Programming Software for digital electronics
Atos PC software, USB adapters, cross cables and terminators

The E-SW / Z-SW programming softwares are
the entry door to the Atos digital technology.
It is supplied in Dvd format and can be easily
installed on a desktop or a notebook computer.
The user friendly graphic software interface
allows to:

- simply access all the functional parameters
  of Atos digital proportional valves and drivers;
- verify the actual working conditions
- identify and quickly solve fault conditions
- adapt the factory preset parameters to the
  application requirements
- store the customized setting into the valve
- archive the customized setting into the PC
- In field firmware update through standard
  serial communication (see section 12)

The graphic interface is organized in pages
related to different specific groups of functions
and parameters.
The software automatically recognizes the con-
nected valve model and adapts the displayed
parameter groups, according to the selected
access level.
The programming program is available for three
different versions according to the driver’s
communication interfacing:

- PS (for Serial)
- BC (for CANopen)
- BP (for PROFIBUS DP)
- EH (for EtherCAT)

Fieldbus communication software (-BC, -BP, -EH)
includes also dedicated manuals and configu-
ration files for user self management of the
Atos electronics (using a fieldbus master).

Features:
- automatic valve recognition
- multilevel graphic interface
- numeric parameters settings (scale, bias,
  ramp, linearization, dither, etc.)
- real-time parameters modification
- diagnostic and monitor signals
- preset data storing into the digital driver
- internal database of customized preset

Dvd contents:
- software installer
- software user manuals
- user manuals and configuration files
  for fieldbus communication (-BC, -BP, -EH)

E-A** - USB adapter
The adapters have to be connected to the USB
communication port of the PC to activate a
proper communication interface towards Atos
digital electrohydraulics.

For -PS and -EH versions, the adapter is not
required if the PC is already equipped with
a serial communication port (RS232).

E-C** - Cross Cable
The cross cables connect the DB9 connector
of the USB adapter with the digital driver’s com-
munication interface.

E-TRM** - Terminus
The fieldbus terminators are required when the
PC has to be connected directly to the digital
driver or to one end of the fieldbus network
(-BC or -BP).
### E-SW-* / Z-SW-* (First Supply - Mandatory)

The purchase of the E-SW-* / Z-SW-* softwares are mandatory for the use of Atos digital electrohydraulics.

After the installation the software remains active for 10 days at basic level and then it stops until the user inputs his password.

To receive the password it is required to apply the online registration form in the Atos Download Area (see 6.4).


The software communication options (-PS, -BC, -BP, -EH) are not interchangeable and must be purchased separately.

Note: The programming software E-SW-BC and E-SW-BP can use also the Serial communication port to program the AES integral drivers.

Note: The programming software E-SW-EH use the Serial communication port to program the AES-EH integral drivers.

Note: The programming software Z-SW-BC and Z-SW-BP can use also the Serial communication port to program the Z-ME-KZ controllers.

### E-SW-^N / Z-SW-^N (Next Supplies - Optional)

The E-SW-^N / Z-SW-^N Dvd are same as 6.1 and they can be purchased only by users already registered.

### Option /S (only for E-SW-* software)

E-SW-* software with /S option is required to program digital proportional components equipped with alternate P/Q control:
- PES variable displacement pumps (see tab. G215)
- TES(LE3) proportional valves with /SP, /SF, /SL options (see tab. G212)

Note: E-SW-* /S software allows to program also standard digital components.

Note: /S option is already included in standard software version Z-SW-*.

### Atos Internet Download Area

Atos Internet Download Area is available in the Electronic section of Atos catalog on-line (http://www.download.atos.com) and it allows to:
- apply the online registration form for E-SW-* or Z-SW-* after the first supply of the software
- download from the personal area the latest release of the Atos software, manuals, drivers and configuration files

The updated software and USB drivers can be easily installed following the instruction contained in the "info.txt" files available in the download section.

An automatic mailing message will inform all the registered users whenever a new software upgrade or technical documentation is available.

### Firmware Update

Using the programming software E-SW and Z-SW it is possible to update the firmware of the following Atos digital drivers and controllers:
- AES/AEG s30 drivers
- AEZ s10 controllers
- Z-ME-KZ controllers

Please refer to the manuals included in the E-SW / Z-SW programming software for the updating procedure.

Note: Firmware update requires proper serial communication cable (see section 10).

### Software Graphic Interface - Examples

**BIAS & SCALE**: numeric setting of bias and scale parameters allows to optimize the valve’s hydraulic regulation; the graph shows the effect of your changes

**LINEARIZATION**: linearization curve can be modified using the coordinates of the six available points; drag each point directly on the graph to modify the linearization setting

**DIAGNOSTIC**: complete and comprehensive representation of actual valve’s working conditions and alarms

### USB Adapter Characteristics

**9.1 E-A-PS-USB/DB9** adapter from PC USB port to -PS Serial cables
- DB9 male connector according to RS232 specification
- USB female connector, type A
- transmission rate from 1,6 kbit/s up to 235 kbit/s
- external power supply not required (USB supply)

**9.2 E-A-BC-USB/DB9** adapter from PC USB port to -BC CANopen cables [Model: Ifak - isCAN USB]
- DB9 male connector according to the CIA specification DR303-1
- USB female connector, type A
- transmission rate from 10 kbit/s to 1 Mbit/s
- external power supply not required (USB supply)
- LEDs indicate the actual working condition

**9.3 E-A-BP-USB/DB9** adapter from PC USB port to -BP PROFIBUS DP cables [Model: Ifak - isPro USBx12]
- DB9 female connector according to the PROFIBUS RS485 specification
- USB female connector, type A
- transmission rate from 1,6 kbit/s to 12 Mbit/s
- external power supply not required (USB supply)
- LEDs indicate the actual working condition
9.4 E-A-PS-USB/R adapter from PC USB port to E-MI-AS drivers
- direct infrared communication with the driver
- USB female connector, type A
- plug-in format for direct connection on the driver
- transmission rate 9.6 kbit/s
- external power supply not required (USB supply)

10 CABLES CHARACTERISTICS

10.1 E-C-PS-DB9/M12 - 4 m cables
For connection of E-A-PS-USB adapter to digital proportional valves -ZO(R) with integral -PS driver (AES, AEG, AEZ, TES, LES, PES, AERS, TERS, TEZ, LEZ) and AES drivers with fieldbus interface (-BC, -BP, -EH)

10.2 E-C-PS-DB9/M8 - 4m cables
For connection of E-A-PS-USB adapter to ex-proof digital proportional -ZA valves with integral -PS driver (AES, TES, LES, AERS, TER S) and AES drivers with fieldbus interface (-BC, -BP)

10.3 E-C-BC-DB9/M12 - 2 m cables
For connection of E-A-BC-USB adapter to digital proportional valves -ZO(R) with integral -BC driver (AES, TES, LES, PES, AERS, TERS, TEZ, LEZ)

10.4 E-C-BC-DB9/RA - 2 m cables
For connection of E-A-BC-USB adapter to ex-proof digital proportional valves -ZA with integral -BC driver (AES, TES, LES, AERS, TERS)

10.5 E-C-BP-DB9/M12 - 2 m cables
For connection of E-A-BP-USB/DB9 adapter to digital proportional valves -ZO(R) with integral -BP driver (AES, TES, LES, PES, AERS, TERS, TEZ, LEZ)

10.6 E-C-BP-DB9/RA - 2 m cables
For connection of E-A-BP-USB/DB9 adapter to ex-proof digital proportional valves -ZA with integral -BP driver (AES, TES, LES, AERS, TERS)

10.7 E-C-PS-DB9/RJ45 - 2.5 m cables
For connection of E-8M-AS drivers
The fieldbus terminators for CANopen and PROFIBUS DP are required when the PC has to be connected directly to the digital driver or to one end of the fieldbus network (-BC or -BP, see following scheme).

**EtherCAT CABLE WIRING DIAGRAM**

Typical EtherCAT cable wiring diagram from industrial M12 connectors to standard RJ45 ethernet connectors.

**TERMINATORS CHARACTERISTICS**

The fieldbus terminators for CANopen and PROFIBUS DP are required when the PC has to be connected directly to the digital driver or to one end of the fieldbus network (-BC or -BP, see following scheme).

**TOOLS SELECTION EXAMPLES**

AES, AEG, AER, TERS, TES, LES, PES, TEZ, KZ
proportional valves with integral drivers / controllers and -PS connection
E-SW-PS (or E-SW-PS/S for alternate P/Q controls)
Z-SW-PS (for TEZ and KZ controllers)
E-A-PS/USB/DB9 (if RS232 serial port is not available on the PC)
E-C-PS/DB9/M12 (for standard integral drivers / controllers)
E-C-PS/DB9/M8 (for ex-proof integral drivers)
E-C-PS/DB9/DB9 (only for KZ controllers)

AES-EH (Serial communication)
E-SW-EH
E-A-PS/USB/DB9 (if RS232 serial port is not available on the PC)
E-C-PS/DB9/M12

E-MI-AS-IR (Infrared communication)
E-SW-PS
E-A-PS/USB/IR

E-BM-AS (Serial communication)
E-SW-PS
E-A-PS/USB/DB9 (if RS232 serial port is not available on the PC)
E-C-PS/DB9/RJ45

AES, AERS, TERS, TES, LES, PES, TEZ, KZ
proportional valves with integral drivers / controllers and -BC connection
E-SW-BC (or E-SW-BC/S for alternate P/Q controls)
Z-SW-BC (for TEZ and KZ controllers)
E-A-BC/USB/DB9
E-C-PS/DB9/M12 (for AES drivers when using Serial communication)
E-C-PS/DB9/M8 (for KZ controllers when using Serial communication)
E-C-PS/DB9/M (for ex-proof AES integral drivers)
E-B-C/DB9/M (for standard integral drivers / controllers)
E-B-C/DB9/RA (for ex-proof integral drivers)
E-T-RM/BC/DB9/DB9 (see section 12)

E-SW-BP (for TEZ and KZ controllers)
E-A-BP/USB/DB9
E-C-PS/DB9/M12 (for AES drivers when using Serial communication)
E-C-PS/DB9/M8 (for KZ controllers when using Serial communication)
E-C-PS/DB9/M (for ex-proof AES integral drivers)
E-B-C/DB9/M (for standard integral drivers / controllers)
E-B-C/DB9/RA (for ex-proof integral drivers)
E-T-RM/BC/DB9/DB9 (see section 12)