**MECHANICAL**

In case of first commissioning, before the valve installation the whole system must be correctly flushed to grant the required cleanliness level. During the flushing operation use on-off or by-pass valves in place of the proportional valve.

- Remove protection pads placed on the valve bottom face only immediately after installation (do not remove connectors caps)
- Check the presence and correct positioning of the seals on valve ports
- Verify that valve mounting surface is clean and free from damages or burrs
- Verify the correct valve orientation according to the pattern of the relevant mounting interface
- Lock the fastening bolts respecting below sequence and tightening torque according to valve model.

**ELECTRICAL**

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

**MAN CONNECTOR**

1. Remove main connector cap P2
2. Select main connector according to valve code and proceed with settings operations
3. Connect the valve to the system

**FIELDBUS CONNECTORS**

1. Remove fieldbus connectors cap P3
2. Select fieldbus connectors according to valve code and proceed with settings operations

**NOTE:**

- The use of above metallic connectors is strongly recommended in order to fulfill EMC requirements
- WARNING: A safety fuse is recommended in series to drive power supply - 2,5 A time lag fuse

**REFERENCES**

- PODERLINK
- USB
- Bluetooth

**NOTICE**

- The software remains active for 10 days from the installation date and then it stops until the user inputs the Activation Code
- The software is designed for Windows based operative systems - Windows XP SP3 or later

**DOWNLOAD AREA**

- SOFTWARE
  - E-SW-BASIC
  - E-SW-FIELDBUS
  - E-SW-PG
  - E-SW-FIELDBUS supports also valves without fieldbus communication; E-SW-PG supports also valves without P/G control

**PROGRAMMING SOFTWARE**

The software is available in different versions according to the driver’s options:

- E-SW-BASIC
- E-SW-FIELDBUS
- E-SW-PG
- E-SW-FIELDBUS supports also valves without fieldbus communication; E-SW-PG supports also valves without P/G control

**NOTE:**

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**CONTACT US**

Atos spa - Italy - 21018 Sesto Calende

www.atos.com | info@atos.com

**PROPORTIONAL PRESSURE RELIEF AND REDUCING VALVES - OPEN LOOP**

**INSTALLATION TOOLS ACCORDING TO VALVE MODEL - not included**

- Fastening bolts
- Screws
- Main connectors
- Fieldbus connectors
- Cable Isolator
- Electrical Adapter

**PROGRAMMING TOOLS - not included**

- DVD software
- USB connection KIT
- DRK Bluetooth connection KIT

**STEP 1**

**MECHANICAL**

1. Step 1
2. Step 2
3. Step 3
4. Step 4

**PROGRAMMING**

1. Step 1
2. Step 2
3. Step 3
4. Step 4

**INSTALLATION**

1. Step 1
2. Step 2
3. Step 3
4. Step 4

**HYDRAULICS**

1. Step 1
2. Step 2
3. Step 3
4. Step 4

**SOFTWARE**

1. Step 1
2. Step 2
3. Step 3
4. Step 4

**DOWNLOAD AREA**

- E-SW-BASIC
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**RELATED DOCUMENTATION**

- www.atos.com - section Catalog on-line
- 05080 Operating and maintenance information - tech. table
- 05078 ZRZQ-010 pressure relief valve - tech. table
- 05095 ZRZG-010 pressure reducing valve - direct - tech. table
- 05086 ZRQD-010 high relief, direct - tech. table
- 05150 AGMD-010 high relief, direct - tech. table
- 05160 AGRCZ-010 high relief, direct - tech. table
- 05180 Mounting surface - tech. table
- 05000 Electric and electronic connectors - tech. table

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**OVERVIEW**

**VALVE MODEL**

- ZRZQ-010
- ZRQG-010
- AGMD-010
- AGRCZ-010

**DRIVER MODEL**

- E-RJ-010

**STEP 1**

**Fastening bolts**

- 5 pin metallic
- 5 pin metallic
- 7 pin metallic
- 12 pin metallic

**STEP 4**

**Electrical**

- 2 pin contact P2
- 12 pin contact P3

**WARNING:**

- Connect the valve to the system

**NOTE:**

- Use fieldbus connectors P3 preferred
- 2,5 A fuse recommended in series to drive power supply

**FIELDBUS CONNECTORS**

- BP, SF
- ZM-7P - 7 pin
- ZM-12P - 12 pin

**WARNING:**

- Connect the valve to the fieldbus network. For information about T connectors and fieldbus terminators see GS500

**PRODUCTS**

- M12 Coding A
- Cable diameter 6 - 8 mm
- M12 Coding B
- Cable diameter 6 - 8 mm
- M12 Coding C
- Cable diameter 6 - 8 mm
- M12 Coding D
- Cable diameter 6 - 8 mm
- ZM-5PM - 5 pin
- ZM-5PM/BP - 5 pin
- ZM-4PM/E - 4 pin
- ZM-4PM/BC - 4 pin

**NOTE:**

- Use of above metallic connectors is strongly recommended in order to fulfill EMC requirements

**WARRANTY**

- 1 year service included;
- Service and DVD not included

**PRODUCT CODE**

- 5781-08-10-0-00
- 5781-08-10-0-00

**CONTACT**

- 05080 Operating and maintenance information - tech. table
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### 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:

   ![Diagram of connection](image)

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, see 5.

4. Press buttons according the below sequence:
   - ON-LINE - Recommended
   - Wizard procedure for standard connection
   - Connect to SC. B. E. SW. B. 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 to 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, Baseband, etc. can be managed through:
  - Machine central unit (master) – please refer to E-EAS-5-77 instruction with protocol programming manual
  - E-SW software:
    - switch to Level 2 - Advanced and browse to Network Management - Configuration to change below default settings:
      - BC CANopen
        - Configuration 9n EDS
      - BP PROBUS DP
        - Configuration 9n BSO
        - Default: Telegram 3
      - EH EtherCAT
        - Configuration 9n XML

- Station alias is assigned automatically by fieldbus master
- press Fieldbus Parameters - Store User button to save new setting into the driver (see 4.4)
- network configuration settings will be applied at next driver power-on or pressing the RESTART button.
- Note: configuration files are available in E-SW DVD or at Aatos Download Area - www.atos.com

### 4.3 SOFTWARE

- REMARK: proportional valves with integral electronics are factory preset with default parameters, only free programming operations are mandatory for setup the network parameters and the source of reference signals.
- Valve parameterization can be performed through E-SW software or via fieldbus

### 4.4 STORE

- Parameters modifications will be stored into driver permanent memory
- WARNING: During valve or fieldbus parameter tuning operations, the driver automatically shut down the solenoid power supply for a short time. Do not perform any storing commands while the system is working.
- Press Memory Store button to access Driver - Memory Store window

### 4.5 BACK UP

- Parameters modifications will be saved into PC memory
- Press Save button to access Computer SW Archive - Setting Files page

### TROUBLESHOOTING

- Valve vibration or noise:
  - Presence of air in the solenoid, perform air bleeding procedure – see STEP 3
  - Increase flow rate by increasing valve operation frequency
- VC/EP operation:
  - press Restore Factory button, located in ‘Driver - Memory Store’ window:
    - during restore, the current to the solenoid(s) will be temporarily switched to off!
    - after restore valve factory parameters will be applied at next driver restart or after power off-on sequence!
- Valve is OFF LINE, check connection procedure – see STEP 4, section 4.1
- Valve is OFF LINE, check connection procedure – see STEP 4, section 4.1
- Valve is OFF LINE, check connection procedure – see STEP 4, section 4.1

### REMARK

- once removed the USB cable E-C-S-USB/M12, screw the plastic protection cap P4, and apply the correct tightening torque in order to preserve valve’s IP protection characteristics
- Bluetooth adapter available!
- For more information please refer to STARTUP-BTH guide

### REMARK:

- If connection was not performed, check connection procedure – see STEP 4, section 4.1
- Press Restore Factory button to restore valve factory parameters using ‘Restore Factory’ button, located in ‘Driver - Memory Store’ window:
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### STEP 4 HYDRAULICS

### 4.1 CONNECTION

**Air bleeding:**
- Release 2 or 3 turns the air bleed screw
- Close the air bleed screw

**Mechanical pressure limiter setting:**
- Only AGMZO and AGRCZO with /P option
- For safety reasons the factory setting of the mechanical pressure limiter is fully unloaded (min pressure).
- The first commanding must be set at a value slightly higher than the max pressure regulated with the proportional control, proceeding as follow:
  - apply the max reference input signal to the valve’s driver.
  - turn clockwise the adjustment screw (1) until the system pressure will increase up to a stable value corresponding to the pressure set point at max reference input signal
  - turn clockwise the adjustment screw (2) of additional 1 or 2 turns to ensure that the mechanical pressure limiter remains closed during the proportional valve working, then tighten the locking nut (3)

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      - EH EtherCAT
        - Configuration 9n XML
  - Station alias is assigned automatically by fieldbus master
  - press Fieldbus Parameters - Store User button to save new setting into the driver (see 4.4)
  - network configuration settings will be applied at next driver power-on or pressing the RESTART button.
  - Note: configuration files are available in E-SW DVD or at Aatos Download Area - www.atos.com

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