This section considers the different valve options, illustrating the multiple variants of the available electrical connections. The electrical connections have to be wired according to the selected valve code.

### 2.1 Main Connector

1. **Removes main connector cap P2**
2. **Select main connector according to valve code and proceed with wirings operations**

### 3 Fieldbus Connectors

1. **Recommended LSF valve connectors**
2. **Recommended LSF valve connectors**
3. **Connect the valve to the system**

**NOTE:** The use of above metallic connectors is strongly recommended in order to fulfill EMC requirements.

### 4.1 Technical Data

- **ZM-1P - 7 pin MAN CONNECTOR**
- **ZM-1P - 12 pin MAN CONNECTOR**

### 5.2 Quickstart Full - for valves with fieldbus

- **E-SW-FIELDBUS**
- **E-SW-BASIC**
- **E-SW-FIELDBUS/PQ**

**NOTE:** Contact us for further information.

### Hydraulics

- **Main connectors**
- **Fastening bolts**
- **Wrenches**

**Attention:**

- **Wiring ordering:** Fieldbus connectors must be ordered separately.
- **Software activation:** The software has to be activated via web www.atos.com.

### Programming Software

- **E-SW-***
- **Programming software**
- **RZMO-AES**
- **RZGO-AES**

**Attention:** The software remains active for 10 days from the installation date and then it stops until the user inputs the Activation Code.

### Technical Data

- **ZM-4PM/E**
- **EH**
- **ZM-5PM/5PF - 5 pin**
- **ZM-5PM/5PF - 4 pin**
- **ZM-5PM/5PF - 4 pin**

**NOTE:** The use of above metallic connectors is strongly recommended in order to fulfill EMC requirements.
**ELECTRICAL WIRING EXAMPLES**

**MAIN CONNECTOR - VOLTAGE**

<table>
<thead>
<tr>
<th>Reference input - Differential mode</th>
<th>Reference input - Common mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 0</td>
<td>C1 0</td>
</tr>
<tr>
<td>E 5</td>
<td>E 5</td>
</tr>
<tr>
<td>H 0</td>
<td>H 0</td>
</tr>
<tr>
<td>K 0</td>
<td>K 0</td>
</tr>
<tr>
<td>L 0</td>
<td>L 0</td>
</tr>
<tr>
<td>M 0</td>
<td>M 0</td>
</tr>
</tbody>
</table>

**MAIN CONNECTOR - CURRENT**

<table>
<thead>
<tr>
<th>Reference input - Differential mode</th>
<th>Reference input - Common mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 0</td>
<td>C1 0</td>
</tr>
<tr>
<td>E 5</td>
<td>E 5</td>
</tr>
<tr>
<td>H 0</td>
<td>H 0</td>
</tr>
<tr>
<td>K 0</td>
<td>K 0</td>
</tr>
<tr>
<td>L 0</td>
<td>L 0</td>
</tr>
<tr>
<td>M 0</td>
<td>M 0</td>
</tr>
</tbody>
</table>

**MAIN CONNECTOR - MONITORS VOLTAGE ONLY**

<table>
<thead>
<tr>
<th>Reference input - Differential mode</th>
<th>Reference input - Common mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 0</td>
<td>C1 0</td>
</tr>
<tr>
<td>E 5</td>
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</tr>
<tr>
<td>H 0</td>
<td>H 0</td>
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<tr>
<td>K 0</td>
<td>K 0</td>
</tr>
<tr>
<td>L 0</td>
<td>L 0</td>
</tr>
<tr>
<td>M 0</td>
<td>M 0</td>
</tr>
</tbody>
</table>

---

**4.1 CONNECTION**

1. In order to access valve parameterization:
   - Install E-SW software on PC.
   - Insert main connector to the valve and power on with 24VDC.
2. Remove USB plastic protection cap P4 and connect valve to the PC as shown below.
3. Launch the software using E-SW icon.
   - software does NOT detect valid connection communication is not established, please follow wizard procedure.
   - software detects valid connection communication automatically established - valve is ON-LINE.
4. Press buttons according the below sequence:
   - ON-LINE - Recommended Wizard procedure for standard connection
   - CONNECT TO BC, BP, BH, EW, EI, EP
5. Communication established, valve is ON-LINE and it is possible change parameters.
   - Note: please also refer to the following parameter settings:
     - step 4.2 to change the network setup.
     - step 4.3 to change the reference signals setup

---

**4.2 FIELDBUS - Network Management**

Node, Station Alias, IP Address, Baseboard, etc. can be set through:
1. Machine central unit (master) - please refer to E-MAIN-S-77 Fieldbus protocol programming manual
2. E-SW software
   - switch to Level 2 - Advanced and browse to Network Management - Configuration to change below default settings:
   - BC CANopen
     - Configuration file: EDS
   - BF PROFIBUS DP
     - Configuration file: GSD
     - Default: Teleco 3
   - EH EtherCAT
     - Configuration file: XML
     - Station Alias is assigned automatically by fieldbus master.

**4.3 SOFTWARE**

**Remark:** proportional valves with integral electronics are factory preset with default parameters, only few parameter modifications are mandatory for setup the network parameters and the source of reference signals.

Valve programming can be performed through E-SW software or via fieldbus.

---

**4.4 STORE**

Parameters modifications will be stored in driver permanent memory.

**WARNING:** During valve or fieldbus parameter setting operations, the drive automatically shuts down the actual power supply for a short time. Do not perform any storing commands while the system is working.

---

**4.5 BACK UP**

Parameters modifications will be saved into PC memory.

**4.6 TROUBLESHOOTING**

Valve vibration or noise:
- presence of air in the solenoid; perform air bleeding procedure - see STEP 3
- other error to low; increase value of the frequency - please refer to E-MAIN-R-AES operating manual

The valve does not follow the reference signal:
- valve is preset off, verify presence of 24 VDC power supply
- valve is disabled, verify presence of 24 VDC on enable pin; - (for 02 and 01 options)
- the mechanical pressure limiter interacts with the regulation (AGMDCD and AGMDCZD with IP option) check the pressure limiter setting.
- spool in locking mode (LSD, SLD) - contact Atos service center
- wrong pitch/drain configuration (AGMDCD) - check if the pitch/drain configuration of the valve corresponds to the effective system layout.

Software parameters modifications are lost when valve is switched off:
- parameter store operation was not performed, check store procedure - see STEP 4, section 4.4
- software parameters modifications have no effect on the valve:
  - valve is OFF LINE, check connection procedure - see STEP 4, section 4.1

After the modifications of the software parameters the valve does not work properly:
- reset valve factory parameters using Restore Parameter button (located in Drive - Memory Store window):
  - during restore, the current to the driver will be temporarily switched to off!
- factory parameters will be applied at next driver restart or after power-off on sequence!