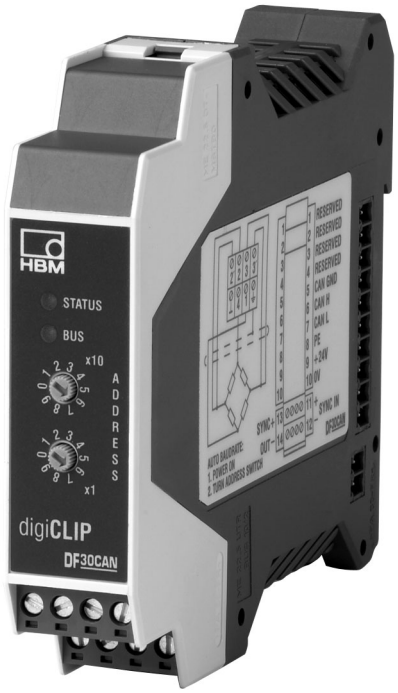
Data sheet

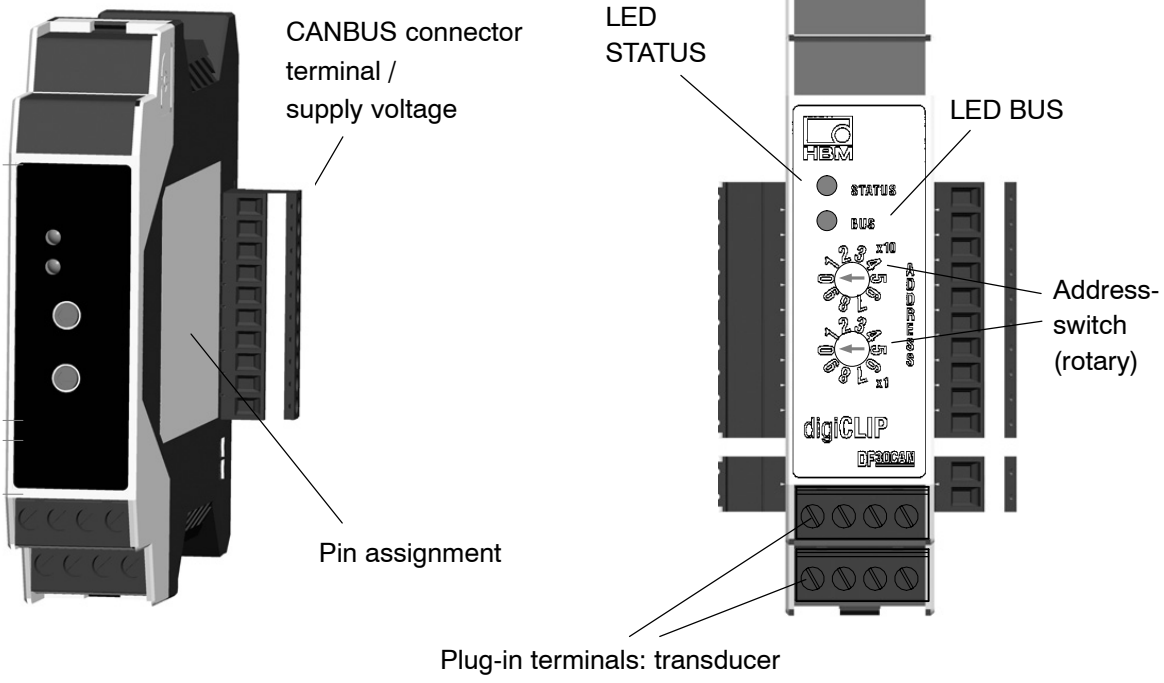
digiCLIP

DF30CAN



Special features

- **Digital amplifier for industrial automation tasks and production process monitoring**
- **600 Hz CF measurement technology with TEDS sensor recognition for SG full bridges**
- **Accuracy class, typically 0.05%**
- **Modular mounting on a DIN EN 50022 type DIN rail**
- **System bus with real-time capability for up to 99 modules**
- **Standardized CANopen CiA fieldbus decoupling**



Specifications

DigiClip			
Accuracy class		0.05, typically 0.1 in an industrial environment as per EN 61326, Annex A	
Power supply			
Supply voltage, Overvoltage and reverse polarity protection	V_{DC}	24	
Isolation voltage Potential separation between the supply bus and the transducer connection	V	500	
Permissible supply voltage range	V	18 ... 30	
Influence of supply voltage when there are changes in the specified range	%/V	< 0.001	
Power consumption, max.; incl. transducer	W	1.5	
Amplifier			
Carrier frequency	Hz	600 (591.9 Hz ± 100 ppm)	
Bridge excitation voltage UB, Peak-to-peak (± 10%)	V	2.5	1.0
Measuring range	mV/V	± 4	± 10
Connectable transducers SG full bridge	ohms	80 ... 5000	
Connection technique		4, 5 and 6-wire circuitry with single-wire open-circuit monitoring	
Permissible cable length between transducer and amplifier, max.	m	100	
Input resistance	MOhm	> 10	
Measurement frequency range, adjustable (see filter table)	Hz	0.05 ... 200	
Filter characteristics		Bessel, 4th order	
Noise voltage relative to input, for UB = 2.5 V, typical	µV/V	1.0 (at 100 Hz filter frequency) 0.05 (at 1 Hz filter frequency)	
Influence of ambient temperature for change of 10 K			
on the zero point (TK0)	µV/V	0.1	
on sensitivity (TKC)	%	0.05 f.s.	
Linearity deviation	% f.s.	0.005	
Long-term drift, without AutoCal	%	<0.001 (within 48 h)	
Communication interface			
Number of devices on the bus, max.		99	
Address settings		1 to 99 via rotary switch on front	
Protocol		CAN 2.0B, CANopen-compatible, CiA DS301, DS404	
Hardware bus link		Two-wire, as per ISO 11898	
Baud rate	kBits/s	1000 500 250 125 100 50	
Max. line length	m	25 100 250 500 600 1000	
Baud rate selection		Automatic recognition after change of address	
PDO transfer		Triggered by sampling rate, timing control or SYNC message	
Cycle time for time-driven triggering, Possibly restricted by chosen data types and filter frequency [1]	ms	0.85 ... 25000	
Signal conditioning			
A/D converter		Delta-Sigma, 24-bit	
Scaling accuracy	bits	32	
Sampling rate	1/s	1184	

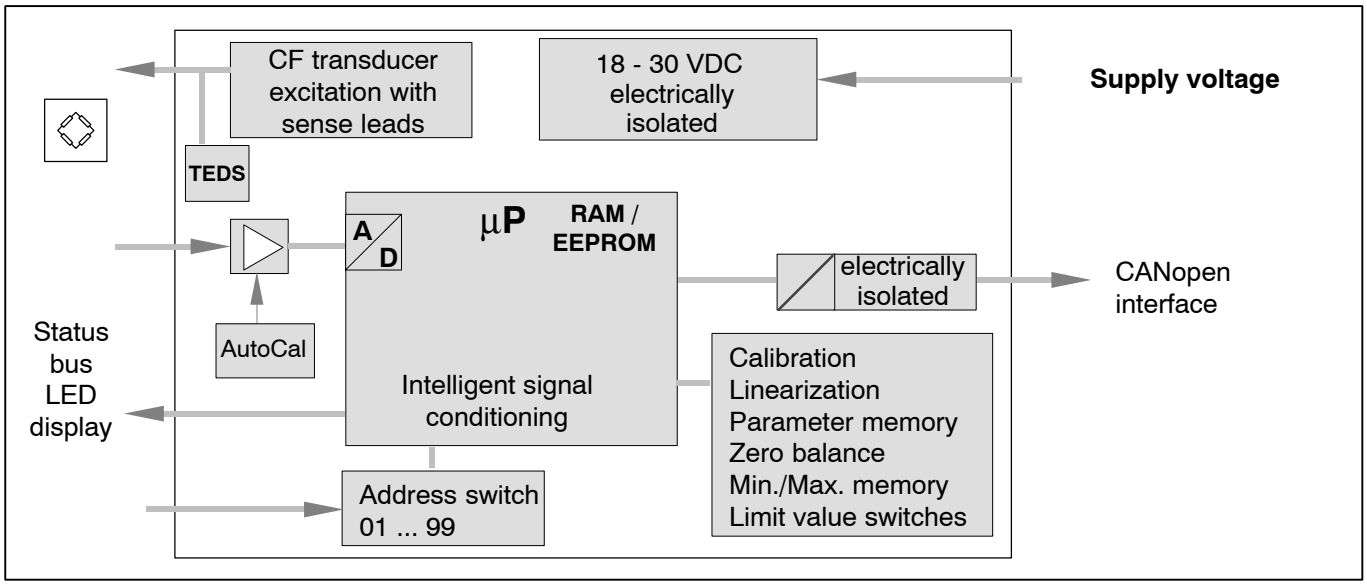
[1] Floating point: 2 measured values at 0.85 ms; integers: 4 measured values at 0.85 ms; filters: see table overleaf

Input of characteristic curve		TEDS, calibration, editing
Zero balance		over the entire measuring range
Tare balance		over the entire measuring range
Duration of balancing	ms	< 2
AutoCal	ms	< 300
Parameter memory		1 set as per CiA DS404, protected in the EEPROM
Limit value switches		
Definition		as per CiA DS404, ALARM block
Number		4
Functions		Switching threshold, hysteresis (2-point control), greater than, less than
Signal source (user-selectable)		gross, net, max, min, peak-to-peak
Hysteresis		adjustable over the entire measuring range
Update		at each measured value
Peak-value memory		
Number		3
Function		min., max., peak-to-peak
Update		at each measured value
Clearing peak-value memory	ms	< 2
Retaining the current measured value/peak value	ms	< 2
Current-value memory		Run /Hold
Ambient conditions		
Nominal temperature range	°C	0 ... +50
Operating temperature range	°C	-10 ... +60
Storage temperature range	°C	-20 ... + 70
Permissible rel. humidity, non-condensing	%	10 ... 90
Housing		
Material		Polyamide PA 6.6
Dimensions (WxHxD) without connections	mm	23 x 100 x 114
Weight, approx.	g	150
Mounting		Support rail, DIN EN 50022
Connection		Plug-in terminals
Degree of protection		IP20
Reliability		
MTTF (MIL-HDBK-217F, Feb. 1995)	hours	125000

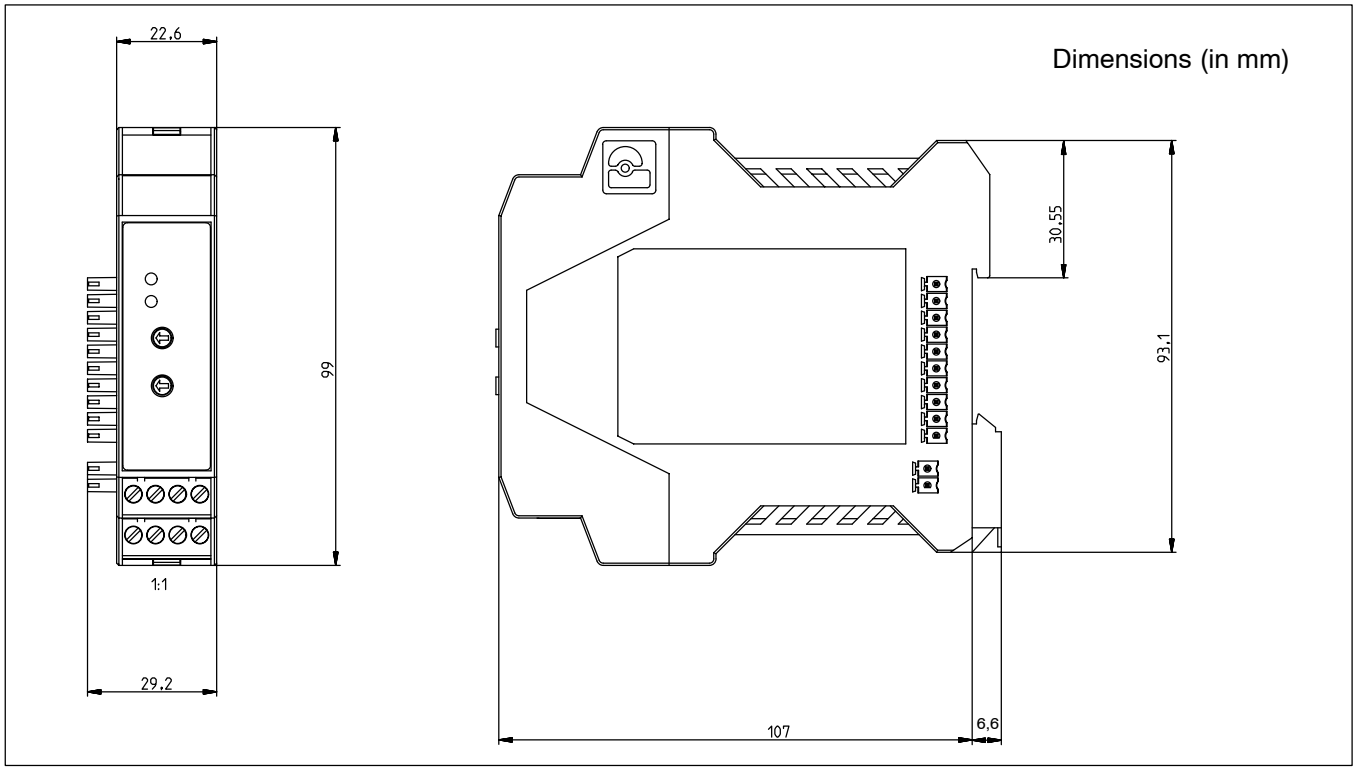
Filter data and sampling rate

Desired frequency	-1 dB (Hz)	-3 dB (Hz)	-20dB (Hz)	Phase delay (ms)	Sampling rate (s^{-1})	Min. cycle time (ms)
100 Hz	130	225	560	2.3	1184	0.85
50 Hz	48	82	220	4.6	1184	0.85
20 Hz	20	34	100	9.5	1184	0.85
10 Hz	10.5	18.6	56	16.6	1184	0.85
5 Hz	5.2	9.3	28	31	592	1.7
2 Hz	2.1	3.7	11.2	70	237	4.2
1 Hz	1.05	1.8	5.6	140	118	8.4
0.5 Hz	0.52	0.9	2.8	280	59	16.9
0.2 Hz	0.21	0.36	1.1	700	24	42.2
0.1 Hz	0.105	0.18	0.56	1400	12	84.5
0.05 Hz	0.052	0.09	0.28	2800	6	168.9

Block diagram



Dimensions



Accessories (not included in the scope of supply):

CAN implementation	
Setup toolkit for digiCLIP	Order no.: 1-DIGICLIP-SETUP
Connector set for digiCLIP modules (needed for two-tier installation in the control cabinet)	Order no.: 1-digiCLIP-ST
Coded connectors for sensor connection	Order no.: 3-3312.0404
Connection module for frontal assignment of the rear terminal strip (bus and voltage supply)	Order no.: 1-DF002

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