

DIRECT OPERATED PROPORTIONAL DIRECTIONAL VALVES

Valve model:
DHZE-TID
DKZE-TID
Driver model:
E-RI-TID-N

IDENTIFICATION

Valve identification plates and label

Valve and driver name plate : L

1 : valve code
2 : valve matrix code
3 : hydraulic symbol
4 : driver code
5 : driver serial number
6 : factory firmware version

INSTALLATION TOOLS ACCORDING TO VALVE MODEL- not included

Fastening bolts	Wrenches	Main connector
socket head screws	for fastening bolts	7 pin - metallic
see STEP 1		see STEP 2

PROGRAMMING TOOLS - not included

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

Software	supports	NP (USB)	IL (IO-Link)	PS (Serial)	IR (Infrared)
E-SW-BASIC	supports	NP (USB)	IL (IO-Link)	PS (Serial)	IR (Infrared)
E-SW-FIELDBUS	supports	BC (CANopen)	BP (PROFIBUS DP)	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

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
TFS150 DHZE, DKZE servoproportional - tech. table	STARTUP BLUETOOTH Bluetooth adapter startup guide
P005 Mounting surfaces - tech. table	E-MAN-RI-TID TID - driver operating manual
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

PRODUCTS OVERVIEW

INSTALLATION		PROGRAMMING
STEP 1	STEP 2	STEP 3
MECHANICAL	ELECTRICAL	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

DHZE-TID		DKZE-TID	
Mounting surface layout	n°1 OR 2025 for option /Y	Mounting surface layout	n°1 OR 108 for option /Y
4401-03-02-0-05 4401-03-03-0-05 (for /Y without X port) Valve size ISO 4401: 06		4401-05-04-0-05 4401-05-05-0-05 (for /Y without X port) Valve size ISO 4401: 10	
Fastening bolts: socket head screws	Tightening torque: 8 Nm	Fastening bolts: socket head screws	Tightening torque: 15 Nm

STEP 2 ELECTRICAL

To proceed with main connector wiring, perform the steps below

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

WARNING: remove power supply before any electrical or wiring operations

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

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

Pin	Signal
A	V+ (power supply 24Vdc)
B	V0 (power supply 0Vdc)
C	AGND
D	Q_INPUT+ (±10Vdc / 4 ± 20mA)
E	INPUT- (±10Vdc / 4 ± 20mA)
F	Q_MONITOR (±10Vdc / 4 ± 20mA)
G	EARTH

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

ELECTRICAL WIRING EXAMPLES

MAIN CONNECTOR - REFERENCE INPUT			MAIN CONNECTOR - MONITOR OUTPUT		
REFERENCE INPUT - DIFFERENTIAL MODE			MONITOR OUTPUT		
cabinet side	main connector pin-out	valve internal circuit	cabinet side	main connector pin-out	valve internal circuit
±10 Vdc Ref. Q ⊕ Ref. Q ⊖	D E	Q_INPUT+ 50K INPUT- 50K	±10 Vdc Mon. Q ⊥ (0 V)	F C	Q_MONITOR AGND / V0
REFERENCE INPUT - COMMON MODE					
cabinet side	main connector pin-out	valve internal circuit			
±10 Vdc Ref. Q ⊥ (0 V)	D E C	Q_INPUT+ 50K INPUT- 50K AGND / V0			

STEP 3 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
3.1	3.2	3.3	3.4
CONNECTION	CONFIGURATION	STORE	BACK UP

3.1 CONNECTION

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

- 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)

- 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

- 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

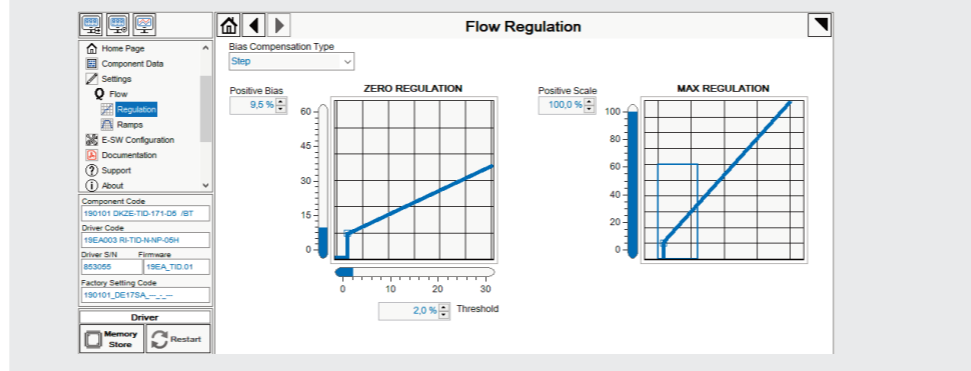
REMARK: once removed the USB cable E-C-SB-USB/M12, screw the plastic protection cap **P3** applying the correct tightening torque, in order to preserve valve's IP protection characteristics

3.2 CONFIGURATION

<p>Single solenoid directional control valve, 2 positions with positive overlapping and flow control valve</p> <p>BiasP positive bias ScaleP positive scale</p> <p>Threshold = 2% (200mV or 0,32mA for I option)</p>	<p>Double solenoid directional control valve, 3 positions with positive overlapping</p> <p>BiasP positive bias ScaleP positive scale BiasN negative bias ScaleN negative scale</p> <p>Threshold = 2% (±200mV or ±0,16mA for I option)</p>	<p>Single or double solenoid directional control valve, 3 positions with zero overlapping</p> <p>ScaleP positive scale ScaleN negative scale Offset</p>
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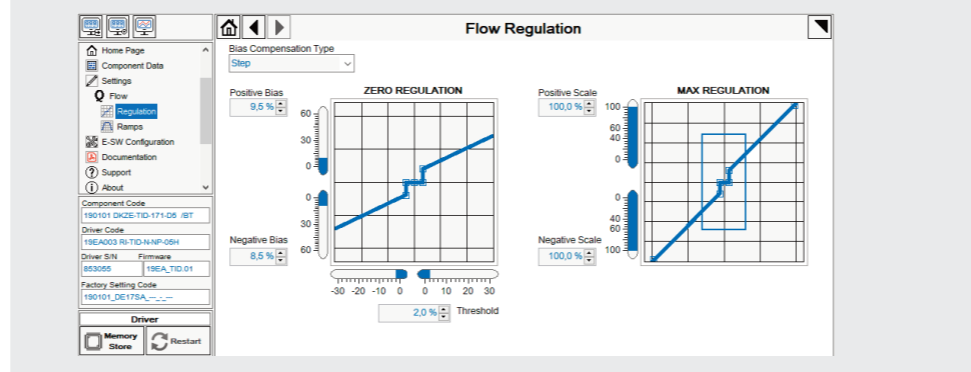
BIAS AND SCALE - 2 POSITION VALVES and FLOW CONTROL VALVES

Bias setting: supply input signal just over the Threshold value; increase the Bias until the actuator is start moving, then lightly reduce the Bias just to stop the actuator
Scale setting: supply the max input signal; adjust the Scale to obtain the max actuator speed



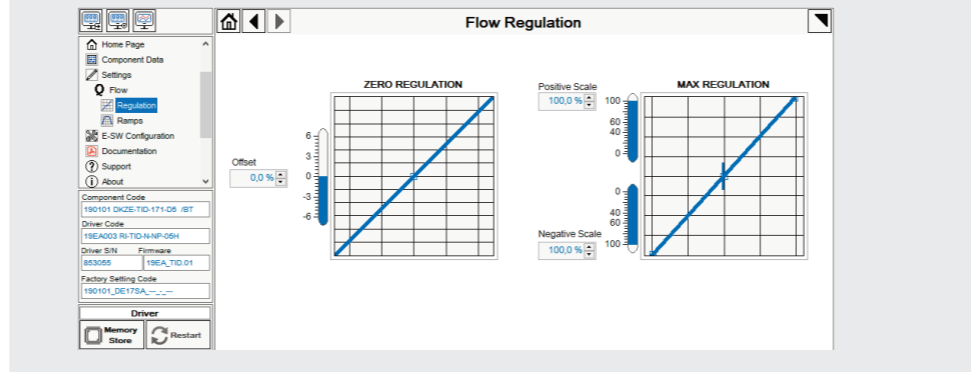
BIAS AND SCALE - 3 POSITION VALVES

Follow the same indications reported for 2 position valves for both valve's solenoids



OFFSET AND SCALE – 3 POSITION VALVES, ZERO OVERLAP

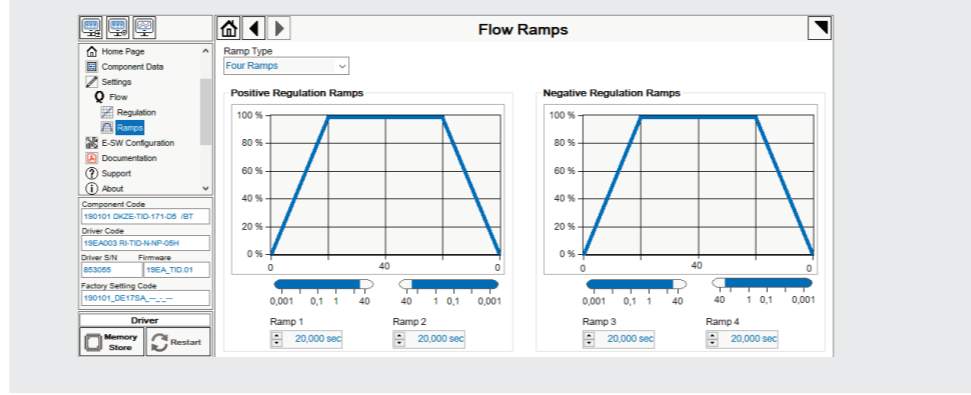
Offset setting: supply the input signal equal to 0%; adjust the Offset until the actuator is stopped
Scale setting: supply the max input signal (positive/negative); adjust the Scale to obtain the max actuator speed in both directions



RAMPS

Ramps setting: select the required ramp configuration and adjust the ramp time to optimize the actuator's acceleration and deceleration

- No Ramp : no ramps selected
- Single Ramp : setup Ramp 1
- Double Ramp : setup Ramp 1 and 2
- Four Ramps : setup Ramp 1, 2, 3 and 4 (only 3 way)



3.3 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.

3.4 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

The valve does not follow the reference signal

- valve is powered off, verify presence of 24 Vdc power supply
- flow/pressure values exceeding the valve's performance limits, verify that hydraulic operating conditions are in compliance with the valve's characteristics
- spool sticking, contact Atos service center

Software parameters modifications are lost when valve is switched off

- parameter store operation was not performed, check store procedure – see STEP 3, section 3.3

Software parameters modifications have no effect on the valve

- valve is OFF LINE, check connection procedure – see STEP 3, section 3.1

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!