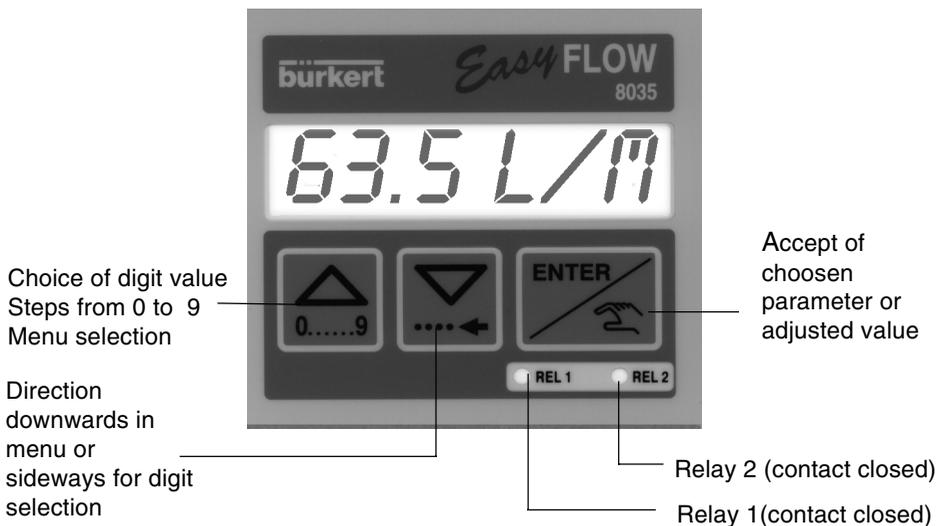
This menu enables the setting of dosing parameters (languages, measurement units, equipment, K factor, dosing option, overfill correction, alarm and relay thresholds). Simultaneous resetting of the two counters is carried out within this menu.

C) Testing

This menu enables the user to check the binary inputs (remote control) and to simulate the operation of the relays.

It also caters for measuring the rotation frequency of the paddle wheel.

4.1 Controller Operating and Control Elements



4.2 Description of Dosing Options

Dosing options are selected within the «*OPTION*» sub-menu of the Calibration Menu. (§ 4.4.4.)

4.2.1. «*LOC.MANU*» Option»

When this option is selected, the prompt «*BATCH M*» is displayed within the main menu. It enables the generation of a volume which can be defined using the keypad. (see § 4.3.1.)

4.2.2. «*LOC.MEM*» Option

When this option is selected, the prompt «*BATCH R*» is displayed within the main menu. Generation of a volume previously entered into the memory (7 in total) from the keypad (see § 4.3.2.).

4.2.3. «*MEM+MANU*» Option

When this option is selected, the prompts «*BATCH M*» and «*BATCH R*» are displayed within the main menu.

Generation of a volume either manually or automatically. (see § 4.3.1 and § 4.3.2).

4.2.4 »EXT.MEM« Option

Generation of a volume previously entered into the memory (7 in total) from a remote position by using the binary data inputs (See § 4.2.2.). The following example describes the various methods of connection.

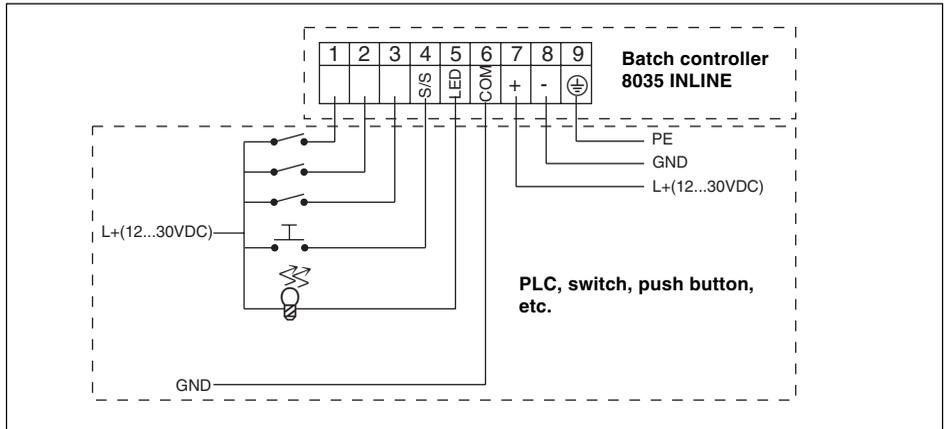


Fig. 6 Connection to a PLC

The selection of a volume from the memory (1 to 7) is carried out by encoding the binary data at inputs 1,2 and 3. The following table shows the logic value at each input to provide each of the desired seven quantities:

| Volume | V1 | V2 | V3 | V4 | V5 | V6 | V7 |
|---------|----|----|----|----|----|----|----|
| Input 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| Input 2 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| Input 3 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

1: Input enabled (switch closed)

0: Input disabled (switch open)

Input 4: Start / Pause function (from a push button, for example).

Output 5: Transistor output (open collector)

Provides Batch controller status information. For example, it can be used to feed an indicator lamp.

The following status can be indicated:

Lamp off

Lamp on

Slow flashing (1 Hz)

Rapid flashing (3.5 Hz)

No dosing in progress

Dosing in progress

Pause in dosing operation

Alarm (problem during dosing operation)

4.2.5. «EXT. [T]» Option

Delivery of a volume proportional to the duration of the high level on the input 1 (see § 4.3.3.). The proportional relationship is as follows:

$$X = \text{Volume} = (A \times t) + B$$

A Coefficient of proportionality (/s;...)
 B Offset (l;...)
 t Duration of input 1 activation (ms, s;...)
 X Dosing volume (l;...)

Coefficients A and B entered by the user.

Pulse specification

| | |
|-------------------------|------------|
| T _{min} : | 100 ms |
| T _{max} : | 300 s |
| Definition: | 5 ms |
| Delay between 2 pulses: | min 100 ms |

Practical examples:

- **1** Filling cans of 5, 10 and 50 litres respectively. The following values can be entered:

$$A = 5 \text{ l/s}$$

$$B = 0 \text{ l}$$

The activation times for binary data input 1 for the three volumes are as follows:

| | | | |
|--------------|---|----|----|
| Volume (l) | 5 | 10 | 50 |
| Duration (s) | 1 | 2 | 10 |

- **2** Doses of chemical products as a function of required concentration. Volumes of 110, 120, 130, and 150 litres. The following values can be entered:

$$A = 5 \text{ l/s}$$

$$B = 100 \text{ l}$$

The activation times for binary data input 1 for the three volumes are as follows:

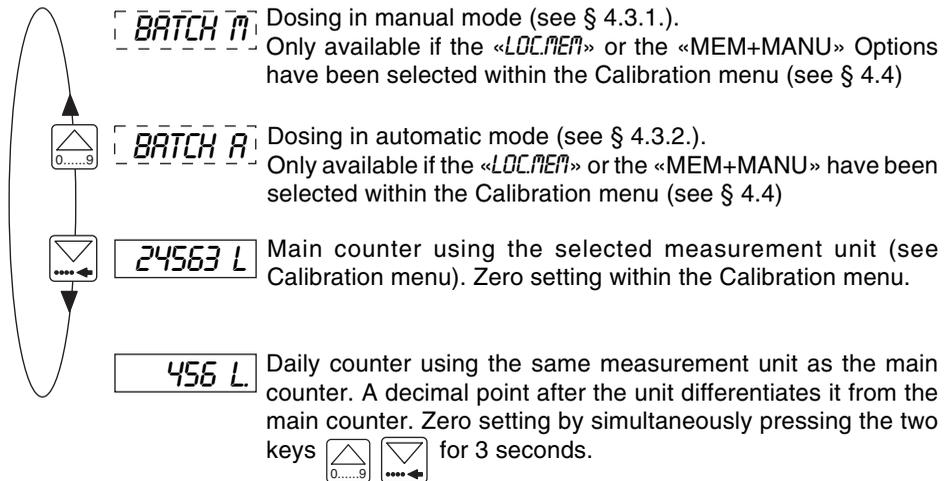
| | | | | |
|--------------|-----|-----|-----|-----|
| Volume (l) | 110 | 120 | 130 | 150 |
| Duration (s) | 2 | 4 | 6 | 10 |

Notes:

- The activation time for the binary data input must always be lower than the actual filling time. A margin of safety should be allowed when choosing the coefficients A and B.
- The coefficients A and B should be chosen such that the activation times for the binary data input should be efficient. In the example **2**, one could have chosen A = 100 l/s and B = 0 l. The resulting activation times would be 1.1, 1.2, 1.3 and 1.5 seconds. In this case the distributed doses would be less accurate.

4.3 Main menu

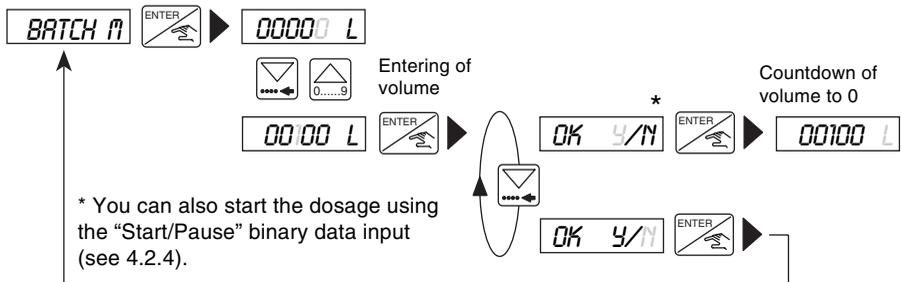
Within the main menu, following readouts are available:



The following sub-routines describe the various dosing options together with the prompts displayed within the main menu. The *GREY CHARACTERS* are flashing when displayed.

4.3.1. Dosing in manual mode » *LOC.MEM* » or «*MEM+MANU*» Options

Generation of a volume previously entered from the keypad.



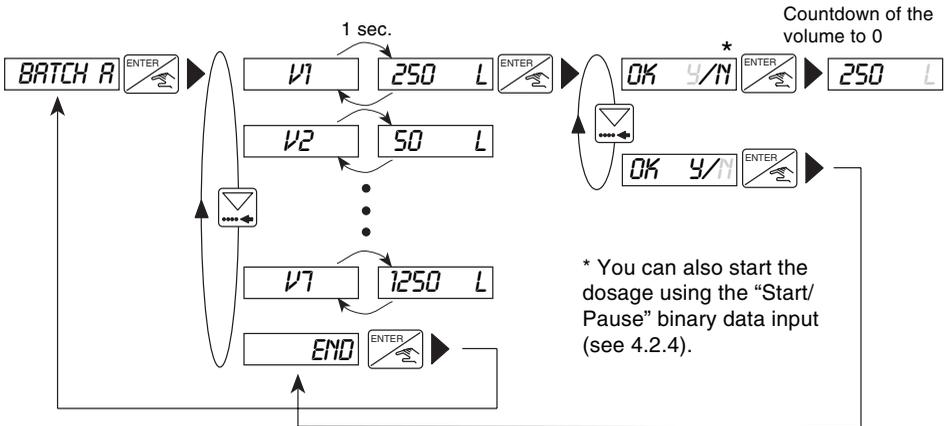
The volume must be greater than 6 pulses generated by the paddle-wheel. The entry of a zero volume forces a return to the «*BATCH M*» option.

The «*ALARM*» prompt during a dosing operation signifies a dosing problem (see § 5.1). During the measure of the selected volume, displaying the flow rate, pause, reset or stop the dosing operation. (see § 4.3.4.; § 4.3.5.) are still possible.

4.3.2. Dosing in automatic mode («LOC.MEM», «MEM+MANU», or «EXT.MEM» Options)

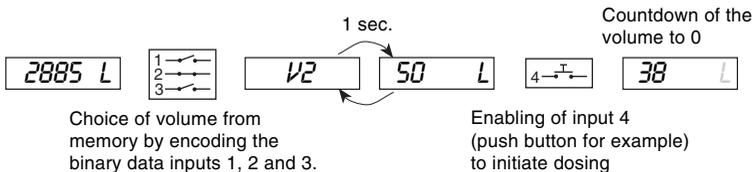
Generation of the volume from one of the 7 values previously entered into the memory. The selected volume can be initiated either from the keypad or by the binary inputs.

Initiating the dosing from the keypad («LOC.MEM», «MEM+MANU» Options)



Zero quantities (from V1 to V7) will not be displayed.

Initiating the dosing from the binary data inputs («EXT.MEM» Option)



«ALARM» prompt during dosing operation: dosing problem (see § 5.1.)

During the dosing of the selected volume, it is possible to display the flow rate, to pause, to reset or to stop the operation (see § 4.3.4. and § 4.3.5)

4.3.3. Dosing proportional to a pulse duration («EXT.IT» Option)

This option enables the initiation of a dosing volume proportional to the time during which binary data input 1 is enabled. The following prompts are displayed within the principal menu during the dosing operation.

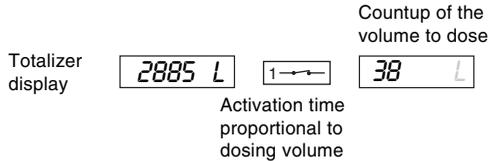
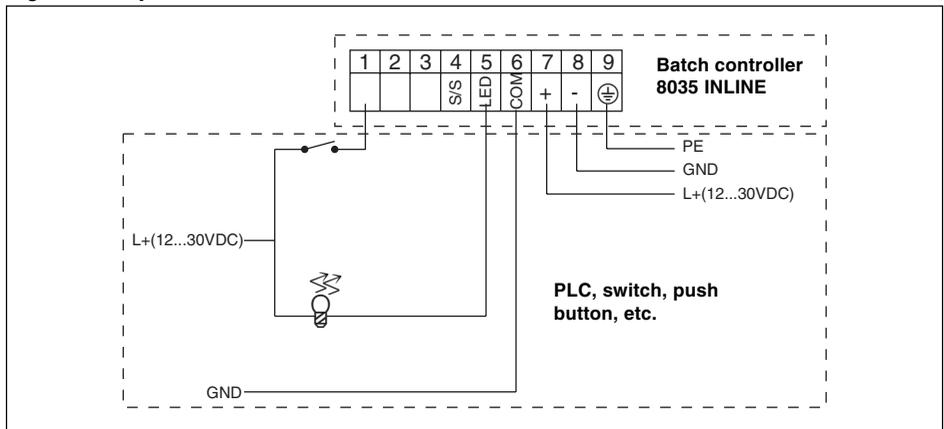


Fig. 9 Example of electrical connection

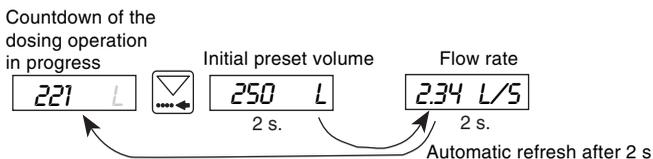


«ALARM» prompt during the dosing operation: dosing problem (see § 5.1.).

During the dosing of the selected volume, it is possible to display the flow rate, to pause, to reset or to stop the operation. These facilities are only selected on the keypad. (see § 4.3.4. and § 4.3.5)

4.3.4. Display of flow rate and the initial preset volume during the dosing.

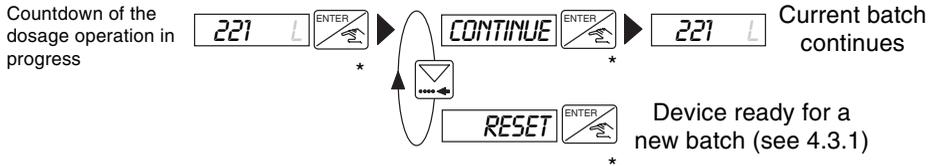
To display the flow rate and of the initial preset volume values during the dosing operation, press the  key briefly. This is a useful facility irrespective of the dosing option chosen.



4.3.5. Pause / reset function

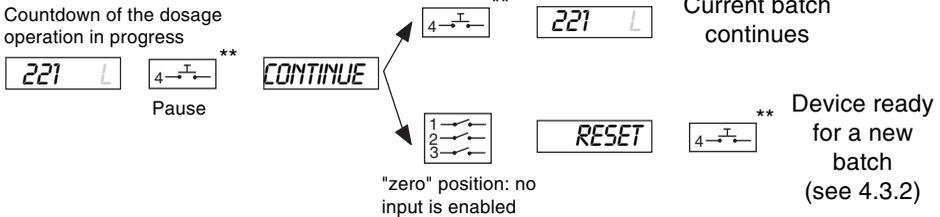
A current dosage can be momentarily or definitively stopped (except mode EXT [T]).

a) Modes MEM+MANU, LOC.MEM, LOC.MANU :

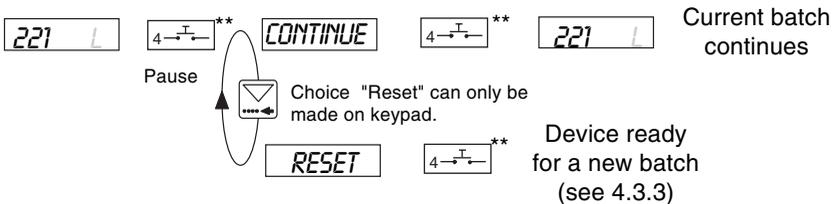


* When in mode MEM+MANU, LOC.MEM or LOC.MANU, you can also start the dosage using the 'Start/Pause' Binary Data Input.

b) Mode EXT.MEM :



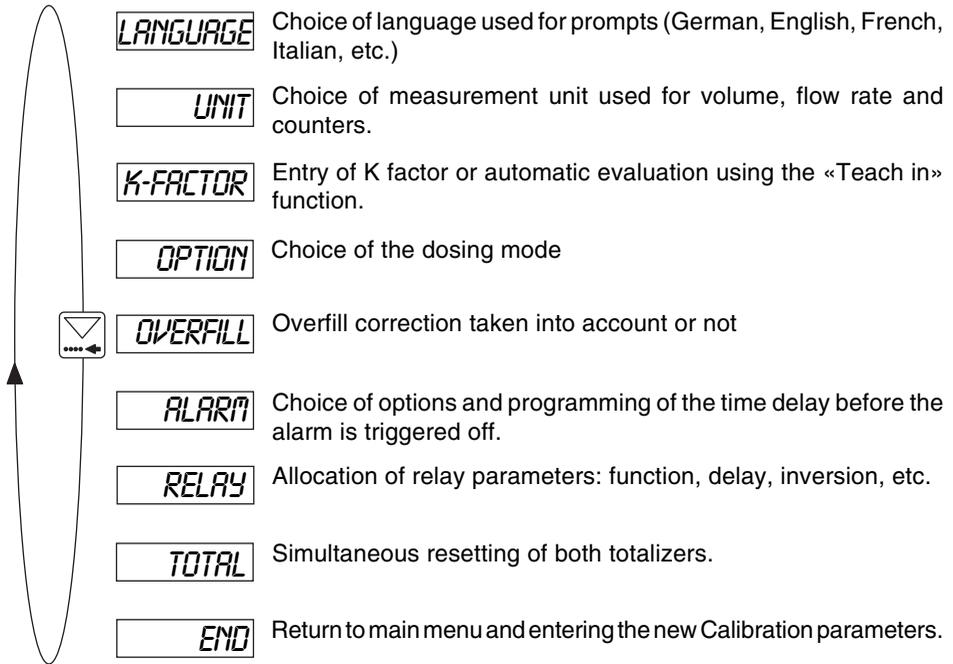
c) Mode EXT [T] :



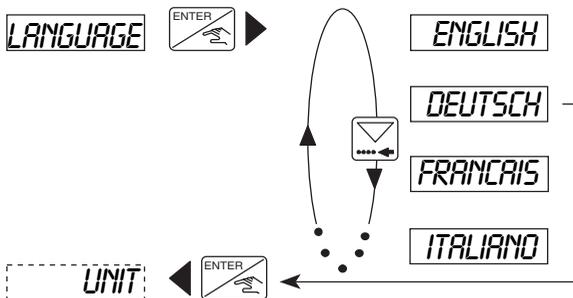
(**) When in mode EXT.MEM or EXT [T], you can also press the Enter key on the keypad.

4.4. Calibration Menu: pressing simultaneously for 5 seconds

Within this menu, the following parameters may be set:

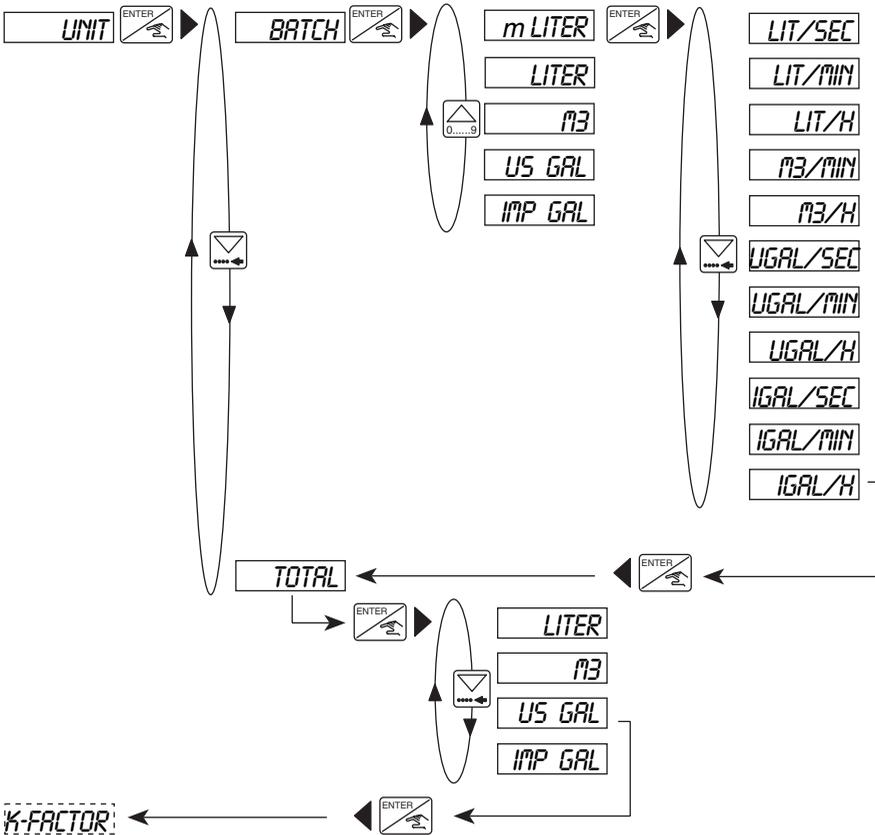


4.4.1 Language



The required language becomes operational when the ENTER key is pressed.

4.4.2 Unit



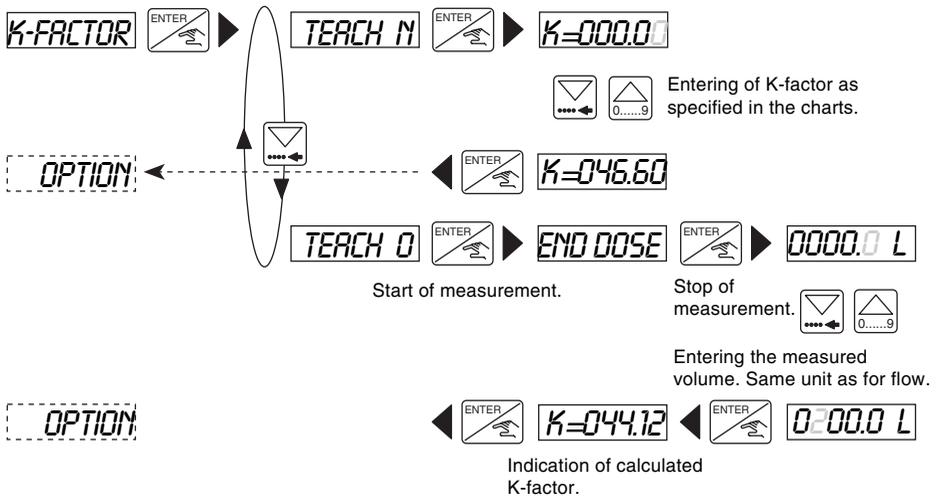
Note: Return to the main menu is only available from the «TOTAL» Sub-Menu.

4.4.3 K-factor

The K-factor of the fitting is entered within this menu (see instruction manual fitting S030). The "TEACH IN" function allows the practical determination of the specific K-factor. The user only needs to run a known volume through his system.

Example: In order to determine a volume as accurately as possible, the user shall fill a tank of 100 l. When the message "TEACH YES" appears, he presses the ENTER key to start the measuring procedure. The message "FILL END" (end of filling) will appear. He then switches on a pump or opens a valve. As soon as the tank is empty, he switches off the pump or closes the valve. Pressing Enter stops the measurement. The user will then be asked to enter the volume (100 l). The calculated K-factor is displayed after confirmation.

Note: The device uses the last K-factor entered or determined .



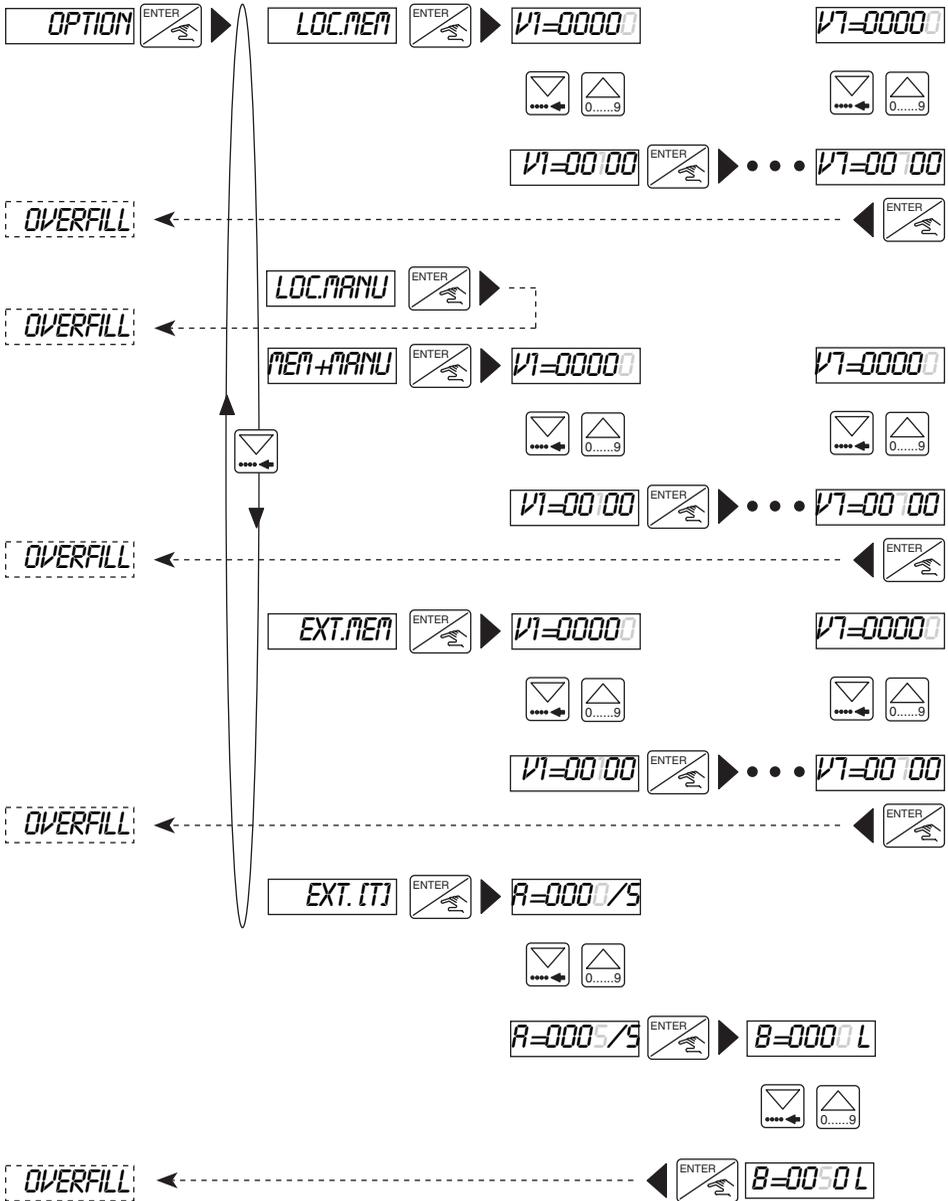
Note: A decimal point can be entered by simultaneously pressing keys . It will always be positioned to the right of the flashing digit. Three positions are possible, «0000.0», «0000.0» or «000.00».

Adjustment range for the K factor : 0,01 to 99999.

4.4.4. Dosing Options

Selection the dosing option from: LOC.MEM, LOC.MANU, MEM+MANU, EXT.MEM, and EXT.[T].

For more information on these options, see § 4.2

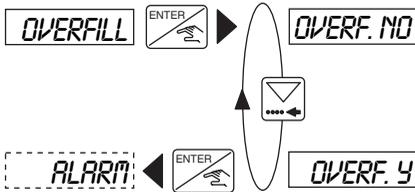


When entering volumes (quantities) V1 to V7, the measurement unit which applies is that which was selected for the the dosing volume (see Calibration Menu).

Note: A decimal point can be entered by simultaneously pressing keys  . It will always be positioned to the right of the flashing digit.

4.4.5. Overfill correction

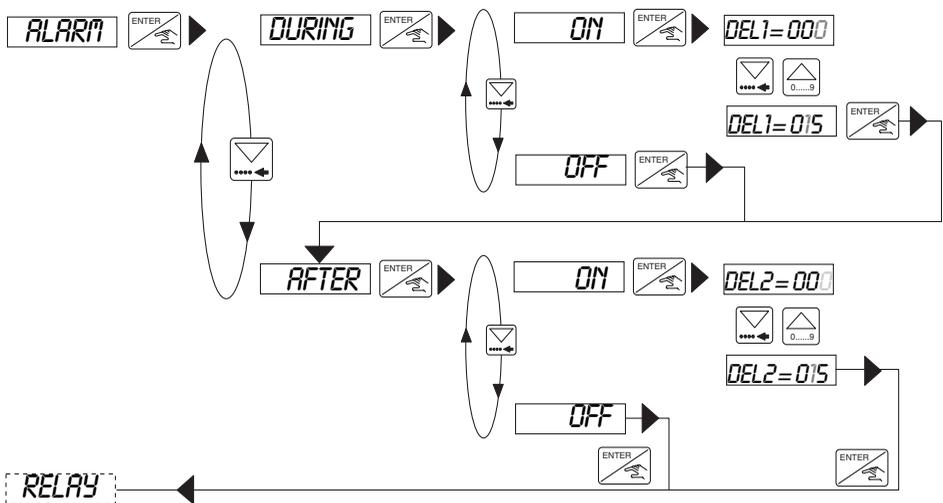
The 8035 Batch controller has an overfill correction facility. It memorises the fluid volume which flows after the closure of the valve so that this volume can be deducted from the next batch. In this sub-menu the user enables or disables the overfill correction facility.



4.4.6 Alarm

The menu makes it possible to enable or disable the trigger-off of the alarm during a dosage (DURING option) and/or after a dosage (AFTER option). It also makes it possible to program the time delay before the alarm is triggered off, for either option. The alarm display prompt is «ALARM». This alarm data prompt is also available on tag strip terminal N°. 5 (transistor output, open collector) and on Relay N° 2 if this relay has been configured as an alarm relay (see next paragraph).

For the conditions required to trigger off the alarm, see Section 5.



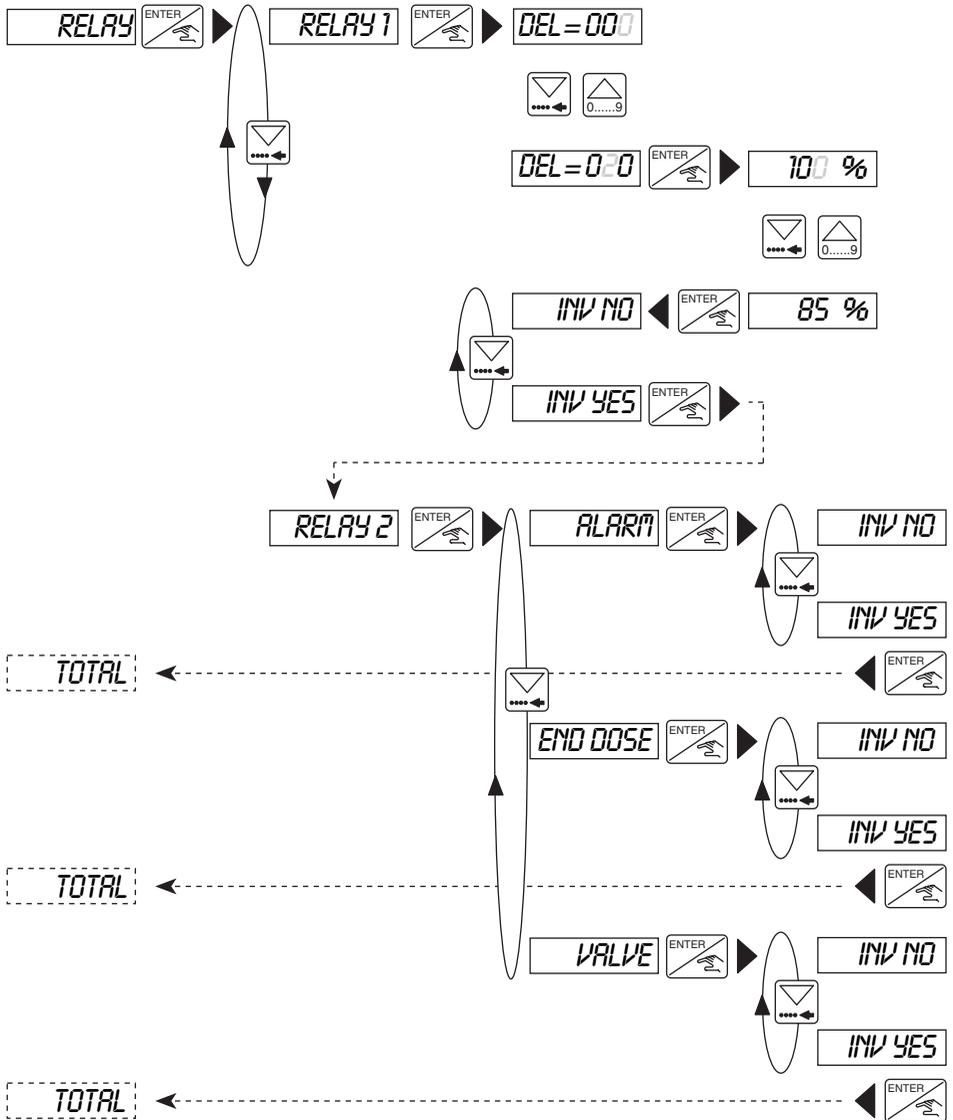
Range of adjustment: between 0 and 999 seconds.

Remark: The time delay before the alarm is triggered off must take into account the overfill correction if enabled.

4.4.7. Relays

The 8035 Batch controller provides 2 relays:

- Relay 1 controls the opening of the main valve (high flow rate). A delay before activation may be selected and the operating polarity may be inverted; the user also has the facility of setting the percentage of the selected volume to be delivered through the main valve (high flow rate). This implies that the Relay 2 controls an auxiliary valve (low flow rate) in order to provide the remainder of the entire selected volume.
- Relay 2 can be configured for three different functions: Alarm, End of the dosing and Control of an auxiliary valve. In each configuration the operating polarity can be inverted.

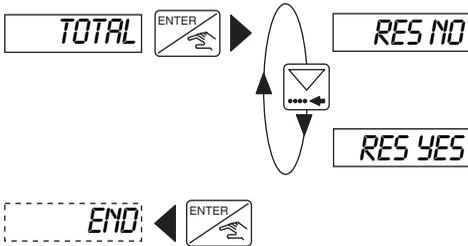


Notes:

- If Relay 1 is configured for a percentage flow rate different from 100, then Relay 2 will automatically be configured for valve control. The other options will no longer be available.
- Relay 1 will not open the valve until the entered delay period has elapsed.

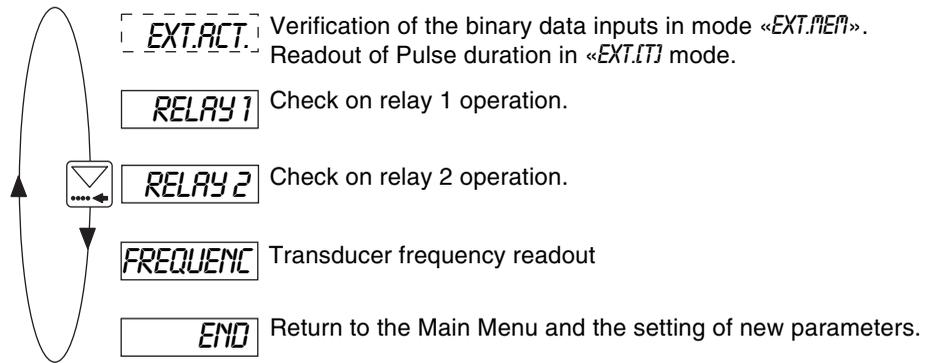
4.4.8 Totalizer

Simultaneous setting of both counters to zero. This facility becomes operational when the user presses the ENTER key while in the «END» option within the Calibration menu.



4.5 Test Menu: Press simultaneously for 5 s.

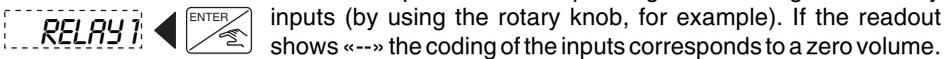
The following adjustments and checks are carried out in the Test Menu:



4.5.1 EXT.ACT.

This sub-menu provides for checking the allocation of binary logic levels to the binary data inputs under the «EXT.MEM» dosing option and also provides a readout of the pulse duration under option «EXT.IT».

«EXT.MEM» Option



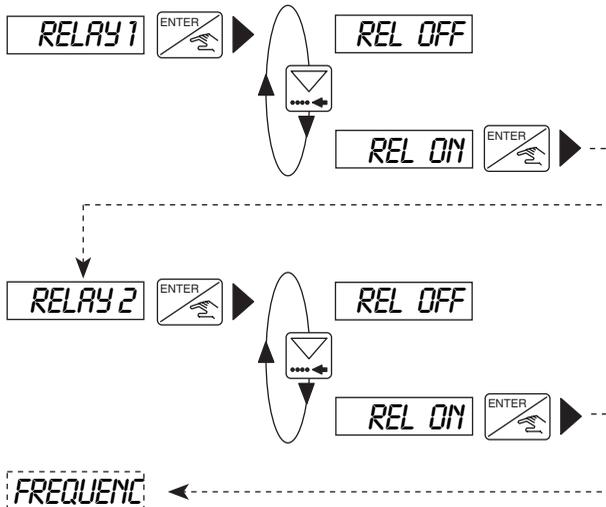
«EXT. [T] Option

In this option, the user can check the pulse duration being sent to the 8035 Batch controller.



4.5.2. Check on operation of relays

This option allows the operator to check for correct operation of the relays by using the keypad to energise the relays.



4.5.3. Frequency readout

Readout of paddlewheel rotation frequency. To clear the display and proceed to the next option, press the ENTER key.



Note: After the display of the «FREQUENC» prompt, pressing the ENTER key will energise Relay 1 (to open the valve).

5.1 Fault prompts

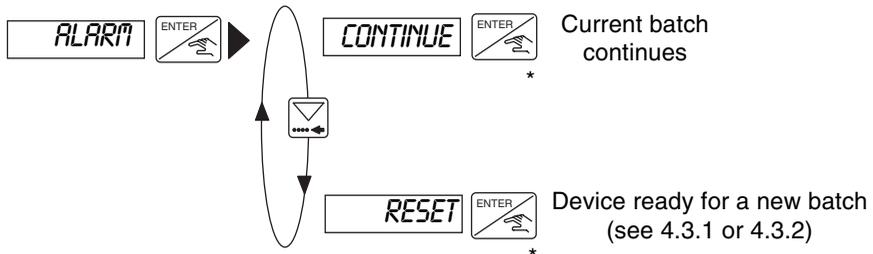
5.1.1. «ALARM» prompt

"ALARM" PROMPT DURING A DOSAGE

The «ALARM « prompt will be displayed during a dosage operation (irrespective of the dosage option) if one or both valves are open but the controller does not detect any flow. The time delay before triggering the alarm is set in the Calibration menu. (see § 4.4.6).

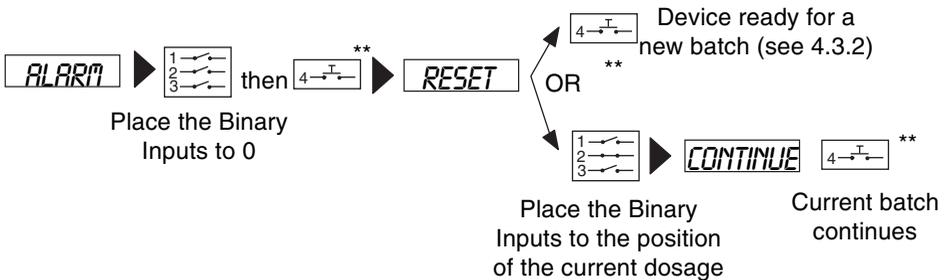
A dosage that has been stopped by the alarm can either be continued or cancelled:

a) Manual or automatic dosage activated by LOC.MANU, LOC.MEM or MEM+MANU:



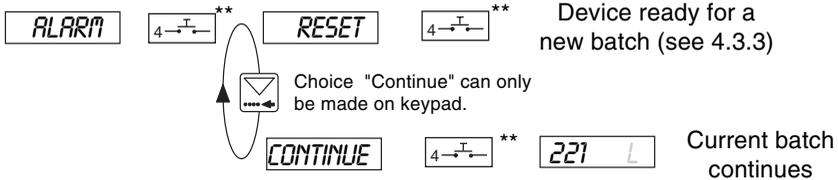
* When in mode MEM+MANU, LOC.MEM or LOC.MANU, you can also start the dosage using the 'Start/Pause' Binary Data Input.

b) Dosage through Binary Inputs and activated by EXT.MEM :



(**) When in mode EXT.MEM or EXT [T], you can also press the Enter key on the keypad.

c) Dosage through Binary Inputs and activated by EXT.MEM :



(**) When in mode EXT.MEM or EXT [T], you can also press the Enter key on the keypad.

"ALARM" PROMPT AT THE END OF A DOSAGE

The «ALARM» prompt will be displayed at the end of a dosage operation (irrespective of the dosage option) if one or both valves are closed and if the controller detects that there is still a flow condition after the time delay period before alarm triggering has elapsed.

Note: The alarm time delay must take account of any jet correction that may have been entered (the fluid quantity which continues to flow after the closure of the valve).

a) Manual or automatic dosage activated by LOC.MANU, LOC.MEM or MEM+MANU:



b) Dosage through Binary Inputs and activated by EXT.MEM or EXT [T]:



(**) When in mode EXT.MEM or EXT [T], you can also press the Enter key on the keypad.

5.1.2. «[T] ERROR» prompt

This error prompt only occurs in the «EXT.[T]» option. It is displayed during a dosing operation if the duration of the pulse is greater than 300 seconds, or if it is greater than the duration necessary to deliver the relevant volume.

It will also appear if the volume to deliver is greater than 100000 (l, m³, etc.) or if the volume delivered has reached 100000 (l, m³, etc.) and when the pulse has not been switched off.

A rectangular display box containing the text "T [ERROR]" in a monospaced font.



Device ready for a new batch
(see 4.3.3)

**

(**) When in mode EXT.MEM or EXT [T], you can also press the Enter key on the keypad.

5.1.3. «ERROR» prompt

The «ERROR» prompt flashes then the calibration parameter values have been lost. Press the ENTER key, the Main Menu is displayed, but the unit is set in the basic default configuration (see § 5.3). It is necessary to re-program the driver unit. If the display of this prompt recurs, return the unit to your supplier.

5.2. Transducer maintenance

In correct installation conditions, the 8035 Batch controller is maintenance free. If clogging occurs, the immersed parts of the sensor can be cleaned with water or any other cleaning agent suitable for use with PVDF.

5.3 Factory setting of Batch controller SE35 INLINE on delivery

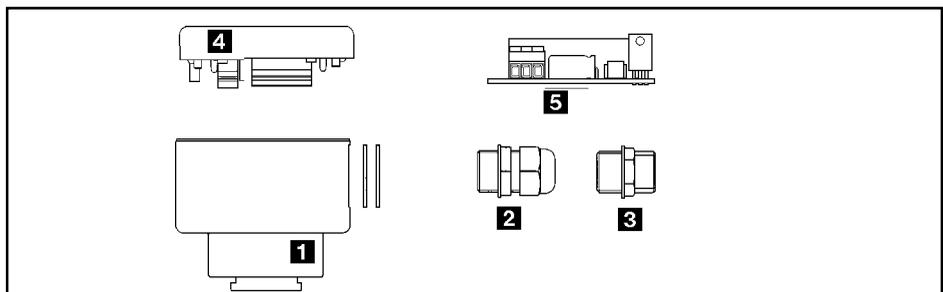
| | | | |
|----------------------|----------|--------------------------|---------------|
| Language: | English | Overfill correction: | yes |
| Unit flow: | L/s | Alarm DURING: On, DEL1 = | 100 |
| Unit totalizers: | L | Alarm AFTER: On, DEL2 = | 100 |
| Unit batch: | L | Relay 1: | DEL = 000 |
| K-Factor: | 001.00 | | 100 % |
| Batch option: | MEM+MANU | | inversion: NO |
| Quantities V1 to V7: | 00000 | Relay 2: | VALVE |
| | | | inversion: NO |

| | | | |
|----------------------|--|----------------------|------------|
| Language: | | Overfill correction: | |
| Unit flow: | | Alarm DURING: | DEL1 = |
| Unit totalizers: | | Alarm AFTER: | DEL2 = |
| Unit batch: | | | |
| K-Factor: | | Relay 1: | inversion: |
| Batch option: | | | |
| Quantities V1 to V7: | | Relay 2: | inversion: |

5.4. Spare Parts List

Controller electronic module SE35 BATCH, 2 totalizers

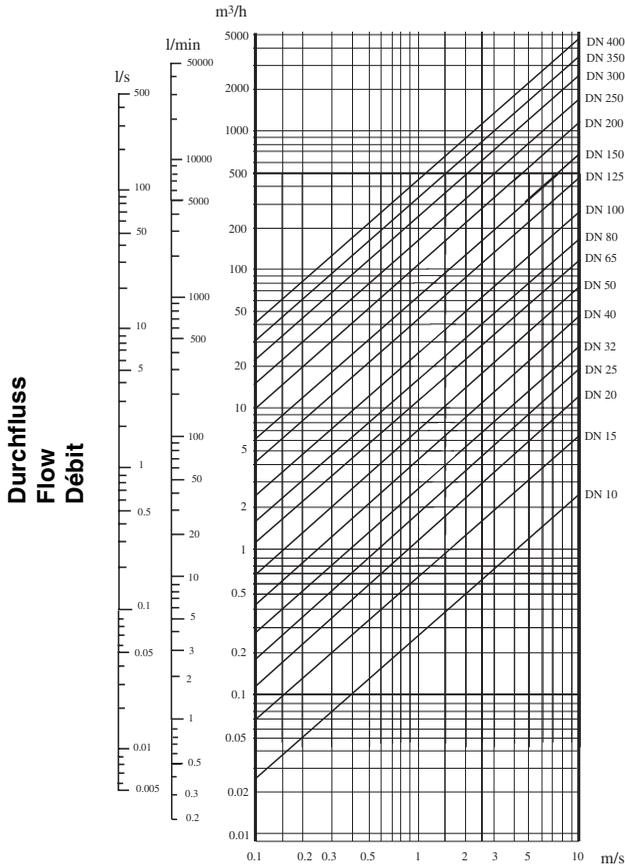
| Position | Specification | Order N ^o . |
|----------|---|------------------------|
| 1 | Sensor housing with 2 flat seals | 425248 |
| 2 | PG 13.5 | 444778 |
| 3 | PG 13.5 USA-version (G 1/2 ") | 444779 |
| 4 | Cover with screws, sheeting and printed circuit board | |
| | Controller software version Batch | 425432 |
| 5 | Power supply board 115/230 VAC | 419581 |
| | Instruction manual Fitting S030 | 426107 |
| | Instruction manual controller | 419744 |



Durchfluss-Diagramm (l/s, l/min, m³/h, DN in mm und m/s)

Flow chart (l/s, l/min, m³/h, DN in mm und m/s)

Abaque débit/vitesse/diamètre (l/s, l/min, m³/h, DN en mm et m/s)



Durchflussgeschwindigkeit - Flow velocity - Vitesse du fluide

Auswahlbeispiel/Example/Exemple

Vorgabe/Specifications/Données

Nominaler Durchfluss/Flow/Débit 10 m³/h

Ermittlung mit idealer Durchflussgeschwindigkeit: 2...3 m/s

Determination with ideal flow velocity: 2...3 m/s

Vitesse optimale du fluide 2...3 m/s

Aus dem Diagramm resultiert die erforderliche Nennweite von DN 40

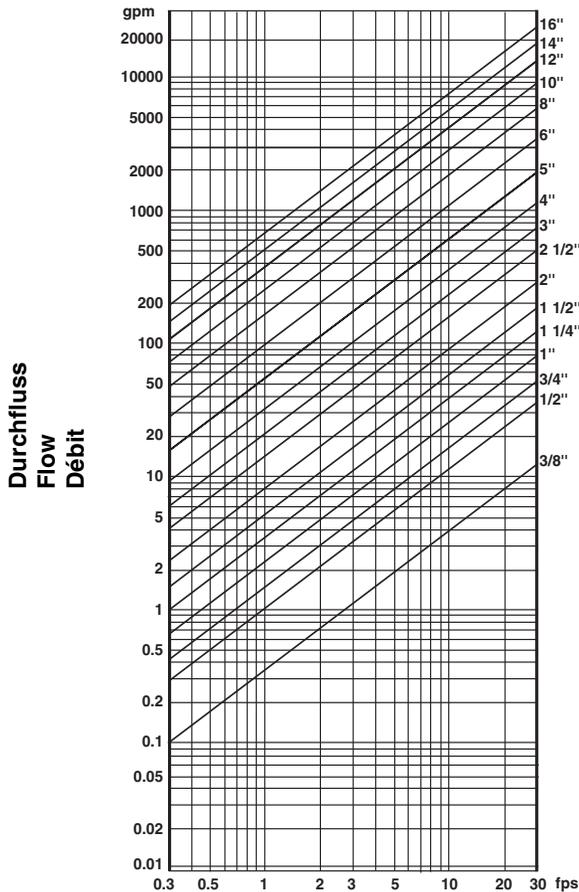
With these specifications, the required orifice as defined by the flow chart is DN 40

Selon l'abaque un raccord de DN 40 est le mieux approprié.

Durchfluss-Diagramm (gpm, DN in inch und fps)

Flow chart (gpm, DN in inch and fps)

Abaque débit/vitesse/diamètre (US-gallon/min, DN en inch et ft/s)



Durchflussgeschwindigkeit - Flow velocity - Vitesse du fluide

Auswahlbeispiel/Example/Exemple

Vorgabe/Specifications/Données

Nominaler Durchfluss/Flow/Débit 50 gpm

Ermittlung mit idealer Durchflussgeschwindigkeit: 8 fps

Determination with ideal flow velocity: 8 fps

Vitesse optimale du fluide 8 fps

Aus dem Diagramm resultiert die erforderliche Nennweite von DN 40

With these specifications, the required orifice as defined by the flow chart is DN 40

Selon l'abaque un raccord de DN 40 est le mieux approprié.

SERVICE

Australia

Bürkert Fluid Control Systems
Unit 1 No.2, Welder Road
Seven Hills NSW 2147
Tel +61 (0) 2 967 461 66
Fax +61 (0) 2 967 461 67

Austria

Bürkert Contromatic GmbH
Central and Eastern Europe
Diefenbachgasse 1-3
A-1150 Wien
Tel +43 (0) 1 894 13 33
Fax +43 (0) 1 894 13 00

Belgium

Bürkert Contromatic N.V./S.A
Middelmolenlaan 100
B-2100 Deurne
Tel +32 (0) 3 325 89 00,
Fax +32 (0) 3 325 61 61

Canada

Bürkert Contromatic Inc.
760 Pacific Road, Unit 3
Oakville, Ontario, L6L 6M5
Tel +1 905 847 55 66,
Fax +1 905 847 90 06

China

Bürkert Contromatic
(Suzhou) Co. Ltd.
9-2, Zhu Yuan Road
New District, Suzhou
Jiangsu, 215011 P.R.C
Tel +86 512 808 19 16
Fax +86 512 824 51 06

Bürkert Contromatic
China/HK Ltd.
Rm. 1313
No. 103, Cao Bao Road
200233 Shanghai P.R.C
Tel +86 21 6427 1946
Fax +86 21 6427 1945

Bürkert Contromatic
China/HK Ltd.
Beijing Office
Rm. 808, Jing Tai Building
No. 24, Jianguomen
Waidajie
100022 Beijing P.R.C
Tel +86 10 65 15 65 08
Fax +86 10 65 15 65 07

Bürkert Contromatic
China/HK Ltd.
Cheng Du Representative Office
Rm. 502, Fuji Building
No. 26 Shududadao
Dongfeng Street
Chengdu P.R.C
Tel +86 28 443 1895
Fax +86 28 445 1341

Bürkert Contromatic
China/HK Ltd.
Guangzhou Representative Office
Rm. 1305, Tower 2
Dong-Jun Plaza
Dongfeng, Road East
Guangzhou P.R.C
Tel +86 28 443 1895
Fax +86 28 445 1341

Denmark

Bürkert-Contromatic A/S
Hørkær 24
DK-2730 Herlev
Tel +45 44 50 75 00
Fax +45 44 50 75 75

Finland

Bürkert Oy
Atomitie 5
SF-00370 Helsinki
Tel +358 (0) 9 549 706 00
Fax +358 (0) 9 503 12 75

France

Bürkert Contromatic
B.P. 21
Triembach au Val
F-67220 Villé
Tel +33 (0) 388 58 91 11
Fax +33 (0) 388 57 09 61

Germany / Deutschland

Bürkert Steuer- und Regeltechnik
Christian-Bürkert-Straße 13-17
D-74653 Ingelfingen
Tel +49 7940 10-0
Fax +49 7940 10 361

Niederlassung NRW
Holzener Straße 70
D-58708 Menden
Tel +49 2373 96 81-0
Fax +49 2373 96 81-52

Niederlassung Frankfurt
Am Flugplatz 27
D-63329 Egelsbach
Tel +49 6103 94 14-0
Fax +49 6103 94 14-66

Niederlassung München
Paul-Gerhardt-Allee 24
D-81245 München
Tel +49 89 82 92 28-0
Fax +49 89 82 92 28-50

Niederlassung Berlin
Bruno-Taut-Straße 4
D-12524 Berlin
Tel +49 30 67 97 17-0
Fax +49 30 67 97 17-66

Niederlassung Dresden
Christian Bürkert Straße 2
D-01900 Großbröhrsdorf
Tel +49 35952 3 63 00
Fax +49 35952 3 65 51

Niederlassung Hannover
Rendsburger Straße 12
D-30569 Hannover
Tel +49 511 9 02 76-0
Fax +49 511 9 02 76-66

Niederlassung Stuttgart
Karl-Benz-Straße 19
D-70794 Filderstadt (Bernh.)
Tel +49 711 4 51 10-0
Fax +49 711 4 51 10-66

Great Britain

Bürkert Contromatic Ltd.
Brimscombe Port Business Park
Brimscombe, Stroud, Glos.
GL5 2QF
Tel. +44 (0) 1453 73 13 53
Fax +44 (0) 1453 73 13 43

Hong Kong

Bürkert Contromatic
(China/HK) Ltd.
Unit 708, Prosperity Centre
77-81 Container Port Road
Kwai Chung N.T.

Hong Kong
Tel +852 248 012 02
Fax +852 241 819 45

Italy

Bürkert Contromatic Italiana S.p.A.
Centro Direzionale 'Colombiolo'
Via Roma 74
I-20060 Cassina De' Pecchi (MI)
Tel +39 02 959 071
Fax +39 02 959 07 251

Japan

Bürkert Contromatic Ltd.
3-39-8 Shoan
Suginami-ku
Tokyo 167-0054
Tel +81 (0) 3 3247 3411
Fax +81 (0) 3 3247 3472

Korea

Bürkert Contromatic Korea Co. Ltd.
4-10 Yangjae-Dong
Seocho-Ku
Seoul 137-130
Tel. +82 (0) 2 346 255 92
Fax +82 (0) 2 346 255 94

SERVICE

Malaysia

Bürkert Malaysia Sdn. Bhd.
N° 22 Lorong Helang 2
11700, Sungai Dua
Penang
Tel. +60 (0) 4 657 64 49
Fax +60 (0) 4 657 21 06

Netherlands

Bürkert Contromatic BV
Computerweg 9
NL-3606 AV Maarssen
Tel. +31 (0) 346 58 10 10
Fax +31 (0) 346 56 37 17

New Zealand

Burkert Contromatic Ltd.
Unit 5, 23 Hannigan drive
Mt Wellington
Auckland
Tel +64 (0) 9 570 25 39
Fax +64 (0) 9 570 25 73

Norway

Bürkert Contromatic A/S
Hvamstubben 17
Box 243
N-2026 Skjetten
Tel +47 63 84 44 10
Fax +47 63 84 44 55

Philippines

Bürkert Contromatic Inc.
8467, West Service Rd Km 14
South Superhighway, Sunvalley
Paranaque City, Metro Manila
Tel +63 (0) 2 776 43 84
Fax +63 (0) 2 776 43 82

Poland

Bürkert Contromatic Sp.z.o.o.
Bernardynska street
PL-02-904
Warszawa
Tel +48 (0) 22 840 60 10
Fax +48 (0) 22 840 60 11

Singapore

Burkert Contromatic Singapore Pte.Ltd.
No.11 Playfair Road
Singapore 367986
Tel +65 383 26 12
Fax +65 383 26 11

Spain

Bürkert Contromatic Española S.A.
Avda. Barcelona, 40
E-08970 Sant Joan Despi,
Barcelona
Tel +34 93 477 79 80
Fax +34 93 477 79 81

South Africa

Burkert Contromatic Pty.Ltd.
P.O.Box 26260, East Rand 1462
Republic of South Africa
Tel +27 (0) 11 397 2900
Fax +27 (0) 11 397 4428

Sweden

Bürkert Contromatic AB
Skeppsbron 13 B
S-21120 Malmö
Tel +46 (0) 40 664 51 00
Fax +46 (0) 40 664 51 01

Switzerland

Bürkert Contromatic AB
Havsörnstorget 21
Box 1002
S-12349 Farsta
Tel +46 (0) 40 664 51 00
Fax +46 (0) 8 724 60 22

Switzerland

Bürkert-Contromatic AG Schweiz
Bösch 71
CH-6331 Hünenberg / ZG
Tel +41 (0) 41 785 66 66
Fax +41 (0) 41 785 66 33

Taiwan

Bürkert Contromatic Taiwan Ltd.
3F No. 475 Kuang-Fu South Road
R.O.C - Taipei City
Tel +886 (0) 2 275 831 99
Fax +886 (0) 2 275 824 99

Turkey

Bürkert Contromatik
Akiskan Kontrol Sistemleri Ticaret
A.S
1203/8 Sok. No. 2-E
Yenisehir
Izmir
Tel +90 (0) 232 459 53 95
Fax +90 (0) 232 459 76 94

Tzechia

Bürkert Contromatic Spol.s.r.o
Prosenice c. 180
CZ - 751 21 Prosenice
Tel +42 0641 226 180
Fax +42 0641 226 181

USA/West/Main office

Burkert Contromatic Corp.
2602 McGraw Avenue
Irvine, CA 92614, USA
Tel. +1 949 223 31 00
Fax +1 949 223 31 98

USA/South

Burkert Contromatic Corp.
6724 Alexander Road
Charlotte, North Carolina, 28270
Tel. +1 704 367 11 73
Fax +1 704 367 11 74

USA/North-East

Burkert Contromatic Corp.
7173 Thermal Road
Charlotte, North Carolina, 28211
Tel. +1 704 386 21 41
Fax +1 704 366 24 28

USA/West

Burkert Contromatic Corp.
4449 East Bradford
Orange, CA 92867
Tel. +1 714 637 26 39
Fax +1 714 637 21 62

USA/Mid-West

Burkert Contromatic Corp.
726 Evergreen Street North
Royalton, MN 56373
Tel. +1 320 584 58 47
Fax +1 320 584 58 71