

AP22 Analog Display

Suitable for:

- **Displaying position and velocity**
- **Limit switches with hysteresis**
- **Display for non-linear position and velocity**



For sensors with analog interface

- **Programmable voltage input -10..+10 V or**
- **Programmable current input -20..+20 mA**

General

The AP22 is designed to display position and velocity, to be used as an electronic camshaft and has the abilities to solve complex and unusual applications.

For this, the AP22 uses a 16 bit analog sensor input. The input is able to handle all signals within the range of -10..+10V or -20mA..+20mA. The position and velocity values can be adjusted through a set of parameters.

Main features:

- 8 digit display, digit height 10mm
- RS232 communication
- Programmable analog input
- 12 limit switches, 4 optional digital outputs

Programming

The AP22 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 AP22 are ASCII based RS232; it is possible to connect the AP22 to other PC-software.

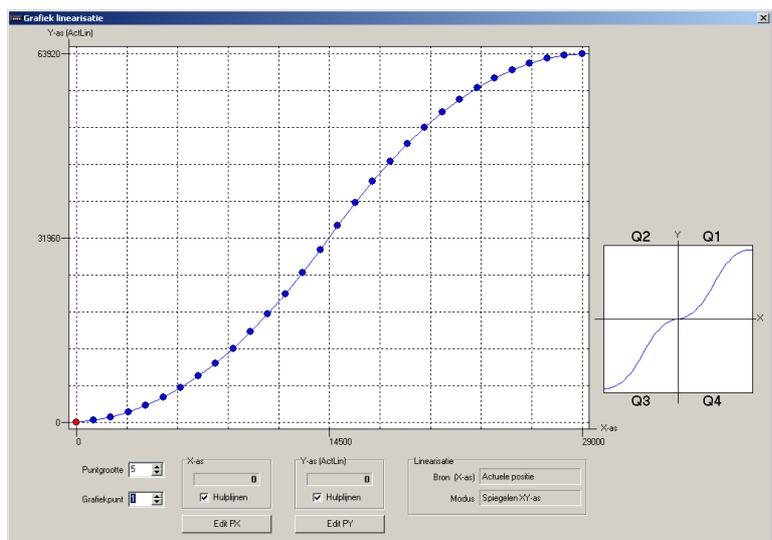
Menu	No.	Name	Value	Text
2 3 1	105	Adjustment absolute value	0	
2 3 2	219	Adjustment	0	Inactive
2 3 3	213	Reference course	0	Inactive
2 3 4	227	Min/max function	0	Inactive
2 3 5	113	Min. value	0	
2 3 6	114	Max. value	0	
2 3 7	226	AD function	0	Voltage
2 3 8	104	Measuring time analog	0,00	
2 3 9	225	Integrator Analog	0	
2 3 10	105	U1 Voltage	0,0000	
2 3 11	106	U2 Voltage	0,0000	
2 3 12	107	S1 Voltage	0	
2 3 13	108	S2 Voltage	0	
2 3 14	109	I1 Current	0,0000	
2 3 15	110	I2 Current	0,0000	
2 3 16	111	S1 Current	0	
2 3 17	112	S2 Current	0	

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 AP22. Based on the actual display value limit switches or cams can be programmed.

Linearization function

The AP22 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.



Cam controller

It is possible to freely program a total of 12 cams. These cams can be assigned to 4 different outputs. It is also possible to program the cams with a hysteresis.

The response time for the AP22 is no more than 250 microseconds (1 cycletime).

Applications

Many applications can be solved by using the display controller AP22. A few possibilities:

- Speed measurement
- Cam generator
- Over-/underspeed monitoring

Overview connections

Sensor:

Analog

The 16 bit analog input is freely programmable within the range of -20..+20mA or -10..+10V.

This freedom offers the possibility to connect all regularly used signals: 0..±20mA, 4..20mA, 0..10V, 0.. ±10V and so on.

RS232 communication

The ASCII-protocol is used to communicate with the AP22. The PC-software DST2 uses this protocol to enable easy programming with the PC.

Logical inputs and outputs

The AP22 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**:

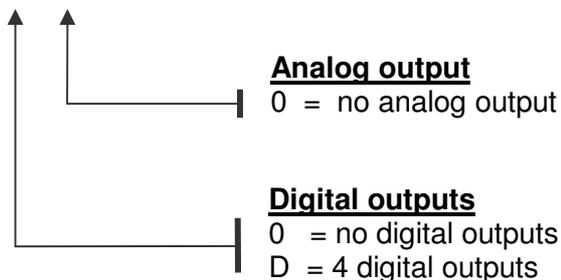
- Cams
- Error
- Cams active
- Etc.

Technical Data

Supply voltage	10...35 V DC
<i>consumption</i>	< 150 mA (without sensor-consumption)
Output voltage	For external sensor
<i>+ Ud</i>	max 400 mA depending on supply voltage
<i>+5V</i>	max 400 mA
Max. counting range	-9999999...+99999999
Cycle time	250 μ s (fixed)
Analoge input	Galvanically isolated
<i>Voltage input</i>	max. -10 V ... +10 V; 16 bit
<i>Current input</i>	max. -20 mA ... +20 mA; 16 bit
Digital inputs 1...2	Optically isolated; low: 0...+5 V; high: +10 V...+35 V
<i>Input resistance</i>	Appr. 1.8 k Ω at 24 V
Digital outputs 1...4	Optically isolated, N FET, short-circuit proof; I _{max} 500 mA
<i>Supply voltage</i>	35 V max.
Serial port	Ser-1 RS232 C
Display	8 digit 7-segment LED; digit-height 10 mm
Temperature range	0...50 °C
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

AP22 – X 0



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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