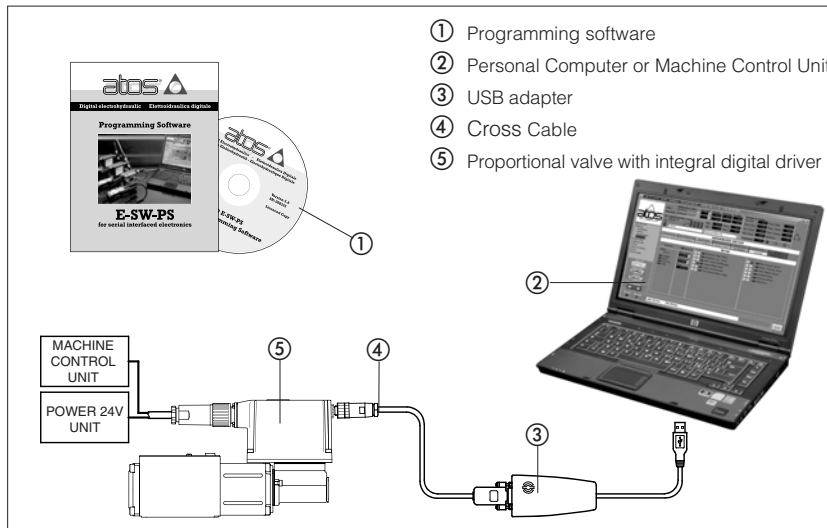


# Programming Software for digital electronics

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 [7])

The graphic interface is organized in pages related to different specific groups of functions and parameters.

The software automatically recognizes the connected valve model and adapts the displayed parameter groups, according to the selected access level.

The programming software is available in three different versions according to the driver's communication interfacing:

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

Fieldbus communication software (-BC, -BP) includes also dedicated manuals and configuration 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 option)

## 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 versions, the adapter is not required if the PC is already equipped with a serial port (RS232 port).

## E-C-\*\* - Cross Cable

The cross cables connect the DB9 connector of the USB adapter with the digital driver's communication interface (-PS, -BC or -BP).

## E-TRM-\*\* - Terminator

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).

## 1 PROGRAMMING SOFTWARE - see section [6]

**E - SW - PS - \*** /\*

Programming software  
**E-SW** = for valve driver  
**Z-SW** = for axis controller

**PS** = for Serial communication  
**BC** = for CANopen communication  
**BP** = for PROFIBUS DP communication

**Options** - see section [6]  
**S** = for alternate P/Q controls  
(only for E-SW software)

**Supplies** - see section [6]  
- = first supply  
**N** = next supply

## 2 USB ADAPTERS - see section [9]

**E - A - PS - USB** /\*

USB Adapter

**PS** = for Serial communication  
**BC** = for CANopen communication  
**BP** = for PROFIBUS DP communication

**Connector**  
**DB9** = to serial or fieldbus cables  
**IR** = to infrared E-MI-AS drivers

**USB** = from PC USB port

## 3 CROSS CABLES - see section [10]

**E - C - PS - DB9** /\*

Cross Cable

**PS** = for Serial communication  
**BC** = for CANopen communication  
**BP** = for PROFIBUS DP communication

### Connector (driver side)

**M8** = to ex-proof integral drivers (for -PS)  
**M12** = to standard integral drivers  
**RA** = to ex-proof integral drivers  
(for -BC, -BP)  
**RJ45** = to E-BM-AS drivers  
**DB9** = to Z-ME-KZ controllers

**DB9** = from DB9 connector (PC/adapter side)

## 4 TERMINATORS - see section [11]

**E - TRM - BC - DB9 / DB9**

Terminator

**BC** = for CANopen communication  
**BP** = for PROFIBUS DP communication

**DB9/DB9** = from DB9 connector (adapter side) to  
DB9 connector (cable side)

## 5 E-SW-\*/Z-SW-\* PROGRAMMING SOFTWARE - MINIMUM PC REQUIREMENTS

Personal computer	Pentium® processor 1GHz or equivalent	Memory	512 MB RAM + Hard Disk with 250MB free space
Operating system	Windows XP SP3	Device	Dvd reader
Monitor resolution	1024 x 768	Interface	RS232 serial port (only for -PS) or USB port

## 6 SOFTWARE

### 6.1 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). Software Dvd includes: software installer, user manuals and fieldbus configuration files (\*.EDS for -BC and \*.GSD for -BP). The software communication options (-PS, -BC and -BP) 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 Z-SW-BC and Z-SW-BP can use also the Serial communication port to program the Z-ME-KZ controllers

### 6.2 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.

### 6.3 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(LES) 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-\*

### 6.4 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.

## 7 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:

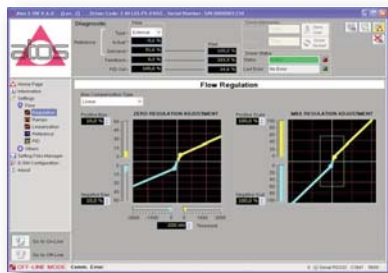
- AES/AEG s30 drivers
- AEZ s10 controllers
- Z-ME-KZ controllers

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

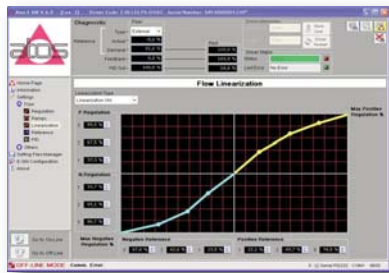
Note: firmware update requires proper serial communication cable (see section 10)

## 8 SOFTWARE GRAPHIC INTERFACE - Examples

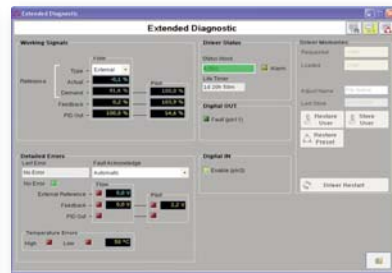
**BIAS & SCALE** : numeric setting of bias and scale parameters allows to optimize the valve's hydraulic regulation; the graph shows the effect of your changes



**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



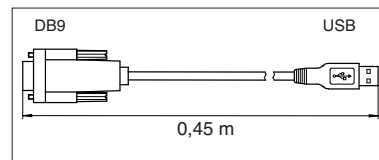
**DIAGNOSTIC** : complete and comprehensive representation of actual valve's working conditions and alarms



## 9 USB ADAPTER CHARACTERISTICS

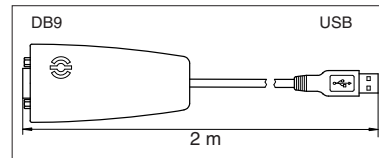
### 9.1 E-A-PS-USB/DB9 adapter from PC USB port to -PS Serial cables

- DB9 male connector according to RS232 specification
- USB female connector, type A
- transmission rate from 1,6 kbit/s up to 225 kbit/s
- external power supply not required (USB supply)



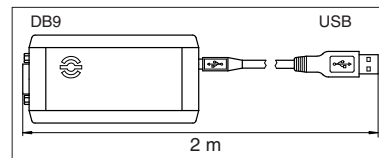
### 9.2 E-A-BC-USB/DB9 adapter from PC USB port to -BC CANopen cables [Model: Ifak - isCAN USB]

- DB9 male connector according to the CiA specification DS-102
- 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



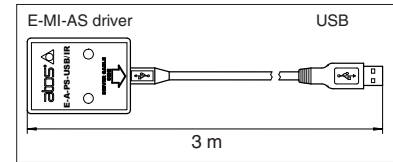
### 9.3 E-A-BP-USB/DB9 adapter from PC USB port to -BP PROFIBUS DP cables [Model: Ifak - isPro USBx12]

- 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/IR adapter from PC USB port to E-MI-AS drivers

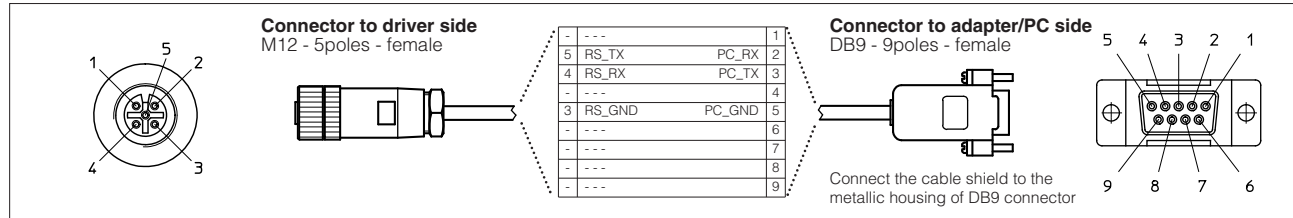
- direct infrared communication with the driver
- USB female connector, type A
- plug-in format for direct connection on the driver
- transmission rate 9,6 kbit/s
- external power supply not required (USB supply)



### 10 CABLES CHARACTERISTICS

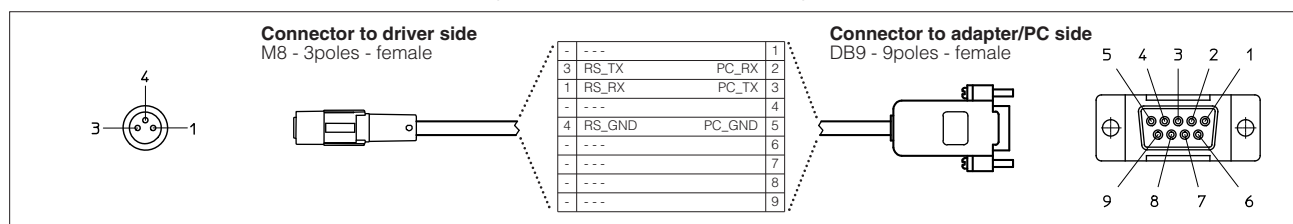
#### 10.1 E-C-PS-DB9/M12 - 4 m cables

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 and -BP)



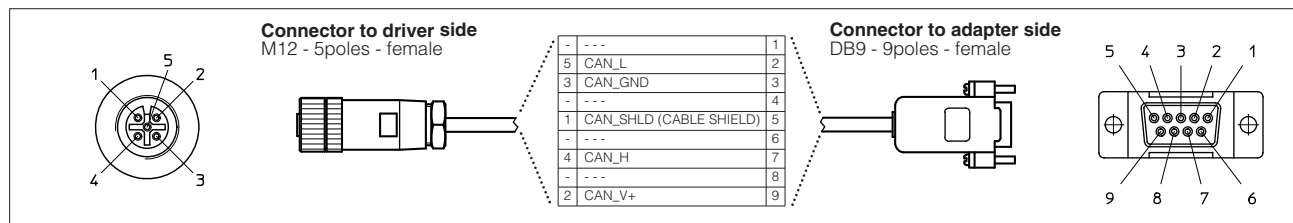
#### 10.2 E-C-PS-DB9/M8 - 4m cables

For connection of E-A-PS-USB adapter to ex-proof digital proportional -ZA valves with integral -PS driver (AES, TES, LES, AERS, TERS)



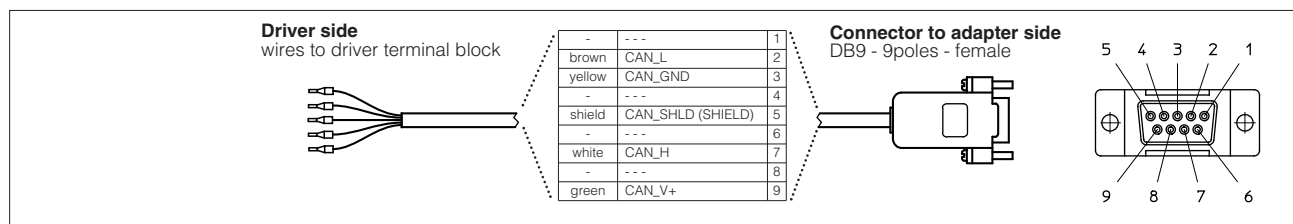
#### 10.3 E-C-BC-DB9/M12 - 2 m cables

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)



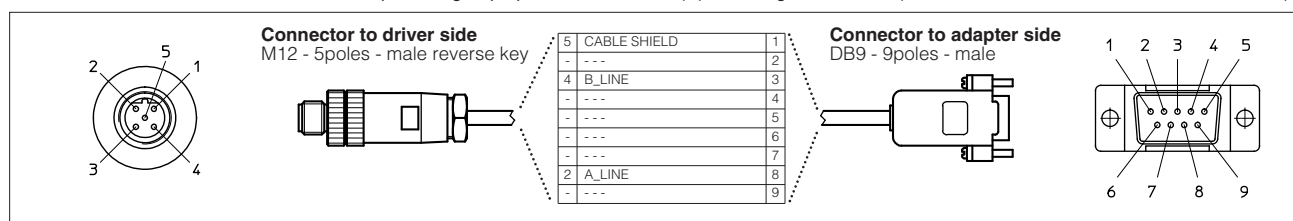
#### 10.4 E-C-BC-DB9/RA - 2 m cables

For connection of E-A-BC-USB adapter to ex-proof digital proportional valves -ZA with integral -BC driver (AES, TES, LES, AERS, TERS)



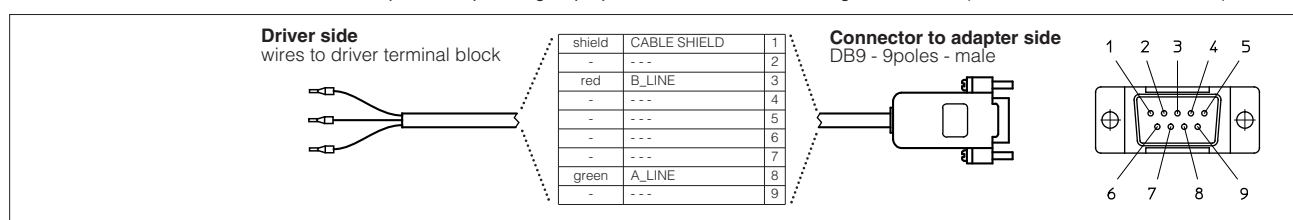
#### 10.5 E-C-BP-DB9/M12 - 2 m cables

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)

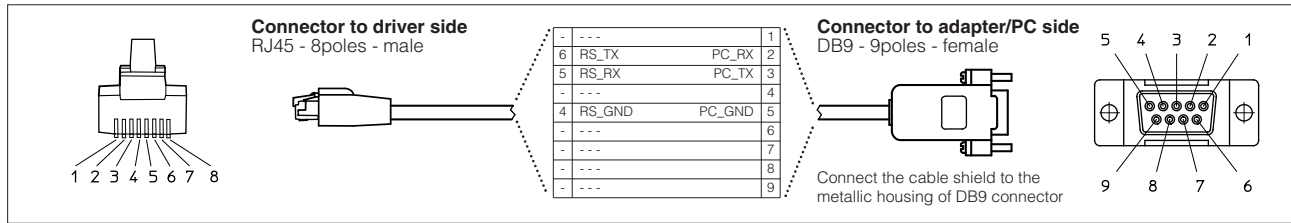


#### 10.6 E-C-BP-DB9/RA - 2 m cables

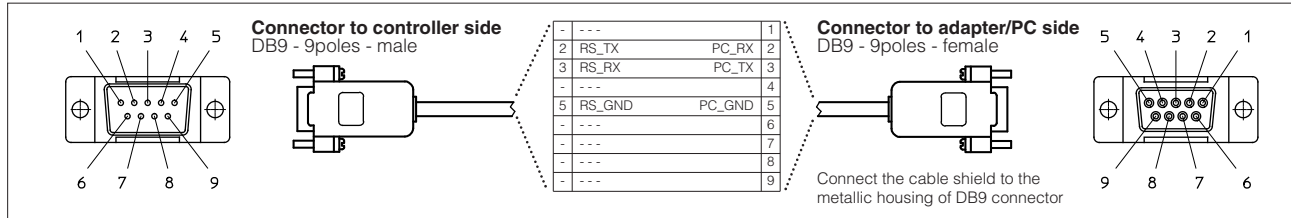
For connection of E-A-BP-USB/DB9 adapter to ex-proof digital proportional valves -ZA with integral -BP driver (AES, TES, LES, AERS, TERS)



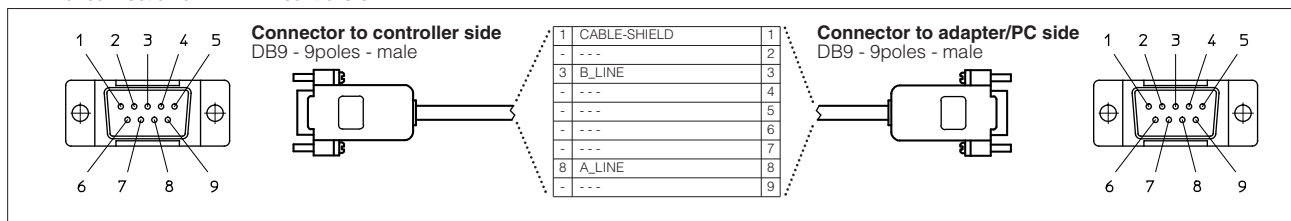
### 10.7 E-C-PS-DB9/RJ45 - 2,5 m cables For connection of E-BM-AS drivers



### 10.8 E-C-PS-DB9/DB9 - 4 m cables For connection of Z-ME-KZ controllers

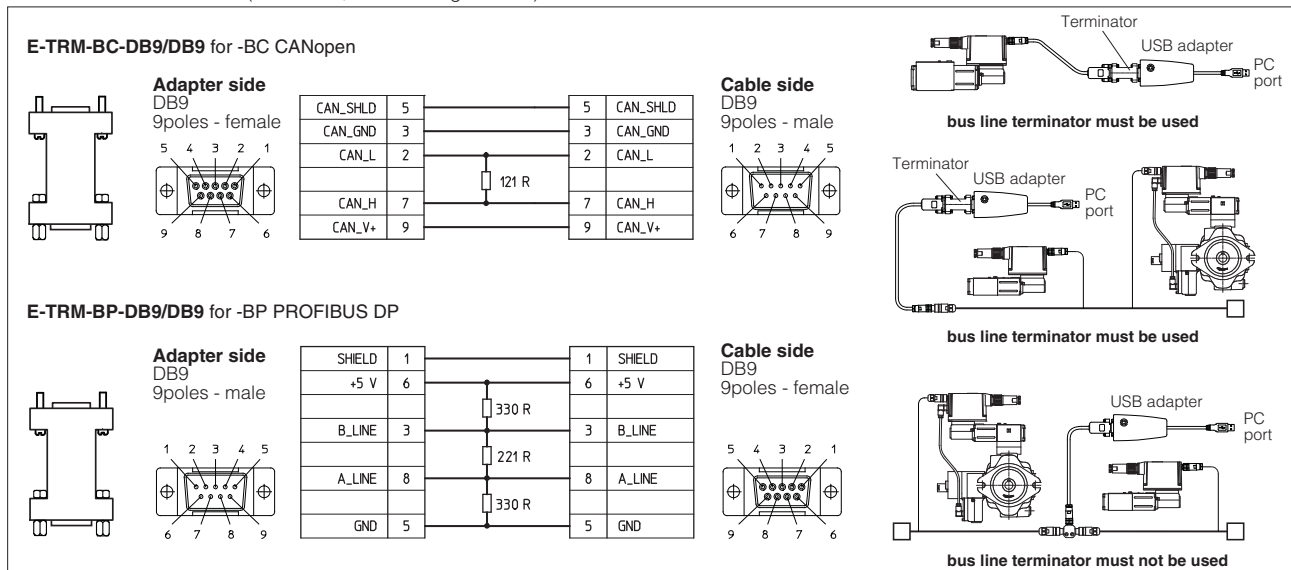


### 10.9 E-C-BP-DB9/DB9 - 2 m cables For connection of Z-ME-KZ controllers



## 11 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).



## 12 TOOLS SELECTION EXAMPLES

**AES, AEG, AEZ, AERS, 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, 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/DB9 (for KZ controllers when using Serial communication)  
E-C-BC-DB9/M12 (for standard integral drivers / controllers)  
E-C-BC-DB9/RA (for ex-proof integral drivers)  
E-TRM-BC-DB9/DB9 (see section 11)

**AES, AERS, TERS, TES, LES, PES, TEZ, KZ**  
proportional valves with integral drivers / controllers and -BP connection  
E-SW-BP (or E-SW-BP/S for alternate P/Q controls)  
Z-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/DB9 (for KZ controllers when using Serial communication)  
E-C-BP-DB9/M12 (for standard integral drivers / controllers)  
E-C-BP-DB9/RA (for ex-proof integral drivers)  
E-C-BP-DB9/DB9 (only for KZ controllers)  
E-TRM-BP-DB9/DB9 (see section 11)

### E-MI-AS-IR infrared

E-SW-PS  
E-A-PS-USB/IR

### E-BM-AS driver with -PS connection

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