QUICKSTART BASIC

QB200-6 - 04/22

for digital proportionals without transducer - analog reference signal

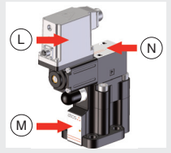
PROPORTIONAL PRESSURE RELIEF AND REDUCING VALVES

Valve model:
RZMO-AEB RZGO-AEB AGMZO-AEB AGRCZO-AEB

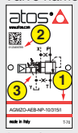
Driver model:
E-RI-AEB

IDENTIFICATION

Valve identification plates and label

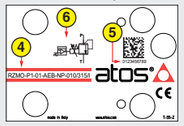


Valve name plate : **M**



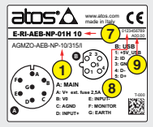
1 : valve code
2 : valve matrix code
3 : valve hydraulic symbol

Pilot valve name plate : **N**



4 : pilot valve code
5 : pilot valve matrix code
6 : pilot hydraulic symbol

Driver label : **L**



7 : driver code
8 : driver serial number
9 : factory firmware version

INSTALLATION TOOLS ACCORDING TO VALVE MODEL- not included

Fastening bolts	Wrenches		Screwdriver	Main connectors	
				std, /Q	**/Z**
					
socket head screws	for fastening bolts	mechanical pilot relief	for air bleeding	7 pin - metallic	12 pin - metallic
see STEP 1 and STEP 3				see STEP 2	

PROGRAMMING TOOLS - not included

Software	USB connection KIT		OR	Bluetooth connection KIT	
	Cable	Isolator		Cable	Adapter
					
E-SW-BASIC free basic software download from **MyAtos** at **www.atos.com**	**E-C-SB-USB/M12**	**E-A-SB-USB/OPT**		**E-C-SB-M12/BTH**	**E-A-SB-USB/BTH**

PROGRAMMING SOFTWARE

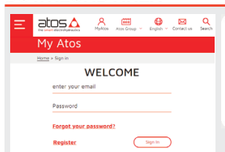
The software is available in different versions according to the driver's options:

E-SW-BASIC	supports	**NP** (USB)	**IL** (IO-Link)	**PS** (Serial)	**IR** (Infrared)
E-SW-FIELDBUS	supports	**BC** (CANopen) **EW** (POWERLINK)	**BP** (PROFIBUS DP) **EI** (EtherNet/IP)	**EH** (EtherCAT) **EP** (PROFINET RT/IRT)	
E-SW-*/PQ	supports	valves with **SP**, **SF**, **SL** alternated P/Q control			

E-SW-FIELDBUS supports also valves without fieldbus communication; E-SW-*/PQ supports also valves without P/Q control

REMARK Atos software is designed for Windows based operative systems - Windows XP SP3 or later

DOWNLOAD AREA



Download area
electronics

Perform the registration at **www.atos.com/en-it/login** by filling the form. In MyAtos area, perform login with personal username and password and then press the **Download area electronics** button

Free version of E-SW-BASIC can be downloaded and used by the "FREE Activation Code"

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

RELATED DOCUMENTATION - www.atos.com - section Catalog on-line

FS900	Operating and maintenance information - tech. table	**STARTUP E-SW-BASIC**	Software startup guide
FS007	RZMO-010 pressure relief, direct - tech. table	**STARTUP BLUETOOTH**	Bluetooth adpter startup guide
FS015	RZGO-010 pressure reducing, direct - tech. table	**E-MAN-RI-AEB**	AEB - driver operating manual
FS035	AGMZO pressure relief, two stage - tech. table		
FS050	AGRCZO pressure reducing, two stage - tech. table		
FS065	RZMO-030 pressure relief, piloted - tech. table		
FS070	RZGO-033 pressure reducing, piloted - tech. table		
P005	Mounting surfaces - tech. table		
GS500	Programming tools - tech. table		
K800	Electric and electronic connectors - tech. table		

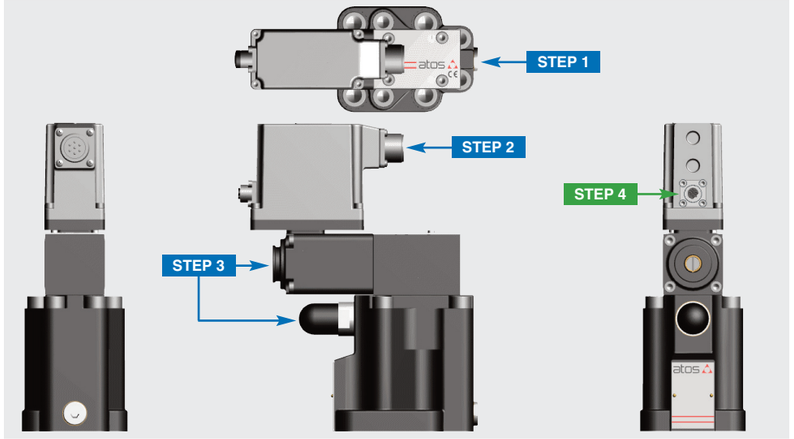
ATTENTION !

The purpose of this quickstart guide is show a logical sequence of basic operations. This guide does not cover all details or variants of Atos valves. All operations described in this document should be performed only by qualified personnel.
Operations and images could be subject to change without notice. For further information please refer to related documentation.

CONTACT US

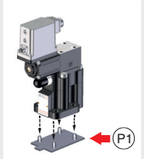
Atos spa - Italy - 21018 Sesto Calende www.atos.com support@atos.com

PRODUCTS OVERVIEW



INSTALLATION			PROGRAMMING
STEP 1	STEP 2	STEP 3	STEP 4
MECHANICAL	ELECTRICAL	HYDRAULICS	SOFTWARE

STEP 1 MECHANICAL



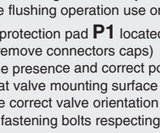
In case of first commissioning, before the valve installation the whole system must be correctly flushed to grant the required cleanliness level
During the flushing operation use on-off or by-pass valves in place of the proportional valve

- remove protection pad **P1** located on the valve bottom face only immediately before 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

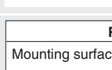
RZMO-AEB / RZGO-AEB

Mounting surface layout
4401-03-02-0-05
(RZMO without A and B ports)
Valve size ISO 4401: **06**

RZMO **n°2 OR 108**
RZGO **n°4 OR 108**



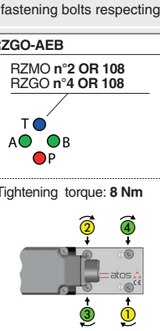
Fastening bolts socket head screws



n°4 M5x50 class:12.9

wrench **4 mm**

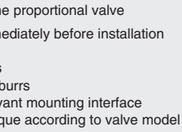
Tightening torque: **8 Nm**



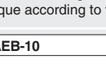
AGMZO-AEB-10

Mounting surface layout
6264-06-09-1-97
Valve size ISO 6264: **10**

n°1 OR 109/70
n°2 OR 123



Fastening bolts socket head screws



n°4 M12x35 class:12.9

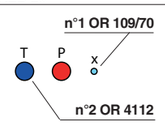
wrench **10 mm**

Tightening torque: **125 Nm**

AGMZO-AEB-20

Mounting surface layout
6264-08-13-1-97
Valve size ISO 6264: **20**

n°1 OR 109/70
n°2 OR 4112

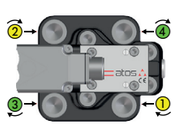


Fastening bolts socket head screws

n°4 M16x50 class:12.9

wrench **14 mm**

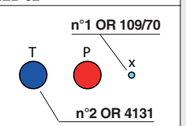
Tightening torque: **300 Nm**



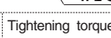
AGMZO-AEB-32

Mounting surface layout
6264-10-17-1-97
Valve size ISO 6264: **32**

n°1 OR 109/70
n°2 OR 4131



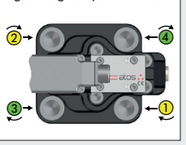
Fastening bolts socket head screws



n°4 M20x60 class:12.9

wrench **17 mm**

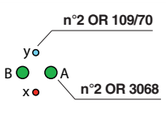
Tightening torque: **600 Nm**



AGRCZO-AEB-10

Mounting surface layout
5781-06-07-0-00
Valve size ISO 5781: **10**

n°2 OR 109/70
n°2 OR 3068

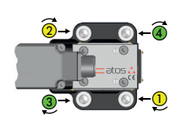


Fastening bolts socket head screws

n°4 M10x45 class:12.9

wrench **8 mm**

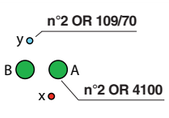
Tightening torque: **70 Nm**



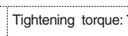
AGRCZO-AEB-20

Mounting surface layout
5781-08-10-0-00
Valve size ISO 5781: **20**

n°2 OR 109/70
n°2 OR 4100



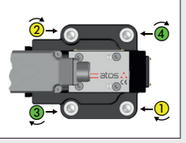
Fastening bolts socket head screws



n°4 M10x45 class:12.9

wrench **8 mm**

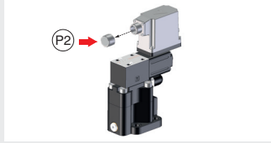
Tightening torque: **70 Nm**



STEP 2 ELECTRICAL

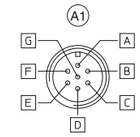
This section considers the different valves options, illustrating the multiple variants of the available electrical connections.
The electrical connections have to be wired according to the selected valve code

1 Remove main connector cap **P2**

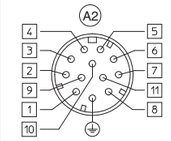


WARNING: remove power supply before any electrical or wiring operations

2 Select main connector according to valve code and proceed with wirings operations



Recommended LiYCY shielded cables:
7 x 0,75 mm² max 20 m
7 x 1 mm² max 40 m



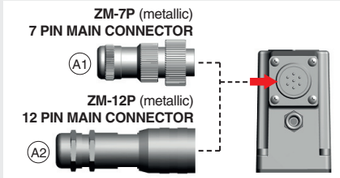
Recommended LiYCY shielded cable:
12 x 0,75 mm² max 20 m

Standard		
A	**V+**	(power supply 24Vdc)
B	**V0**	(power supply 0Vdc)
C	**AGND**	
D	**INPUT+**	(0 ÷ 10Vdc / 4 ÷ 20mA)
E	**INPUT-**	
F	**MONITOR**	(0 ÷ 5Vdc 1V=1A)
G	**EARTH**	

/Q option		
A	**V+**	(power supply 24Vdc)
B	**V0**	(power supply 0Vdc)
C	**ENABLE**	(input 24Vdc)
D	**INPUT+**	(0 ÷ 10Vdc / 4 ÷ 20mA)
E	**INPUT-**	
F	**MONITOR**	(0 ÷ 5Vdc 1V=1A)
G	**EARTH**	

/Z option		
1	**V+**	(power supply 24Vdc)
2	**V0**	(power supply 0Vdc)
3	**ENABLE**	(input 24Vdc)
4	**INPUT+**	(0 ÷ 10Vdc / 4 ÷ 20mA)
5	**INPUT-**	
6	**MONITOR**	(0 ÷ 5Vdc 1V=1A)
7	**NC**	
8	**NC**	
9	**VL+**	(logic power supply 24Vdc)
10	**VL0**	(logic power supply 0Vdc)
11	**FAULT**	(output 24Vdc)
PE	**EARTH**	

3 Connect the valve to the system



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

WARNING: a safety fuse is required in series to driver power supply - 2,5 A time lag fuse

ELECTRICAL WIRING EXAMPLES

MAIN CONNECTOR - VOLTAGE

MAIN CONNECTOR - CURRENT

MAIN CONNECTOR - MONITORS VOLTAGE ONLY

STEP 3 HYDRAULICS

Screwdriver

Air bleeding:
- release 2 or 3 turns the air bleed screw **V**
- cycle the valve at low pressure until the oil leaking from the **V** port is exempted from air bubbles
- lock the air bleed screw **V**

Wrenches

6 mm adjustment screw

11 mm locking nut

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).
At the first commissioning it must be set at a value lightly higher than the max pressure regulated with the proportional control, proceeding as follow:
- apply the max reference input signal to the valve's driver. The system pressure will not increase until the mechanical pressure limiter remains unloaded
- release the locknut ②, 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 ① of additional 1 or 2 turns to ensure that the mechanical pressure limiter remains closed during the proportional valve working, then tighten the locknut ②

Consult tech table **FS900** for general guidelines about component's commissioning

STEP 4 SOFTWARE

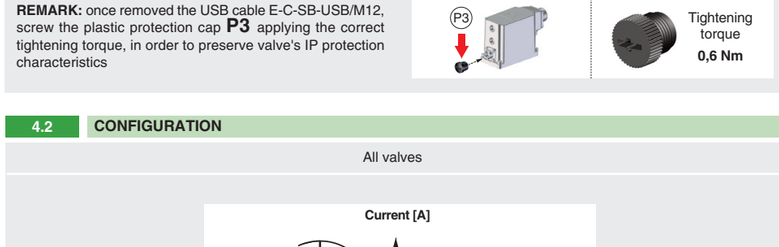
REMARK proportional valves with integral electronics are factory preset with default parameter and ready to use after piping and electrical connections. **Play with parameters is optional, not mandatory!**

PROGRAMMING			PC
4.1	4.2	4.3	4.4
CONNECTION	CONFIGURATION	STORE	BACK UP

4.1 CONNECTION

1 **In order to access valve parameterization:**
- Install E-SW-BASIC software on PC
- Insert main connector to the valve and power on with **24VDC**

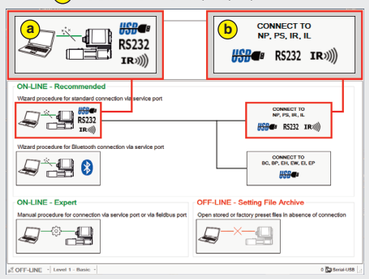
2 Remove USB plastic protection cap **P3** and connect valve to the PC as shown below



WARNING: drivers USB port is not isolated!
The use of USB isolator adapter is highly recommended for PC protection (see **GS500**)

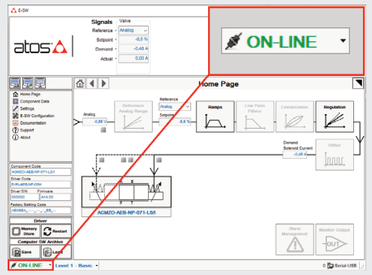
3 Launch the software using E-SW icon:
- **software does NOT detect valid connection**
  communication is not established, please follow wizard procedure **4**
- **software detects valid connection**
  communication automatically established **-** valve is **ON-LINE** see **5**

4 Press buttons according the below sequence:
- (a) : **ON-LINE - Recommended**
  Wizard procedure for standard connection
- (b) : **CONNECT TO NP, PS, IR, IL**



NOTE: Bluetooth adapter available!
For more info please refer to STARTUP BLUETOOTH guide

5 Communication established, valve is **ON-LINE** and it is possible change parameters

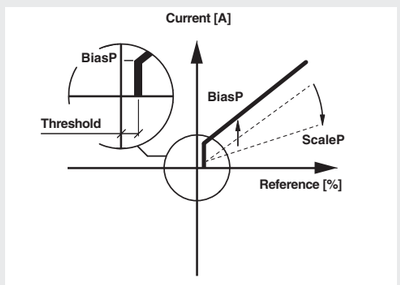


REMARK: once removed the USB cable E-C-SB-USB/M12, screw the plastic protection cap **P3** applying the correct tightening torque, in order to preserve valve's IP protection characteristics

Tightening torque **0,6 Nm**

4.2 CONFIGURATION

All valves



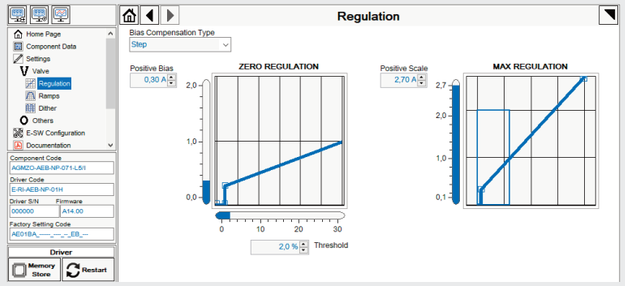
BiasP positive bias
ScaleP positive scale

Threshold = 2%
(200mV or 0,32mA for **/I** option)

BIAS AND SCALE

Bias setting: supply the input signal qual to 0%
- **relief valves:** increase the Bias until the pressure starts to increase, then lightly reduce the Bias just to bring back the pressure lightly over the minimum regulated value
- **reducing valves:** increase the Bias until is reached the minimum desired value of starting pressure

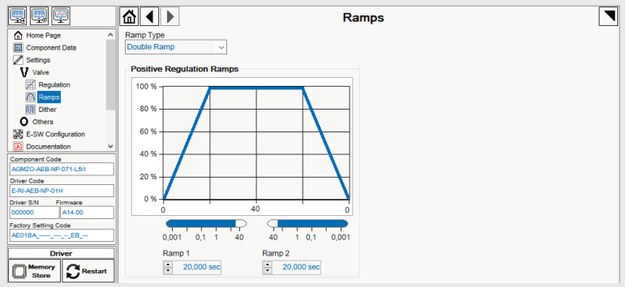
Scale setting: supply the max input signal; adjust the Scale to obtain the max regulated pressure



RAMPS

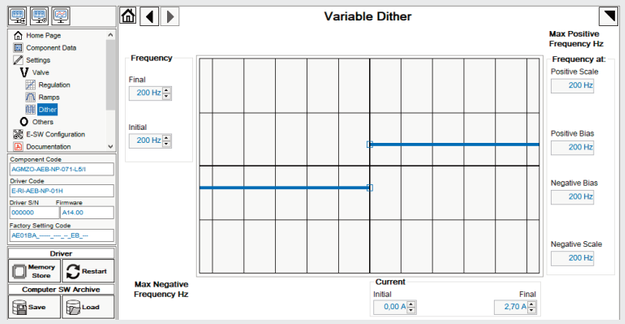
Ramps setting: select the required ramp configuration and adjust the ramp time to optimize the pressure response according to the system characteristics

No Ramp: no ramps selected **Single Ramp**: setup **Ramp 1** **Double Ramp** : setup **Ramp 1** and **2**



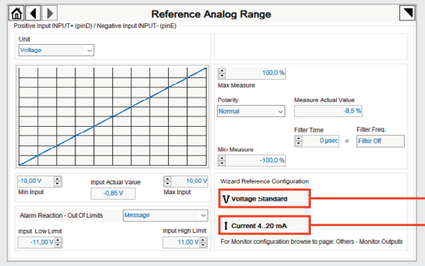
DITHER

Dither setting: factory default 200 Hz
- lower frequencies reduce the hysteresis of the valve, too low values can affect the valve stability
- higher frequencies increase regulation stability, but increase also the hysteresis of the valve



WIZARD REFERENCE - E-SW level 2 functionality

Reference input signal is factory preset according to selected valve code, defaults are 0 ÷ 10 VDC for standard and 4 ÷ 20 mA for /I option.
Input signal can be reconfigured via software selecting between voltage and current, browsing to **Reference Analog Range** page:



press **Voltage Standard** button to automatically set the analog input signal to voltage

V Voltage Standard

press **Current 4..20 mA** button to automatically set the analog input signal to current

I Current 4..20 mA

REMARK: Voltage Standard or **Current 4..20 mA** buttons do not act on Monitor output signal configuration!
For Monitor output signal configuration browse to page **Others - Monitor Outputs**

4.3 STORE

Parameters modifications will be stored into driver permanent memory:

- press **Memory Store** button to access **Driver - Memory Store** window
- press **Store User** button to store **Valve Parameters**

WARNING: During valve parameters storing operations, the driver automatically shuts down the solenoid power supply for a short time. Do not perform any storing commands while the system is working.

4.4 BACK UP

Parameter modifications will be saved into PC memory:

- press **Save** button to access **Computer SW Archive - Setting Files** page, **Setting File Name** pop-up appears
- input a valid name into **Description** field and press **Ok** button

TROUBLESHOOTING

Valve vibration or noise
- presence of air in the solenoid; perform air bleeding procedure – see STEP 3
- dither frequency too low; increase value of the frequency – see STEP 4.2

The valve does not follow the reference signal
- valve is powered off, verify presence of 24 Vdc power supply
- valve is disabled, verify presence of 24 Vdc on enable pin - only for /Q and /Z options
- the mechanical pressure limiter interferes with the regulation (AGMZO and AGRCZO with /P option) – check the pressure limiter setting
- spool sticking (RZMO-030 and RZGO-033) – contact Atos service center
- wrong pilot/drain configuration (AGMZO) – check if the pilot/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 4.3

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 software parameters the valve does not work properly
- restore valve factory parameters using 'Restore Factory' button, located in 'Driver - Memory Store' window:
  - during restore, the current to the solenoid(s) will be temporarily switched to off!
  - factory parameters will be applied at next driver restart or after power off-on sequence!