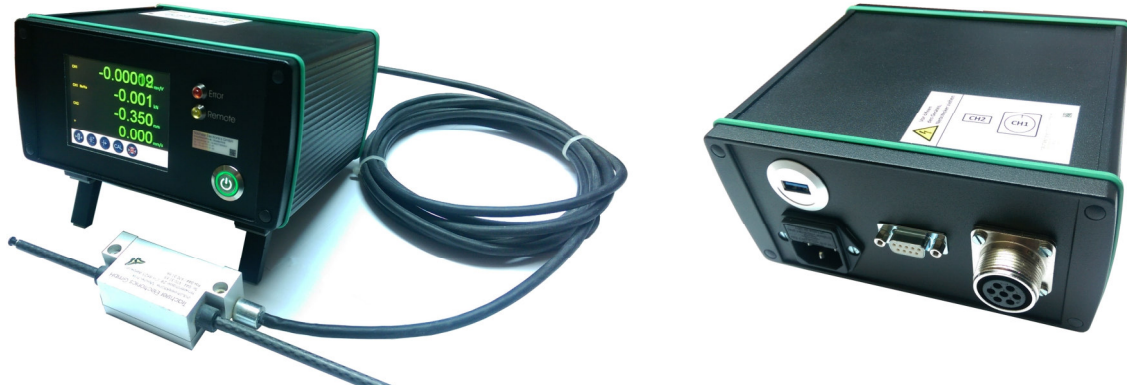




2 channel full bridge / incremental measuring amplifier A212U in desktop housing, with 3.2" TFT touch display and USB 2.0 interface, for static and dynamic measurements



The strain gauge full bridge input channel has a high common mode rejection ratio (CMRR). The low-noise 24-bit sigma-delta (Σ - Δ) AD converter, with low offset and gain drift (5nV/°C, 1ppm/°C), is synchronised by a frequency-stable clock ($\pm 0.2\%$), with low frequency tolerance ($\pm 0.1\%$)

In order to eliminate offset voltage errors, such as temperature-dependent thermoelectric voltages in soldered connections and plug contacts, charge injection through the conversion process, or EMI coupling, the Σ - Δ converter uses CHOPPING. The differential input to the modulator is alternately exchanged (CHOPPING) at the modulator output, and the measured value is inverted accordingly before the input to the digital filter. Both raw values (Ain+ - Ain-) + Voffset and -(Ain- - Ain+) + Voffset are averaged, whereby the offset voltage is mathematically omitted. The resulting 4-fold (with 50Hz suppression), or 3 times (with 60Hz suppression) lower measuring rate is negligible for some applications.

The incremental input (quadrature encoder input TTL) can be used with linear or rotary sensors. It is also possible to connect a reverberation or reflection sensor. The power supply is provided at the 9pin DSUB.

In linear or rotary mode, in addition to the distance / number of revolutions, the speed / rotation speed and acceleration are also determined. In reflection mode, the speed and the state (Hall or light barrier active) are also measured.

up to 8pcs. Output channels and limit value pairs selectable :

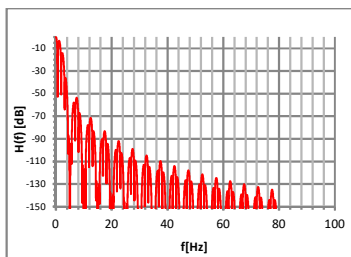
The measuring amplifier series uses 8pcs. Output channels that can be activated and assigned as required. These are output at the selected measuring rate between 0.00625...1200Hz. (Limit values in the measured value status). Selectable are :

CH1 [DMS - Channel]	CH2 [Incremental input]		
	in linear mode :	in rotary mode :	in reflection mode :
<ul style="list-style-type: none"> ✔ Gross, net, tare channel (user scaled) ✔ Bridge deviation [mV/V] ✔ Measured value [User scaled] ✔ AD converter raw count 	<ul style="list-style-type: none"> ✔ Path ✔ Speed [mm/s], or [mm/min] ✔ Acceleration [mm/s²], oder [mm/min²] ✔ Positive / negative peak value memory (user scaled) ✔ Unit temperature in °C 	<ul style="list-style-type: none"> ✔ Number of revolutions ✔ Rotational Speed [s⁻¹], or [min⁻¹] ✔ Acceleration ✔ Incremental counter reading 	<ul style="list-style-type: none"> ✔ Rotational Speed [min⁻¹] ✔ State - -

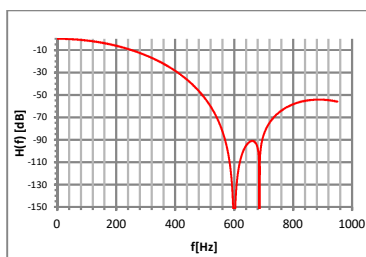
Multipoint Acclation and Approximation of Sensor - Nonlinearities :

The use of a multi-point user scaling (2 points to 11 points), or a 3rd degree polynomial function with 4 constants allows the approximation of a force-weight transducer, so that the relative deviation in [%] in the lower load range of the sensor is significantly improved. Nominal transducer values can be entered directly in [mV/V] in the setup programme.

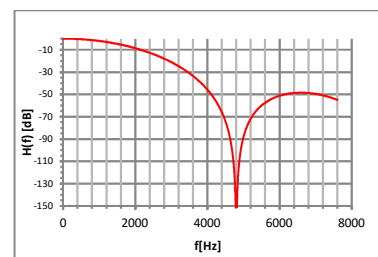
Measurement rate-dependent notch - filters : allow for high noise reduction and bandwidth.



Measuring rate 1.25Hz, bandwidth -3dB = 0.3Hz
 Noise reduction at 50Hz, -139dB



Measuring rate 600Hz, bandwidth -3dB = 140Hz



Measuring rate 4800Hz, bandwidth -3dB = 1200Hz



Technical data :

		A212U
Accuracy class		0.02
Bridge supply voltage DC	V	5
Connectable sensors : CH1 Strain Gauges full bridge 6-wire technology Maximum cable length Sensor connection	Ohm m	120...1000 20 MS 3102A 7pin sockets, shielded
CH2 TTL inkremental - Eingang Sensor Anschluss Encoder Versorgungsspannung		A, A\ , B, B\ , RM, RM\ , RM = referenzmark, or home - signal DSUB 9pol female (Newall standard) 5VDC and supply voltage
Measuring / bridge adjustment range [CH1]	mV/V	+/-7mV/V
AD converter type		Sigma-Delta (Σ - Δ)
Internal resolution	bit	24
Measuring range [CH2] linear mode rotary mode reflective mode	Bit Bit Revs.	2 ²⁴ 24 ² 0 ... 20'000min ⁻¹
User - scales per channel	CH1 / CH2 CH1	2 ... 11 Points, or polynomial function of 3rd degree with 4 constants
Filter Converter Digitalfilter		50Hz / 60Hz suppression selectable Notch - Filter (depending on measuring frequency)
Internal measuring frequency range	Hz	2 channels synchronous 0.625 ... 4800
Scaled data transmission	Hz	Measured values /s per channel with 4pcs. enabled output channels 0.625 ... 1200
* Linearity deviation [CH1]	%	<0.004
* Temperature influence per K [CH1] to zero on the measuring range	%	After 15 min operating time <0.005 <0.0025
Peak value memory		2 pcs. per output channel (user-scaled)
Limit values (in measured value status)		2 pcs. per output channel can be defined
Nominal temperature range	°C	0 ... +40
Supply voltage AC	V	83...264VAC, 50 / 60Hz
Display		3.2" TFT display with resistiv touch
Interface		USB 2.0
Protection class		IP 50
Dimensions [D * W * H]	mm	140 * 172 * 96
Weight	kg	≈1.5

* 2mV/V calibrated, 50Hz filter, chop on, 2.5Hz measuring rate