KROHNE

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GR

MagCheck
In-situ verification

... for electromagnetic flowmeters (EMF)

- Complete on-site check of EMF systems without interrupting the process
- Plug-and-play, no additional power supply, batteries, etc. needed
- MagCheck software to evaluate data with history (database)
- No other devices required locally: no PC, no printer, no milliammeter, etc.
- Printout of verification certificates with confirmation of max. deviation 1% versus original calibration

MagCheck
MagCheck lets you check electromagnetic flowmeters (KROHNE EMFs) periodically for proper and accurate functioning.
This allows you to meet your in-house regulations e.g. based on ISO 9000, or official requirements easily and at low cost.

You can forget conventional test methods which cause process interruptions and lead to high costs through dismantling and subsequent calibration on external test rigs.

MagCheck easy verification

... electromagnetic flowmeters (EMF)

MagCheck verifies your EMFs in the field:

- Small, handy and portable, no batteries or other power sources needed,
- Stores the verification data of up to 70 measuring points,
- Checks EMFs easily, reliably and accurately, without interrupting the flow; the accuracy of signal converter, inputs and outputs, as well as functionability of the primary head,
- Directly retraceable to national and international standards, uncertainty < 0.1%,
- MagCheck software for data evaluation in the PC, compatible with Windows 95, 98, NT4 and 2000, allows trend analysis, error identification, plus printout of verification certificates,
- Confirms that the EMFs are within ± 1% of the original factory calibration.

Items supplied

- Carry case
- MagCheck
- RS 232 connection lead for PC to download verification data
- Operating instructions
- Adapter leads for the following KROHNE signal converters:
  IFC 010 K+F
  IFC 020 K+F
  IFC 090 K+F (excluding “i” and “EEx” versions)
  IFC 110 F (excluding “EEx” version)
- Power supply unit for MagCheck to connect to a PC
- MagCheck PC software for Microsoft Windows® 95 / 98 / 2000 and NT4 operating systems

Duration of a fully automatic test run
typically 15 minutes, assuming good accessibility.

Connection to the EMF (but not “EEx”)
No need to disconnect terminals or connected cables. Only solidly cabled connectors need to be replugged into the MagCheck.

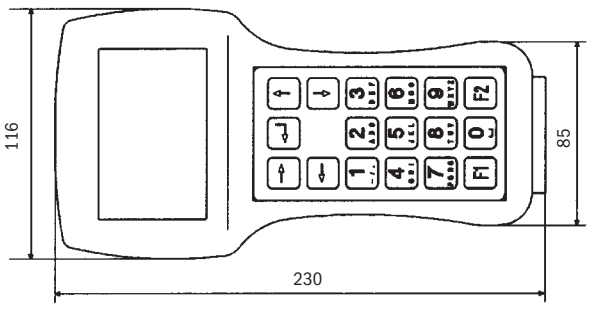
RS 232
interface

easy to connect
on-site:
plug and play

Evaluate data
with MagCheck
PC program in
the office.

Clear trends, early detection of drifts, printout of verification data.

Dimensions and weights



all dimensions in mm

Height: 100 mm

Size of case (L × H × W): 417 × 175 × 290 mm

Weight of MagCheck: 0.49 kg

Weight of case: 5 kg

The responsibility as to the suitability, intended use and corrosion-resistance of the materials used in their construction rests solely with the purchaser.

Technical Data

Operating data	
Permissible operating temperature	+ 5 to +40 °C
Permissible storage temperature	-20 to +60 °C
Relative humidity	≤ 80%, moisture condensation not permissible
Housing material	polyamide
Display	LCD, 4 lines plain text in German, English or French
Keypad	rugged alphameric sealed keypad
Protection category (IEC 529 / EN 60 529)	IP 40
Power supply	
for device verification	from the field current of the device under test (no batteries required)
for downloading at the PC	from the supplied plug-in power supply unit, nominal voltage 100-240 V AC / 50-60 Hz / approx. 5 W
Storage capacity for automatic verification	verification data of up to 70 measuring points MagCheck indicates the number of allocated memory locations, locations deallocated after downloading
Reference conditions	
MagCheck temperature	+18 to +25 °C
Ambient temperature	+18 to +25 °C
Relative humidity	≤ 80 %
Warm-up time, acclimatization	10 minutes

Measured data and accuracy of MagCheck	**Tolerance of MagCheck at reference conditions**	**Error limits for acceptance of device under test**
Field current		
Current amplitude (nom. 125 / 250 mA)	± 0,1 % of value,	± 0,3 % of value,
Feldfrequenz	measurement for information only	testing of field frequency setting, changes produce a warning message
Linearity and accuracy of ADC		
ADC at 25 %	± 0.1 %	v ≥ 1 m/s; ± 0.4 % of meas.val.
ADC at 50 %	± 0.1 %	
ADC at 75 %	± 0.1 %	v < 1 m/s; ± (0.2 % of meas.val. + 2 mm/s)
ADC at 100 %	± 0.1 %	
all other values in manual calibration test	± 0.1 %	
Calibration points of mA output		
4 mA point	± 22 µA	± 0.2 % of full-scale range (22 mA)
20 mA point	± 22 µA	± 0.2 % of full-scale range (22 mA)
all other values in manual calibration test	± 22 µA	± 0.2 % of full-scale range (22 mA)
Pulse output		
Test at 500 Hz	± 0.1 %	± 0.2 %
At primary head,		
automatic verification only		
Coil resistance	± 1 % or ± 1 Ω	40 Ω < acceptable < 250 Ω
Coil insulation	± 5 %	> 2 MΩ
Electrode resistance when meas. tube filled	± 1 % or ± 50 Ω	150 Ω < acceptable < 250 kΩ
Electrode resistance when tube empty	± 5 %	> 6 MΩ

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Technical Data

Function and applications

Automatic verification of ...

- KROHNE electromagnetic flowmeters (EMFs) with IMoCom signal converters
- IFC 010 K+F
- IFC 020 K+F+E*
- IFC 090 K+F (but not “i”)
- IFC 110 F
- IFC 110 PF (TIDALFLUX, partially filled, without testing level measurement)
- IFC 210 E*
- with all connected primary heads of the IFS series and M 900

* **Please note:** special adapter (connection) leads are required for all systems and signal converters marked with “*” currently not included with supply, special fabrication.

Manual testing of ...

- KROHNE signal converters, including older series*, but excluding testing of primary heads, such as
- T 900 F+E
- SC 80 A+AS / SC 100 A+AS
- IFC 080 K+F / IFC 200 / IFC 200 E / AQUAFLUX 070
- all above signal converters with IMoCom interface

Not suitable for ...

- all systems of hazardous duty (Ex) design *
- flowmeters K 300 / K 310 / CAPAFLUX / BATCHFLUX / ALTOFLUX 2W and all systems of hazardous-duty (Ex) design
- all systems with signal converters SC 150 F / F 200 (DELAFLUX) / TIV 60 / TIV 500 (a.c. field) / IFC 090 K or F of “i” design

Scope of test

with automatic verification

<u>IMoCom signal converter</u>

- Field current and field frequency
- Primary signal processing (input amplifier, analog-digital conversion at 25%, 50%, 75%, 100% of set measuring range)
- Active curent output at factory calibration points
- Pulse output at 50% of set full scale range
- The MagCheck PC program identifies and signals changes to the set values between verifications that affect measuring accuracy

<u>Primary head:</u>

- Electrode resistances
- Insulation resistance of the field coils
- Resistance of field coils

Manual testing

<u>KROHNE signal converters only</u>

- Field current and field frequency at selectable flow values (0-100% of set full-scale range, adjustable in steps of 0.1%):
- Primary signal processing (input amplifier, analog/digital converter)
- Current output
- Pulse output

additionally for IMoCom signal converters:

- Hardware info
- Status info of ADC, display, I/O