Datasheet

AP23

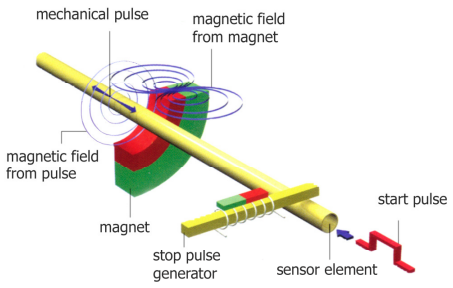
Version 01-2016 / EN

AP23 Start/Stop Display

Suitable for:

- **Displaying position and velocity**
- **Signal conversion**
- **Cam control**
- **Display for non-linear position and velocity**

For magnetostrictive sensors (MTS)



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General

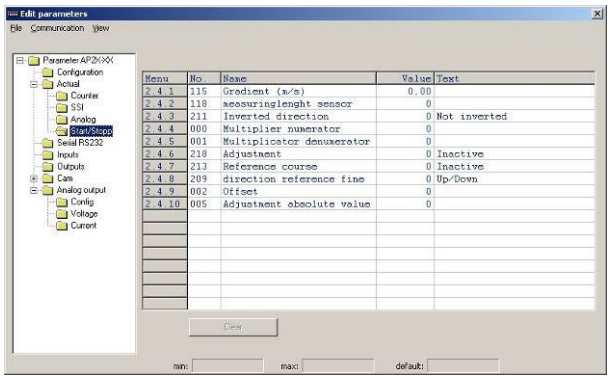
The AP23 is designed to display position and velocity, to be used as an electronic camshaft, to convert signals and has the abilities to solve complex and unusual applications.
For this, the AP23 uses a sensor input that can handle the specific start/stop signal. This signal is used by the Temposonic sensors from MTS Sensor Technologie. The position and velocity values can be adjusted through a set of parameters.

Main features:

- 8 digit display, digit height 10mm
- RS232 communication
- Analog output (optional)
- Inputs and outputs optically isolated
- 12 limit switches or cams, 4 digital outputs (optional)

Programming

The AP23 can be programmed by using the front keys. Another possibility is to use the PC-program DST2. This software allows easy access to and overview of all parameters. The settings of the display controller can be stored on your harddrive. The communications with the AP23 are ASCII based RS232; it is possible to connect the AP23 to other PC-software.

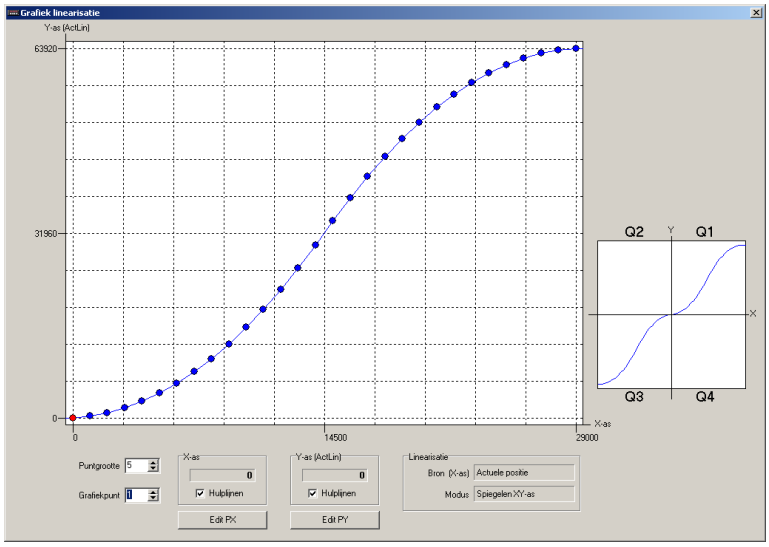


Display for position and velocity

The sensor value is adjusted by the programmable parameters. The value can be converted to any desired unit, e.g. mm, meters or mm/sec. This value can be displayed on the 8 digit display of the AP23. Based on the actual display limit values or cams can be programmed.

Linearization function

The AP23 has a very powerful linearization function and allows to display and process nonlinear motions. The actual display position or speed value is converted into an additional value “actual linearization”. Interpolation takes place between these (max. 30) points. This additional value can also serve as a source for the cams function or analog output.



Signal conversion

One of the unique possibilities of the AP23 is to convert the display value to a current or voltage. The range of the analog output is fully adjustable from -20..+20 mA or -10V..+10V. This feature makes it easy to convert for example the value of the magnetostrictive sensor to an analog value.

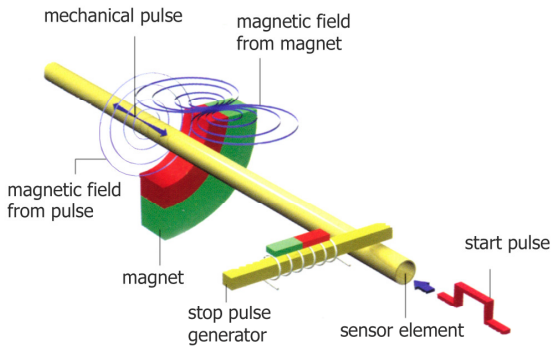
Cam controller

It is possible to freely program a total of 12 cams. These cams can be assigned to 4 different outputs and can be compensated dynamically for dead-time. It is also possible to program the cams with a hysteresis. The response time for the AP23 is no more than 250 microseconds (1 cycletime).

Overview connections

Sensor:

Start/stop input
The sensor input is dedicated to start/stop sensors. The AP23 performs a time-measurement between the start- and stop-pulse. This results in an absolute length measurement. De basic operation of the magnetostrictive displacement sensor from MTS Sensor Technologie is displayed below.



RS232 communication
The ASCII-protocol is used to communicate with the AP23. The PC-software DST2 uses this protocol to enable easy programming with the PC.

Analog output
The optional analog output has a 16 bit D/A convertor. Both current or voltage are possible. The analog output is freely adjustable within the entire range of -20..+20mA or -10V..+10V.

Logical inputs and outputs
The AP40 has 4 digital inputs and 4 digital outputs.

For example the following functions can be assigned to the ***inputs***:
- Store
- Keylock
- Start / stop cams
- Etc.

For example the following functions can be assigned to the ***outputs***:
- Cams
- Error
- Cams active
- Etc.

Technical data

Supply voltage	10…35 V DC
consumption	< 150 mA (without sensor-consumption)
Output voltage	For external sensor
+ Ud	max 400 mA depending on supply voltage
+5V	max 400 mA
Max. counting range	-9999999…+99999999
Cycle time	250 µs (fixed)
Start/stop input	According to RS422
Digital inputs 1…2	Optically isolated; low: 0…+5 V; high: +10 V…+35 V
Input resistance	Appr. 1.8 kΩ at 24 V
Digital outputs 1…4	Optically isolated, N FET, short-circuit proof; Imax 500 mA
Supply voltage	35 V max.
Voltage output	Galvanically isolated; max. -10 V … +10 V; 16 bit; Imax ± 12 mA
Current output	Galvanically isolated; max. -20 mA … +20 mA; 16 bit; Rmax 550 Ω
Serial port	Ser-1 RS232 C
Display	8 digit 7-segment LED; digit-height 10 mm
Temperature range	0…50 ℃
EMC	According to EMC directive 2004/108/EC emission NEN-EN-IEC61000-6-3:2007 immunity NEN-EN-IEC61000-6-3:2005
Weight	< 0.25 kg
Sealing	front: IP50; rear: IP20

Typekey

AP23 – X X

Analog output
0 = no analog output
A = analog output

Digital outputs
0 = no digital outputs
D = 4 digital outputs

Accessories

CDS-B02	transparant protective DIN-hood with lock - IP54
CDS-B22	transparant cover made from soft plastic - IP65 (keys accessible)
EMC-B02	EMC-bracket to connect cables and shielding
EM1016	USB/RS232 converter
KBL006-002	RS232 cable 2m with 2x 9P sub-D connector

Scope of delivery

Connectors, 2 fixings and EMC-bracket are within the scope of delivery.
A CD with manuals and software is included.

Sales

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