AP21 SSI Display

Suitable for:

- **Displaying position and velocity**

- **Signal conversion**

- **Cam control**

48 mm

96 mm

approx. 90 mm

For sensors with SSI

- **Up to 30 databits**
- **Binary and Gray-code**

General

The AP21 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.
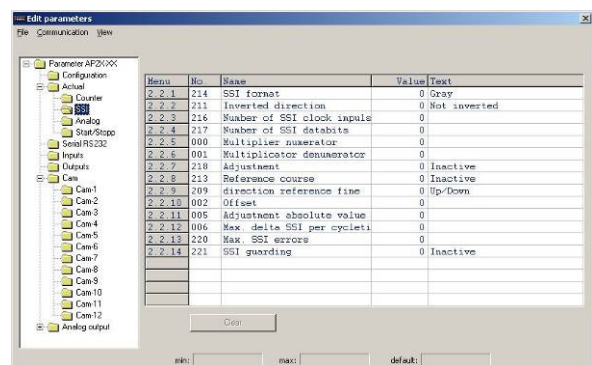For this, the AP21 uses a Synchronous Serial Interface (SSI) as sensor input. The position and velocity values can be adjusted through a set of parameters.

Main features:
- 8 digit display, digit height 10mm
- RS232 communication
- Programmable SSI-input
- Analog output (optional)
- Inputs and outputs optically isolated
- 12 programmable cams

Programming

The AP21 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 AP21 are ASCII based RS232; it is possible to connect the AP21 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 AP21. Based on the actual display limit values or cams can be programmed.

Signal conversion

One of the unique possibilities of the AP21 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 the value of a SSI-encoder 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. It is possible to program the cams with a hysteresis.
The response time for the AP21 is no more than 250 microseconds (1 cycletime).

Overview connections

<u>Sensor:</u>

SSI input
Input for sensors with SSI. The number of clock pulses and number of databits can be programmed, as well as the code (Gray, binary).

<u>RS232 communication</u>
The ASCII-protocol is used to communicate with the AP21. The PC-software DST2 uses this protocol to enable easy programming with the PC.

<u>Analog output</u>
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.

<u>Logical inputs and outputs</u>
The AP21 has 2 digital inputs and 4 (optional) digital outputs.

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

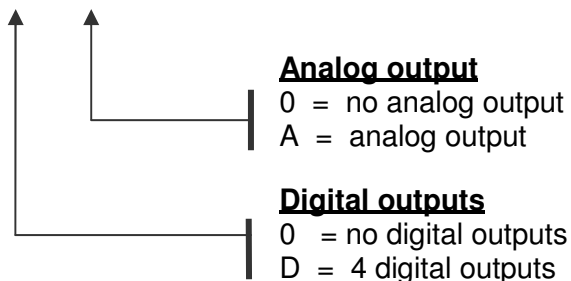For example the following functions can be assigned to the *outputs*:
- Cams
- Error
- Cams active
- Etc.

Technical data

Supply voltage	10…35 V DC (without power failure)
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)
SSI	Optically isolated
clock-output	driver according to RS422
clock-frequency	125 KHz (138,9 kHz if > 26 bit encoder signal)
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-citcuit 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 ports	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

AP21 – 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

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