


Technical data

Mechanical parameters

Dimensions of box (w x h x d):	126 x 141 x 77 mm
Box material:	Aluminium alloy
Weight of device:	around 1.3 kg

Environment

- Operating conditions

Protection of device:	IP65 - according to EN 60529
Intrinsic safety:	 II 2G EEx ia IIC T4 / T3 - according to EN 50014, EN 50020 (T4 / T3, according to ambient temperature)
Certificate number:	FTZÚ 05 ATEX 0153X
Classification of environment:	Zone 1, Zone 2 - according to EN 60079-10
Electromagnetic compatibility:	EN 61000-6-2 Immunity for industrial environments
Operating temperature:	-25 ÷ +60 °C (standardly), -40 ÷ +60 °C (on request)
Atmospheric pressure:	80 ÷ 115 kPa
Relative humidity:	10 ÷ 93 % (without condensation)
Classification of environmental conditions:	Groups IE36 - according to EN 60721-3-3
Protection against dangerous touch:	Small voltage

- Storage conditions

Storage temperature:	-40 ÷ +80 °C
Atmospheric pressure:	80 ÷ 115 kPa
Relative humidity:	10 ÷ 93 % (without condensation)

Power supply

Battery type:	LP-03 3.6 V / 16.5 Ah (<i>lithium, intelligent</i>)
Power supply range:	2.9 V up to 3.7 V
Battery life:	min. 6 years (<i>depending on use</i>)
Measurement of battery life:	yes (<i>warning message at 10% remaining capacity</i>)

External power supply

Power supply range:	4.7 up to 10.0 V - in hazardous area 4.7 up to 15.0 V - in safe area
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Access parameters from the aspect of JB: (intrinsic safety)
 Connection: $U_i = 10 \text{ V}$, $P_i = 0.46 \text{ W}$,
 $C_i = 0.013 \text{ } \mu\text{F}$, $L_i = 0 \text{ mH}$
 connector Binder 713, type 99-1430-814-04
 (female cable connector, metal) use shielded cable
 positive pole – pin no. 1, negative pole – pin no. 3, cable shielding – connector case

Note:

The external DC power supply must fulfill the requirements of intrinsic safety and it must provide sufficient filtering of the high voltage / high energy disturbances which may exist in distribution networks.

For example, ELGAS JBZ-01 (DATCOM-K2 ...) power supply is available for powering the device from 230V AC network.

Accuracy of device

Relative error (at ambient temperature)

Base volume:	< 0.50 % of measured value, (typically < 0.15 % at 20°C)
Primary volume:	errorless
Mathematical element:	< 0.10 %
Base flow:	< 1.00 %
Primary flow:	< 1.00 %
Annual additional error of base volume:	< 0.10 %

Calculation of compressibility methods

fixed	in the range from 0.9 up to 1.1
calculated	- according to standard AGA NX-19 - according to standard AGA NX-19 mod - according to standard SGERG-88 - according to standard AGA8-G1 - according to standard AGA8-G2

INPUTS - OUTPUTS

Measurement of pressure

Transmitter:	Measurement of absolute pressure
Pressure range:	80 ÷ 520 kPa, 80 ÷ 300 kPa 200 ÷ 1 000 kPa. 200 ÷ 520 kPa 400 ÷ 2 000 kPa 300 ÷ 1 000 kPa 700 ÷ 3 500 kPa 1 400 ÷ 7 000 kPa.
Accuracy of measurement:	□ 0.25 % of measured value, (typically 0.15 % at 20°C)
Maximum overload capacity:	125 % upper limit of measurement range

Measurement period: 10, 15, 20 and 30 s - at battery operation,
2 s - at power supply from external supply source
Pressure connection: tube Ø6 mm,
connection: ERMETO M12 x 1.5

Measurement of temperature

Sensor: Pt1000
Temperature range: -25 ÷ +60 °C (standardly),
-40 ÷ +60 °C (on request)
Accuracy of measurement: □ 0.25 °C, typically 0.15 °C
Measurement period: 10, 15, 20 and 30 s - at battery operation,
2 s - at power supply from external supply source
Length of sensor: 100 mm
Diameter of sensor: 5.5^{+0.1} mm
Length of cable, standard: 2.5 m
max.: 12 m

Note::

Pressure converter and temperature sensor are connected through connector inside of device. Their exchange is feasible only in an authorized centre.

Pulse input

Type of signal: non-potential output of gas meter:
- reed contact,
- Wiegand contact
- control pulse input or binary input (according to user default)
No-load voltage: max. 3.7 V
Short circuit current: max. 4 µA
Max. frequency: 4 Hz
Time constant of filter: 20 ms
Pulse width: □ 40 ms
Gas meter factor (input): 100, 10, 1.0, 0.1, 0.01 m³/pulse
Length of cable: 2.5 m standardly
12 m maximally

Input for tamper contact of gas meter

Type of signal: non-potential input (reed contact)
No-load voltage: max. 3.7 V
Short circuit current: max. 4 µA
Activation: closed or open
(tampering must last longer then one measurement period)

Pulse outputs and error state signal

Operating voltage: 3.6 ÷ 30 V (max. 28V in hazardous area see chapter **Chyba! Nenalezen zdroj odkazů.**)

Operating current: 1 µA ÷ 100 mA

Parameters of circuits for JB: $U_i=28$ V, $I_i=93$ mA, $P_i=0.67$ W,
(intrinsic safety) $L_i=0$ mH, $C_i=0$ µF

a) Output pulses of primary volume V

Pulse width (contact on): 100 ms

Output factor Kv1: selectable 1, 10, 100

Pulse of primary volume: 1 output pulse ≈ 1 input pulse / Kv1

b) Output pulses of base volume Vb

Pulse width (contact on): 100 ms

Output factor Kv2: selectable 1, 10, 100

Pulse of base volume: 1 output pulse ≈ 1 input pulse x C/Kv2

c) Output of error state signal

active state: output on

course of signal in active state (selectable): - static level, or
- pulse sequence (of selectable width)

pulse width (at pulse sequence): 1 s up to 25 s
(start of pulses comes with measurement period)

Possibility of external power supply: yes

Note:

Connection of pulse outputs and external power supply of alarm output must be carried out through Zener barrier or using certified separators in hazardous area (see chapter 3.3).

Communication

Communication speed (selectable): 19.2, 9.6, 4.8 kbit/s
(in use of optical head speed 19.2 kbit/s can be used only with optical head HIE-03)

Communication protocols: - alphanumeric
- ELGAS ver. 2
- Modbus (for reading only)
(device automatically recognizes communication protocol according to incoming signal)

Optical head communication

Used standard: EN 62056-21 for mechanical version

Communication RS 232

Connection, connector: Cannon 9F (IP 65, type FWDF09S-K413)
cable: max. 15 m

Input voltage: max. ± 15 V (max. ±10 V in hazardous area see chapter **Chyba! Nenalezen zdroj odkazů.**)

Communication RS 485

Connection, connector:	Cannon 9F (IP 65, type FWDF09S-K413)
cable:	max. 100 m
Input voltage:	max. ± 15 V (<i>max. ± 10 V in safe area see chapter Chyba! Nenalezen zdroj odkazů.</i>)

ARCHIVES

Data archive

Number of records:	25 344 standard format (34 months at 60 min. record) 11 264 extended format (15 months at 60 min. record)
Storage period:	5, 10, 15, 20, 30, 60 min
Mode when full:	cyclic overwriting
Standard format:	date and time, values V, V _b , eV, eV _b , average temperature, average pressure, status1
Extended format:	standard format, minimal and maximal temperature, minimal and maximal pressure, maximal immediate primary and base flow, average value C, average value K, status2, remaining capacity of battery

Daily archive

Number of records:	3 072 (8 years)
Stored values:	extended format
Mode when full:	cyclic overwriting

Monthly archive

Number of records:	21 (<i>depends on manipulation with the mode switch paragraph Chyba! Nenalezen zdroj odkazů.</i>)
Up-dating:	1 hour
Stored values:	gas meter factor, values V, V _b , eV, eV _b , day, time and value of max. actual flow, day and value of max. base volume per day, day and hour and value of max. base volume per hour, accumulated status
Mode when full:	cyclic overwriting

Status archive

Number of records:	around 500
Stored values:	change of error states
Mode when full:	cyclic overwriting

Archive of setting

Number of changes in parameters:	more than 500 (<i>according to type of settings</i>)
Stored values:	operator code, day and time, values V, V _b , eV, eV _b , state before and after change

Mode when full: stop + indication of error

Min., max. values

Stored values:
(can be erased)

date, time and value of the maximal minimal pressure
date, time and value of the maximal minimal temperature
date, time and value of the maximal primary flow

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