All wiring connections to F9.50 are made via removable terminals. Flow sensor terminals are orange, all other terminals are green.

**General recommendation**
- Always ensure the power supply is switched off before working on the device.
- Terminals accept 26 to 12 AWG (0.08 to 2.5 mm²)
- Strip around 10 mm (0.4") of insulation from the wire tips and tin bare ends to avoid fraying.
- Ferrules are suggested when connecting more than one wire to a single terminal.
- Remove the upper part of the terminals for an easy cabling.
- Insert wire tip or ferrule completely into the terminal and fix with the screw until finger tight.

**Compact or Wall Installation**
Use electrical cables with the proper external diameter for the liquid tight connector:
- PG11: external diameter between 2-7 mm (0.079-0.276")
- PG13,5: external diameter between 5-12 mm (0.197-0.472")

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**Rear Terminal View**

```plaintext
<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Power supply</td>
</tr>
<tr>
<td>B</td>
<td>Sensor</td>
</tr>
<tr>
<td>C</td>
<td>Open collector output</td>
</tr>
<tr>
<td>D</td>
<td>OUT 1 RELAY</td>
</tr>
<tr>
<td>E</td>
<td>OUT 2 RELAY</td>
</tr>
<tr>
<td>F</td>
<td>Remote control</td>
</tr>
</tbody>
</table>
```

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**Page dimensions:** 595.0x842.0
Wiring Diagrams

Power / Loop Wiring Diagram

Stand-alone application, no current loop used

Connection to a PLC with built-in power supply (3 wire connection)

Connection to a PLC / Instrument with ONE separate power supply

Connection to a PLC / Instrument with TWO separate power supplies
Wiring Diagrams

Sensor Wiring Diagram

F3.00.H IP68 or F3.01.H (compact version) or ULFXX.H flow sensor connection

- Maximum cable length is 300 m (990 ft).
- Do not route sensor cable together with AC power wiring: electromagnetic noise may interfere with sensor signal.

OUT1 – Batch Relay Wiring Diagram

Refer to section 5. Functions for details about SIMPLE and ADVANCED use options.

- Max voltage rating: 3A @ 30 VDC, 3A @ 250 VAC resistive load.
- To reduce the possibility of noise interference, do not route signal cables together with AC power cable.
Remote Control Wiring Diagram

Rear START, STOP and RESUME terminals are use for remote batch control using one of next methods:

- Mechanical switch contact (like in the drawing)
- End of Batch pulse from a second F9.50 (refer to sec. 4.4.7.)
- End of Batch contact closure (OUT2 relay) from a second F9.50 (refer to sec. 4.4.5.C.)

OUT2 – Option Relay Wiring Diagram

A. Two Stage Shutdown Option

Available only in ADVANCED Use Mode (refer to section 5.2.2.1. Two Stage Shutdown for details).

- Max voltage rating: 3A @ 30 VDC, 3A @ 250 VAC resistive load.
- To reduce the possibility of noise interference, do not route signal cables together with AC power cable.
B. NO Signal Alarm OR Overrun Alarm Option

No Signal Alarm Option is available in both SIMPLE and ADVANCED Use mode. Overrun alarm Option is available only in ADVANCED Use mode. Refer to sections 5.2.2.2. Overrun Alarm and 5.1.2. OUT2 Option Relay: NO Signal Alarm or 5.2.2.3. NO Signal Alarm for details.

- Max voltage rating: 3A @ 30 VDC, 3A @ 250 VAC resistive load.
- To reduce the possibility of noise interference, do not route signal cables together with AC power cable.

C. End of Batch Pulse Option

Available only in ADVANCED Use Mode (refer to section 5.2.2.4. End of Batch Pulse Output for details).

Typical application: daisy chain of two F9.50 for a second batching stage.

Current Loop Wiring Diagram

A. Batch Completion Option

Available in both SIMPLE and ADVANCED Use Mode (refer to section 5.1.4 Current Output: Batch Completion for details).

Refer to Power / Loop Wiring Diagram to choose the connection suitable for your application.
- Max loop impedance: 150Ω @ 12 VDC, 330Ω @ 18 VDC, 600Ω @ 24 VDC
B. Valve Control Option

Available only in ADVANCED Use Mode (refer to section 5.2.4.2. Valve Control for details).

Connection to a valve with ONE power supply

Connection to a valve with TWO separate power supplies

These connections are compatible with any actuated valve (electric or pneumatic) equipped with electronic or electro-pneumatic positioner.
Open Collector Wiring Diagram

The OPT output has no associated functions in SIMPLE Use mode while it can be set as Start Batch or End Batch Pulse in ADVANCED Use mode (refer to section 5.2.3. OPT Open Collector Output for details).

Connection to a PLC Open Collector Input

Connection to an External Counter

Connection to a second F9.50 Batch Controller

Typical application: daisy chain of two F9.50 for a second batching stage.