UNIFLEX DMS

Transmitter with built-in supply for load cells and pressure sensors

Supply 10 or 12 V DC

Up to 150 mA bridge current

Characterising up to 8 segments

Comprehensive galvanical isolation

Tare function lockable

PROFILE

The UNIFLEX DMS transmitter provides measurement and monitoring of signals from straingauges (DMS) as also load cells in process control and other industrial applications.

Configuration and parameter setting is possible via the front panel keys. With a PC and connecting adapter the transmitter can be configured and adjusted remotely.
This also allows documentation of the adjusted parameters, as also reading of the input signal and parameters during operation.

DESCRIPTION

The transmitter offers a mV-signal input as also the supply voltage neccessary to drive strain gauges respectively load cells. The scaling function converts the input signal direct into to the value beeing measured.
Signal characterizing with up to 8 segments features the use of non linear inputs.

Password

A password, freely selectable prevents unauthorized access to configuration and parameter settings as also the tare function.

Input circuit monitoring

The mV signal always is monitored for break.
Signalling options: red LED in front (lights up on alarm)
Via switching output (selection of energized or de-energized or not operational)
Via the output signal (selectable for upscale or downscale).

Tare function

The tare function is used to suppress pre-loads. It also can be initiated via an external contact.

Limit signalling

– Min. and max. alarm (adjusted in engineering units). Adjustable between -10 and 110 % referred to the output signal span.

Hysteresis

– programmable in engineering units or in % in the range from 0,0... 99,9 % referred to the output signal span.

Alarm suppression (response delay)

– programmable from 0... 9999 s. All alarms shorter than the selected delay are ignored.

Signalling

– red LED in front panel (lights up on alarm)

– with switching output (selection of energized or de-energized or no operation)

Filter

Built-in is a 1st-order mathematical filter. It is adjustable for time constant and bandwidth.
The bandwidth is the tolerance above and below the process value, in which the filter is operating. Changes of the process value larger than the adjusted bandwidth are not filtered and will be transferred directly to the output to minimize any delay.

Fig. 1 Filter function

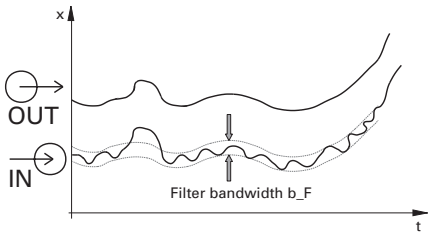
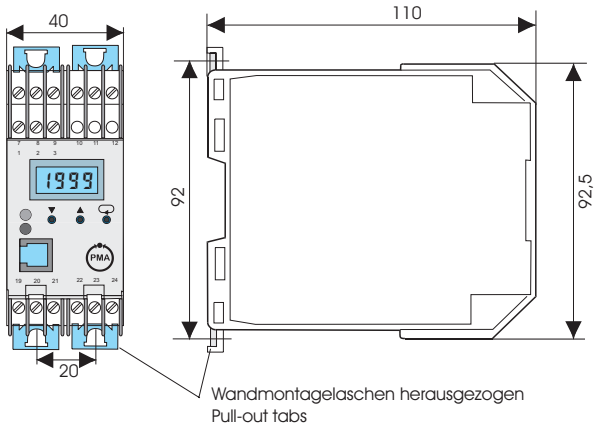


Fig. 2 Dimensions (mm)



TECHNICAL DATA

INPUT (CONFIGURABLE)

Resolution: approx. 20 000 steps referred to full span.
Measuring cycle: 100 ms

Direct voltage mV

Range	Smallest Span
-3...23 mV	2,5 mV
-11...69 mV	9 mV
0...160 mV	15 mV

Input resistance: 1 MΩ

Error of display: ≤ 0,1 % ± 1 digit

Additional linearization

Up to 8 segments respectively
9 supporting points

Input circuit monitor

For break

Permissible interference at input

to DIN IEC 770 6.2.4
Common mode suppression: negligible
Series mode: no effect up to
1 V_{rms} for 0...50 mV[1)]

BRIDGE SUPPLY

12 V DC respectively 10 V, max. 150 mA
Temperature effect: approx. + 0,03 %

OUTPUT

The required calibrated output signal is activated via software. The current and voltage output signals are always available in parallel.

Synchronism error: ≤ 0.5 %

Standard current signal

0...20 mA or 4...20 mA
Output sense: direct or inverse
controlled range: -0.3...23 mA

Load: 0...700 Ω
Load effect: ≤ 0.1 % / 100 Ω

Standard voltage signal

0...10 V parallel to current signal
Output sense: direct or inverse
Controlled range: -0.15...11.5 V

Load: ≥ 2 kΩ (not continous short-circuit proof)
Load effect: negligible with ≥ 2 kΩ

Resolution: *13 bit (9000 steps)*

Characteristic: *linear*

Conformity error

(including factory calibration error)
≤ 0,25 % of fsd

Reproducibility: ≤ 0,03 %

Input circuit monitor

Output action selectable upscale or downscale.

Dynamic response

(For a step change from 10 to 90 % of input signal)

Output follows input: approx. 600 ms.

Output ripple

Voltage output: ± 10 mV
Current output: ± 8 mV
Spikes up to 100mV[U]; 25 mV[I]

Switching output

One relay with potential-free N.O. contact.
Contact rating: max. 250 VAC, 1 A
min. 5 V, 0,1 A
Energized or de-energized operation configurable.
Operating mode: *selectable for input circuit monitor and/or limit signalling.*

DISPLAY

4-digit LCD, 7 mm high, with front panel keys for configuration and parameter setting.
Green LED: ready for operation.
Red LED: input circuit monitor or limit signaller activated.
Blinking mode during operating the Tare function.

OPERATION

Configuration, Parameter setting and Tare correction are menu-guided via three front-panel keys.
A separatly available engineering tool (base WINDOWS) permits setting with a PC via adapter and serial interface.

Password

A password, freely selectable prevents unauthorized access to configuration and parameter settings and tare.

TARE

By means of an external contact or after release of function in the configuration level via front key or
with engineering tool via interface in front.

SERIAL INTERFACE

RS 232C with active adapter for operating the engineering tool.

POWER SUPPLY

AC(DC) supply

90...265 VAC[1], 50 or 60 Hz
Power consumption: approx. 7,7 VA

Universal supply

18...32 VDC / 24 VAC +10-15%
Consumption: approx. 4,6 W/ 7,1 VA

Power supply effect

negligible within specified limits.

Behavior with mains failure

no loss of configuration data.

GALVANICAL ISOLATION

Between input and output and power supply.

Test voltages

Between input and output: 500 VAC
Between mains and in-/output: 2,3 kVAC

ENVIRONMENTAL CONDITIONS

Temperature limits

For specified accuracy: 0...55 °C[2]
For operation: -10 ... + 60 °C
Storage: -20 ... + 70 °C

Temperature effect

(within -10...+ 60 °C)
On span start: ≤ 0,04 % / 10K
On span: ≤ 0,06 % / 10K

Relative humidity: 90 % rH, no condensation

Shock and vibrations

According to DIN IEC 68-2-6/Fc and DIN 68.2.29/Eb

[1] also limited use with direct current
[2] in fieldhousing max. + 50 °C
[3] not valid for smallest span

Fig. 3 Electrical connections

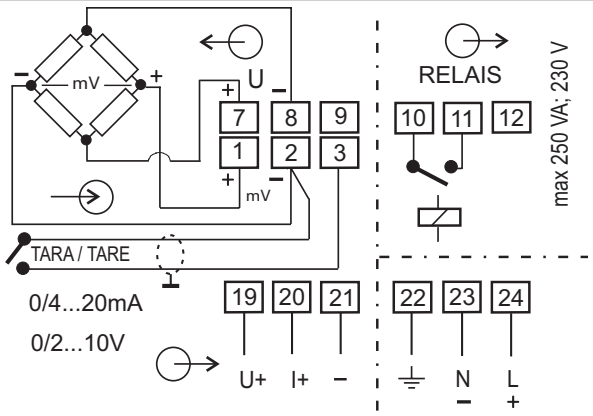


Fig. 4 Configuration word 1

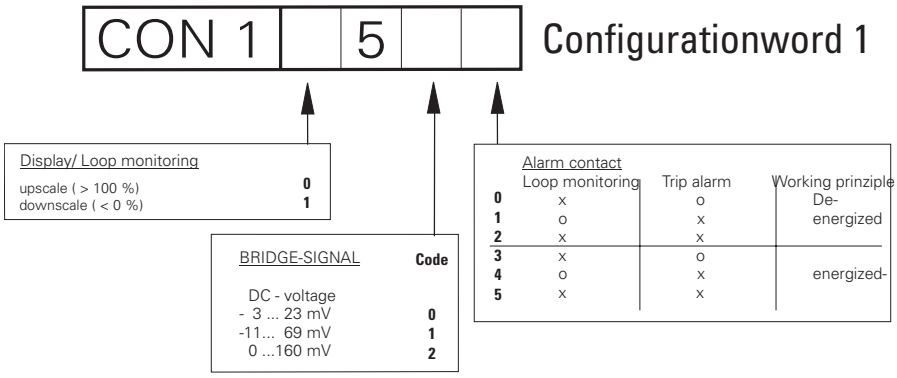
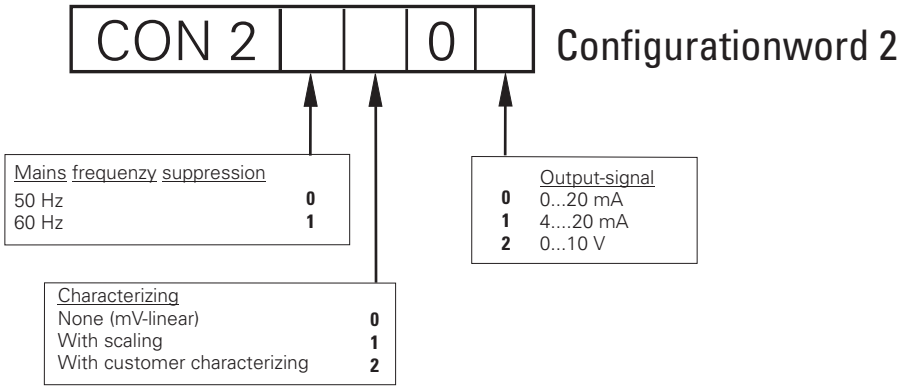


Fig. 6 Configuration word 2



ELECTROMAGNETIC COMPATIBILITY

Complies with EN 50081-1 and EN 50082-2 for unlimited use within rural and industrial areas.[3]

SAFETY CHARACTERISTICS

According to EN 61010-1

Excess-voltage category II
Pollution degree 2
Operating voltage range 300 V
Protective class I

CE-marking: According to European directives for "Electromagnetic compatibility" and "Electrical equipment use within specified voltage limits (safety characteristics).

EXPLOSION PROTECTION

No explosion protection

ORDERING INFORMATION

If not specified otherwise, the transmitter will be delivered with the following standard settings:

Standard version
CON1 0520, CON2 0001.
Range 0...160 mV. Input circuit monitoring upscale action. Switching output de-energized, set to span start and end. Hysterisis 5%, suppression 2s, filter time 0,1 s, bandwidth 5 mV.

GENERAL

Dimensions: 93 x 111 x 40 mm

Protection: Housing and terminals IP30

Electrical connection
screw terminals for max. 2,5 mm^2

Weight: 0,23 kg net

Mounting: 35 mm rail to DIN 46277 and wall

Mounting position
vertical
Dense mounting and temperatures ≥ 50 °C forced ventilation recommended.

ACCESSORIES

Operating notes: D / E / F
9499-040-57051

ORDERING DATA

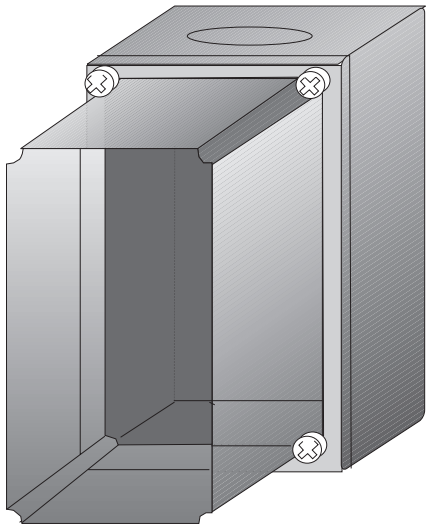
9	4	0	4	2	1	1	8	1	0		1

Standardconfiguration
Bridge supply 12 V
Mains 90...265 VAC 1
Battery 18... 32 VUC 2
Bridge supply 10 V
Mains 90....265 VAC 3
Battery 18...32 VUC 4

ACCESSORY

Description	Order-no.
Adapter for connection of UNIFLEX DMS to a RS232 interface of a laptop or PC	**9407-998-00001**
Engineering tool for setting of configuiration and parameters, read-out and documentation, base Windows from 3.11 On CD-ROM Licence (1x)	**9407-999-00801**
Field housing for UNIFLEX transmitter. Protection IP 67, with transparent lid. Cable gland PG 13,5.	**9407-290-01001**

Fig. 7 Field housing IP 67



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