

Accessories

Diagnostic accessories

HENQ 1100



Part number

HENQ 1100 Analyzer for encoders

Description

The Baumer Hübner **EN**coder **Q**uality Measurement System **HENQ 1100** is a hand-held instrument for the testing of incremental encoders that produce HTL/TTL or sin/cos signals.

Fast signal processing also facilitates the detection of sporadic errors, such as those caused by interference in the signal leads or short voltage drop-outs in the power supply. The angular position and speed are in addition displayed continuously.

As well as Baumer incremental encoders, encoders from other manufacturers that put out TTL/HTL or sin/cos signals can also be connected.

Power is fed to the encoder either via the HENQ 1100 or externally. So the encoder can be run separately, disconnected from its normal supply, or one can tap into a system that is running.

The operation of the instrument is carried out through the built-in user friendly keypad and a 4-line LCD with background lighting.

The memory makes it possible to collect measurements from several encoders and evaluate them.

User-defined profiles can be used to program various thresholds as parameters, for instance:

- permissible phase deviation
- permissible pulse/pause ratio

Errors are signaled not only visually, through the LCD, but also acoustically, by a built-in buzzer. The HENQ 1100 can optionally be fitted with an accumulator (12 V block accumulator with integrated charging circuitry) that enables operation independently of the electrical supply for up to 5 hours. In accumulator operation, the encoder can still be supplied from the HENQ 1100.

Features

- Analyzer for encoders
- Continuous monitoring and display of encoder data (speed, angular position, position of the zero pulse, phase shift, pulse/pause ratio, voltage range etc.)
- Continuous error monitoring (elimination of signal disturbances, comparison of the nominal/actual number of pulses per turn, check of the quadrature coding)
- Individual error messages
- Windows applications software for the PC, for graphical display and statistical evaluation of the measurements
- Recording of measurements and error messages

Technical data

HENQ 1100

Voltage supply	9...30 VDC
Current consumption	≤500 mA
Permissible ambient temperature	-10...+50 °C
<u>Accumulator as option</u>	
Accumulator voltage	12 V nominal
Subthreshold warning	10 V
Charging time	5 hours
Operating time	~5 hours
Input	SUB-D female 15 pin
Outputs	SUB-D male 15 pin RS-485 (female 9 pin) Option: RS-232

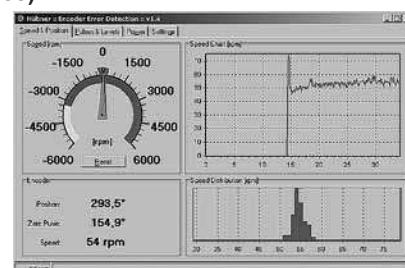
Encoder

Output frequency	≤250 kHz
Encoder power supplied from the HENQ 1100	$U_1 = U_B - 1 \text{ V}$ or $U_2 = 5 \text{ V}$
Current consumption with encoder power supplied from the HENQ 1100 *	≤300 mA
External supply voltage with measuring signal looped through	$U_1 = U_{REG1}$ or $U_2 = U_{REG2}$
Current consumption with external supply voltage and encoder signal looped through *	≤500 mA

* limited by polymer fuse

Data display via measurement program for PC or Laptop (RS-485 interface):

- Display of
- Angular position
 - Zero pulse position
 - Speed
 - Voltage and current
 - Error messages

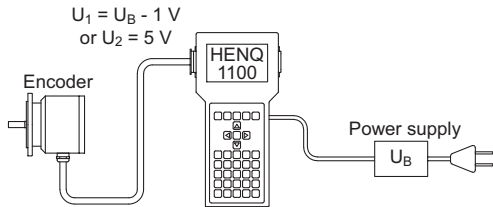


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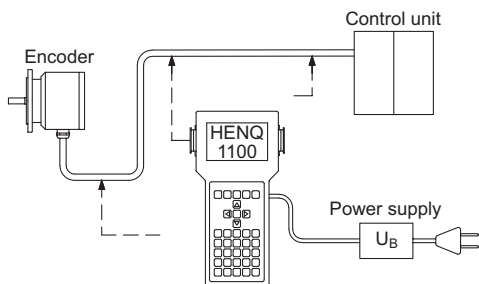
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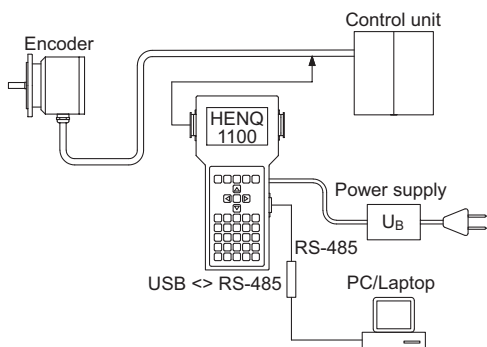
Connection examples



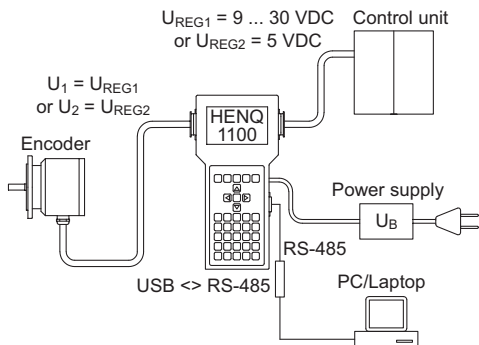
Encoder supply from the HENQ 1100



Error analysis through a step-by-step check of the test signal at various points in the signal path



Long-term monitoring by a PC to detect sporadic errors



Long-term monitoring with simultaneous filtering of the looped-through measuring signal

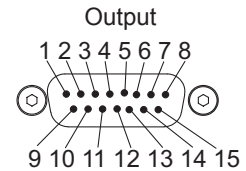
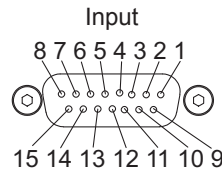
Terminal assignment

Input/Output SUB-D

Female/male, 15 pin

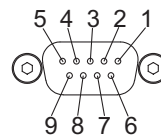
	Input Assignment female	Output Assignment male
Pin 1	A+ (K1)	A+ (K1)
Pin 2	A- ($\bar{K}1$)	A- ($\bar{K}1$)
Pin 3	B+ (K2)	B+ (K2)
Pin 4	B- ($\bar{K}2$)	B- ($\bar{K}2$)
Pin 5	R+ (K0) [zero pulse]	R+ (K0) [zero pulse]
Pin 6	R- ($\bar{K}0$) [zero pulse inv.]	R- ($\bar{K}0$) [zero pulse inv.]
Pin 7	n.c.	n.c.
Pin 8	n.c.	n.c.
Pin 9	$U_1 = 9 \dots 30 \text{ VDC}$	$U_{REG1} = 9 \dots 30 \text{ VDC}^*$
Pin 10	$U_1 = 9 \dots 30 \text{ VDC}$	$U_{REG1} = 9 \dots 30 \text{ VDC}^*$
Pin 11	$U_2 = 5 \text{ VDC}$	$U_{REG2} = 5 \text{ VDC}^*$
Pin 12	$U_2 = 5 \text{ VDC}$	$U_{REG2} = 5 \text{ VDC}^*$
Pin 13	GND	GND
Pin 14	GND	GND
Pin 15	GND	GND

* from control unit



RS-485 interface

	Assignment
Pin 1	B (D-)
Pin 2	A (D+)
Pin 3	B (D-)
Pin 8	A (D+)



The output signals of the HENQ 1100 are always differential! It is not possible to make a daisy-chain signal loop with sinewave signals.