

Micromann UPI Series

Analogue frequency converter with auxiliary power supply and alarm monitoring

Devices in the Micromann UPI Series convert analogue current and voltage signals to a proportional frequency. Measurement errors (which can occur with low input frequencies) are eliminated with a adjustable frequency suppression. In addition, a quadratic function linearizes the signals.

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External two-wire measuring transducers can be supplied with power directly from the analogue frequency converter. An alarm output is available for monitoring the input signal.

The four-digit LED display is universally scalable.

The selected engineering units are automatically applied for all parameters.

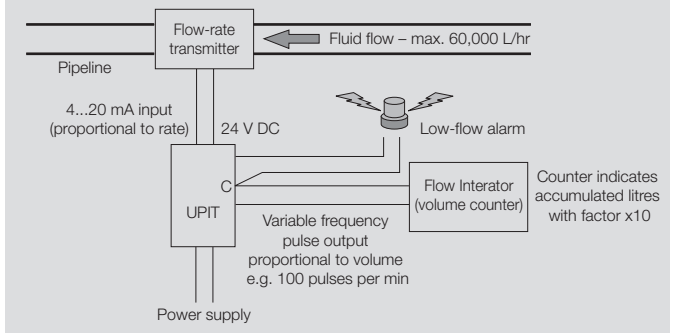
The user-friendly software makes setting up operating parameters very easy. The necessary parameters are chosen using the display and keypad. All modules are completely electrically isolated to 2 kV.

The housing can be snapped onto a DIN TS 35 or TS 32 mounting rail. The pluggable screw connection is located on the front.

Technical features:

- Conversion of analogue current/voltage signals to a proportional frequency
- Power supply for external measuring transducers or sensors
- A quadratic function suppresses low frequencies and linearises the signals
- An alarm channel with LED status display
- LED display in engineering units
- Complete electrical isolation
- DC power supply

Typical application of Micromann UPI



Common technical data

| Input | |
|---|---|
| Type | Analogue current/voltage signals |
| Input signal limits | -55...+55 mA / -55...+55 V |
| Smallest received measuring span | 1 mA or 1 V |
| Input resistance | 22 Ω (current input), 1 MΩ (voltage input) |
| Resolution | 1 μA/1 mV per bit |
| Linearisation | Linear or √ |
| Supply voltage | 24 V DC (up to 25 mA) |
| Display | |
| Type | 4-digit display |
| Display range | 0 to 9999 |
| Display value | Output frequency per sec. / min. / hour |
| Status indicator | Trip 1 / Processor status |
| General information | |
| Supply voltage | 12...50 V DC |
| Power input | 6 W @ 24 V DC |
| Accuracy | < ± 0.1 % typically |
| Linearity | < ± 0.1 % typically |
| Repeat accuracy | ± 0.05 % of signal range |
| Humidity | 0...90 % (no condensation) |
| Temperature coefficient | ≤ 0,02 % / °C |
| Long-term drift | 0.1 % / 10,000 h |
| Step response time | 320 ms (10...90 %) programmable from 250 ms...32 sec |
| Scanning rate | 5 per sec. |
| Impulse withstand voltage | 4 kV (1.2/50 μs) |
| Isolation voltage | 2 kV between ports |
| Data backup | ≥ 100 years |
| Operating temperature / storage temperature | 0 °C...+60 °C / -25 °C...+70 °C |
| EMC standard | DIN EN 61326 |
| Approvals | CE, cULus |

Connections

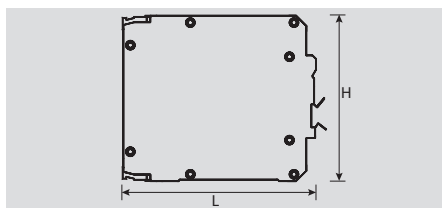
| Terminal | Signal | |
|----------|------------------------------------|--------------------------|
| 1 | 24 V DC | Inputs (current/voltage) |
| 2 | Signal + current | |
| 3 | Signal - | |
| 4 | Signal + voltage | |
| 5 | Not used | Configuration |
| 6 | | |
| 7 | Connections for changing setup | |
| 8 | | |
| 9 | 0 V | Supply voltage |
| 10 | 12...50 V | |
| 11 | Depending on the individual module | |
| 12 | | |
| 13 | | |
| 14 | Not used | |
| 15 | | |
| 16 | | |
| Housing | PE connection direct on housing | |

MANN SERIES - Signal converters

Micromann UPI Series

Analogue frequency converter for all standard current and voltage signals

- Frequency pulse output
- 24 V DC supply of the active input device
- Integrated linearization
- Pluggable connection terminals

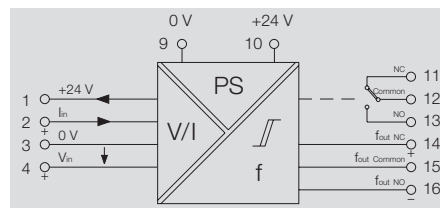


UPIR

Low frequency output [relay]



- Frequencies up to 25 Hz
- 1-pole change-over switch with relay contact/frequency output and alarm channel



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Technical data

Output

Type
Max. output frequency
Time ranges
Insulation

Alarm

Type
Relay triggering
Reset
Alarm function
Dead time
Range of adjustment
Switching current

Frequency-controlled relay output (CO)
25 Hz
per sec, min, h
Fully insulated

Relay output (change-over)
Adjustable, energised or de-energised coil
Manual or automatic
delayed 0...4200 s
1 digital step
All values in display range
3 A @ 240 V AC (resistive load)
3 A @ 24 V DC / 110 V AC (resistive load)

Connections

| Terminal | Signal | |
|----------|-----------------|------------------|
| 11 | Normally closed | Alarm output |
| 12 | Common | |
| 13 | Normally open | |
| 14 | Normally closed | Frequency output |
| 15 | Common | |
| 16 | Normally open | |

Data of Housing

Clamping range (rating- / min. / max.) mm²
Type of connection / Terminal rail
Type of Housing / Weight
Length x width x height mm

1.5 / 0.5 / 2.5
Screw connection / TS 35 + TS 32
Anodized aluminium enclosure / 500 g
120 x 46 x 97

Note

PE connection direct on enclosure

Ordering data

| Type | |
|---------------------|--|
| Frequency converter | |
| Special adjustment | |

| Type | Qty. | Order No. |
|--------------|------|------------|
| UPIR | 1 | 7940010908 |
| UPI Variabel | 1 | 8945110000 |

Note

Additional input and output versions available on request

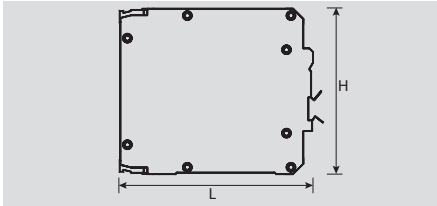
Accessories

Note

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- 24 V DC supply of the active input device
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- Pluggable connection terminals

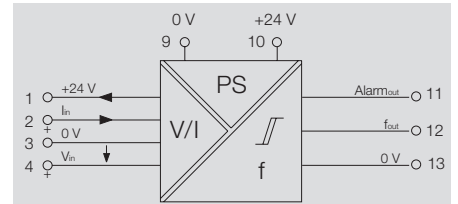


UPIT

High-frequency output [Transistor]



- Frequencies up to 1 kHz
- Open collector-transistor output with alarm channel



Technical data

Output

Type
Max. output frequency
Resolution
Time ranges
Insulation

Alarm

Type
Relay triggering
Reset
Alarm function
Dead time
Range of adjustment
Nominal switching current
Nominal switching voltage

Frequency-controlled transistor output
999.9 Hz
2 μ s
per sec, min, h
Common negative return of alarm output and frequency output

Transistor output
Adjustable transistor ON or OFF
Manual or automatic
delayed 0...4200 s
1 digital step
All values in display range
200 mA
max. 50 V DC

Connections

| Terminal | Signal |
|----------|------------------------|
| 11 | Alarm output |
| 12 | Frequency pulse output |
| 13 | 0 V |

Data of Housing

Clamping range (rating- / min. / max.) mm²
Type of connection / Terminal rail
Type of Housing / Weight
Length x width x height mm

1.5 / 0.5 / 2.5
Screw connection / TS 35 + TS 32
Anodized aluminium enclosure / 500 g
120 x 46 x 97

Note

PE connection direct on enclosure

Ordering data

Type
Frequency converter
Special adjustment

| Type | Qty. | Order No. |
|--------------|------|------------|
| UPIT | 1 | 7940015988 |
| UPI Variabel | 1 | 8945110000 |

Note

Additional input and output versions available on request

Accessories

Note