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Compact evaluation unit for speed monitoring

- Complete sensor with transmitter in the housing of a proximity switch
- Conversion of frequencies into current, voltage, frequency or pulse signals
- Linearisable
- Numerous configurable parameters

Characteristics

Transmitters combine a primary sensor with processing electronics with a powerful 16-bit microcontroller in a package made of stainless steel SUS304L.
Sensors measure speed rotating parts of machines, turbines, etc. through detection approximation of metals or magnets in different environments and estimate the resulting frequency.

The electronics make various output signals available:

- Analog signal 0/4 – 20 mA
- Analog signal 0 – 10 V
- Frequency signal 0 .. 2000Hz
- Impulse about the volume of flowing liquid

Sensor with switching output push/pull, pnp, npn.
Set by parameter.

Specifications

Sensor	Pre-tensioned hall sensor
Detection distance	Typikal 0 .. 10 mm
Meterig range	0 .. 2000 Hz
Accuracy	±0.1 % FS
Pressure resistance	50 bar
Operating temperature	-20 .. +80°
Storage temperature	-20 .. +80°C
Materials	Housing SUS304L Contacts CuZn, Ni b / Au 0,2
Power supply	15 .. 30 V DC
Power requirement	< 1 W (for no-load output)
Output data	all outputs are resistant to short circuits and reversal polarity protected
Current output:	0/4 .. 20 mA
Voltage output:	0 .. 10 V or 0 .. 5V
Frequency output	0 .. 2000 Hz Push/pull, pnp, npn. Iout = 200 mA max.
Swich ouptut	Push/pull, pnp, npn. Iout = 200 mA max.
Puls output	Push/pull, pnp, npn. Iout = 200 mA max.
Display	Yellow LCD shows Operating voltage/Output status
Electrical connection	for round plug connector M12x1, 4pole
Ingress protection	IP 67
Weight	approx. 0.02 kg
Conformity	CE

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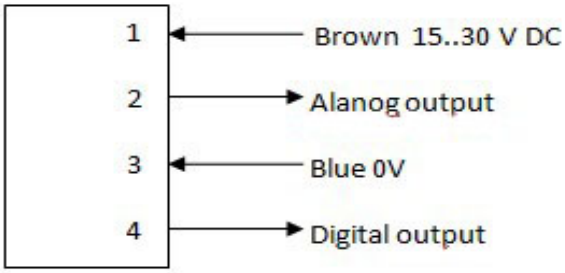
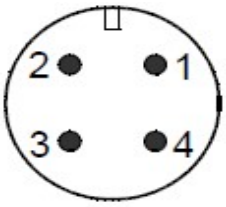
Wiring



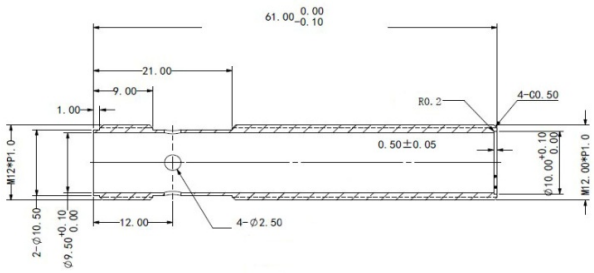
Connection



It is recommended to use shielded wiring.

The push-pull output of the frequency, swith or pulse output version can as desired be switched as PUSCH/PULL a PNP or an NPN output.

Dimensions

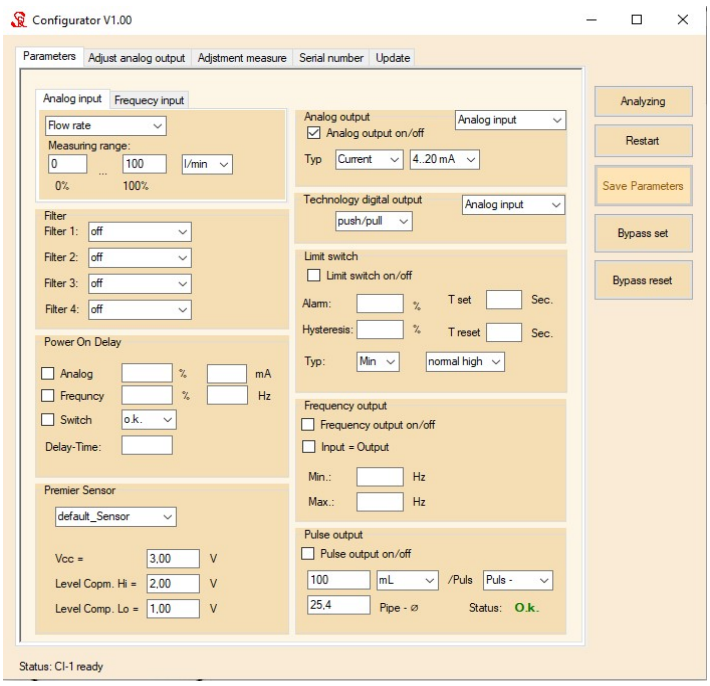


The magnetic field sensor reacts to magnetic fields of both polarities perpendicular to the end face.

Note

The CI-1 device configurator with associated software is available as a convenient option for programming all parameters by PC, and for adjustment.

Programming

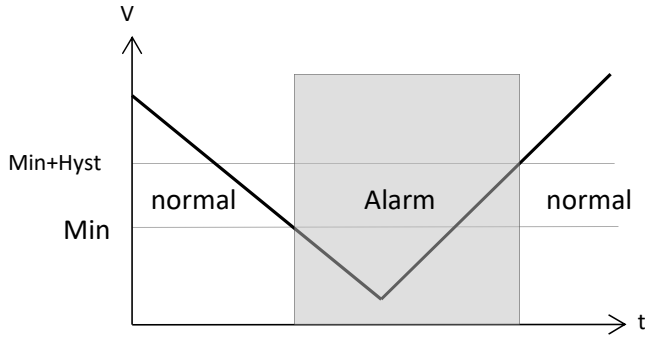


Interface CI-1

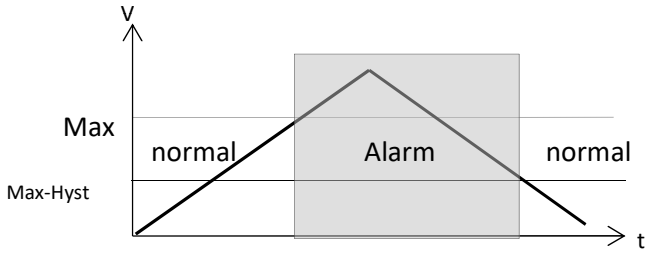
Swith output

The limit switch can be used to monitor minimal or maximal.

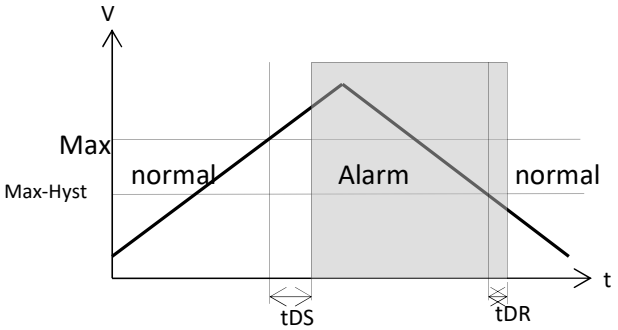
With a minimum-switch, falling below the limit value causes
a switchover to the alarm state. Return to the normal state occurs
when the limit value plus the set hysteresis is once more exceeded.



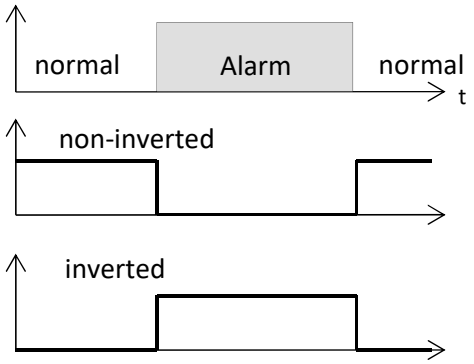
With a maximum-switch, exceeding the limit value causes
a switchover to the alarm state. Return to the normal state occurs
when the measured value once more falls below the limit value
minus the set hysteresis.



A changeover delay time (tDS) can be applied
to switching to the alarm state. Equally, one switch-back delay time (tDR)
of several can be applied to switching back to the normal state.



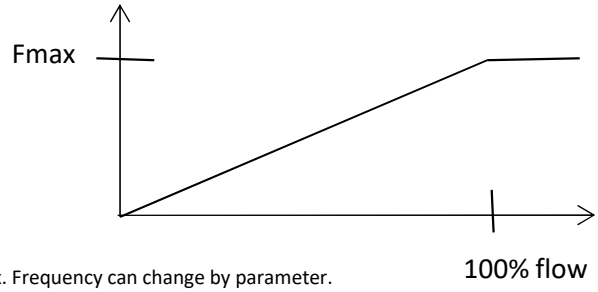
In the normal state the integrated LED is on, in the alarm state it is off,
and this corresponds to its status when there is no supply voltage
In the non-inverted (standard) model, while in the normal state
the switching output is at the level of the supply voltage;
in the alarm state it is at 0 V, so that a wire break would also display
as an alarm state at the signal receiver.
Optionally, an inverted switching output can also be provided,
i.e. in the normal state the output is at 0 V, and in the alarm state
it is at the level of the supply voltage.



Power-On-Delay for swith output

A Power-On-Delay function (ordered as a separate option) makes
it possible to maintain the switching output in the normal state
for a defined period after application of the supply voltage.

Frequency output



Max. Frequency can change by parameter.
Settings area 0 .. 2000 Hz
The frequency output can be configured so that the signal from
the primer sensor is reproduced 1: 1.
This makes it much more convenient to position
the sensor in the mechanical block.

Power-On-Delay for frequency output

A Power-On-Delay function (ordered as a separate option) makes
It is possible to have the frequency output with a fixed frequency
for a defined period after application of the supply voltage.

Pulse output

Pulse width 10 ms

Pulse per volume should be specified.

Min. Pulse value = max. Flow rate in sec. / 50

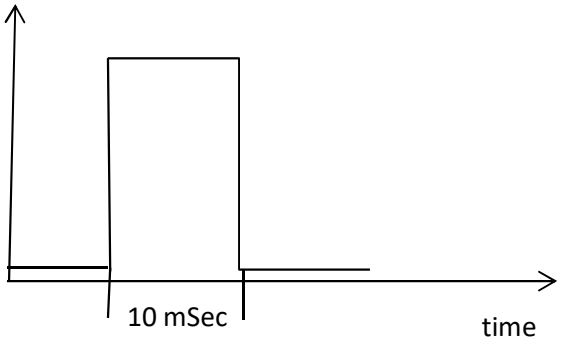
For example:

Flow max = 100 L / min

or Flow max = 100/60 = 1.6 (6) L / sec

Min. pulse per volume = 1,6(6)/50 = 0.03(3) L or ca. 34 mLiter

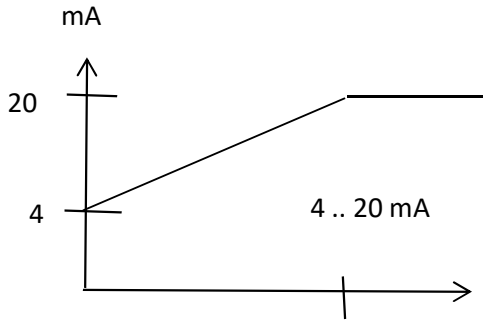
Configurator software checks parameters for pulse and outputs message "O.k." or "Error."

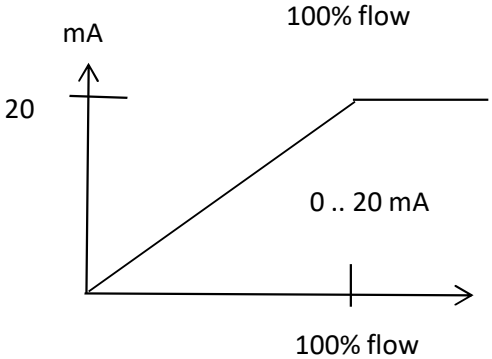


Software "Configurator" converter Input of parameters and helps with settings.

Current output

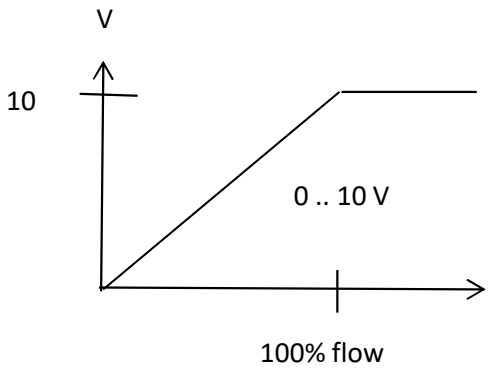
The current output can be operated as 4 .. 20 mA or 0 .. 20 mA





Voltage output

The voltage output can be operated as 0 .. 10V or 0 ..5 V.



Power-On-Delay for analog output

A Power-On-Delay function (ordered as a separate option) makes

It is possible to have the analog output with a fixed value

for a defined period after application of the supply voltage.

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Ordering code

UNI - F - 1 - 2 - 3 - 4 - 5 - 6

1. Input freuency 4 digit number 0..2000

2. S -Swith output
   F - Frequency output
   P - Pulse output

3. at swith output 4 digit number of limit value
   000,0 .. 100,0 %
   at swith frequency 4 digit number of max. frequency
   0000 .. 2000
   at pulse output 4 digit number of pulse per volume
   0000 .. 9999

4. Only for pulse output: unit
   1 m^3
   2 L
   3 mL

5. I - Current output
   U - Voltage output

6. at current output 2 digit number
   04 - 4 ..20 mA
   00 - 0 .. 20 mA
   at votage output 2 digit number
   10 - 0 ..10 V
   05 - 0..5V