

Programmable f/I-f/f converter

5225A

- Pulse conditioning
- Frequency generator
- Concurrent f/I and f/f function
- Analog current and voltage output
- PNP / NPN output, optional relays
- Programmable by PC and Loop Link



Advanced features

- The 5225 transmitter can be configured with a standard PC and the Loop Link communications unit, or delivered fully configured.

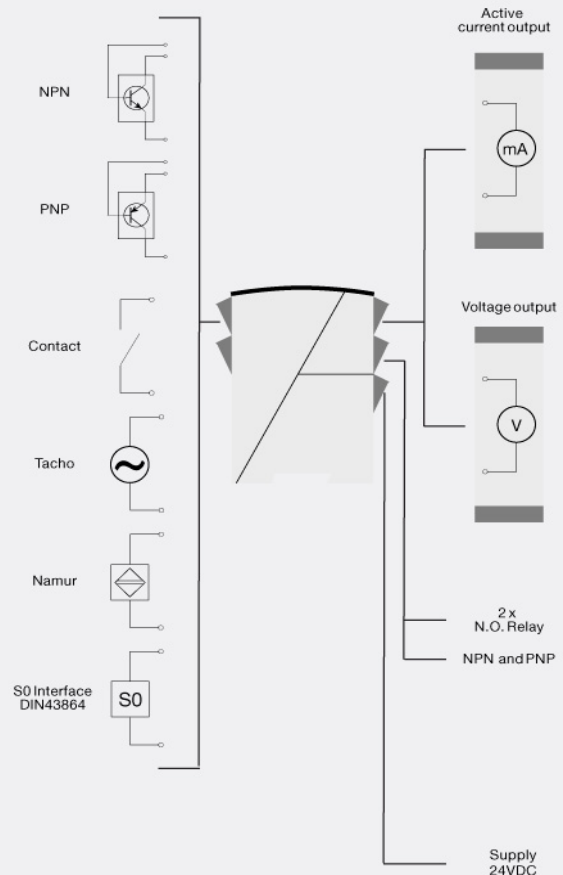
Application

- The f/I function performs frequency to current and voltage conversion.
- The f/f function can be used for pulse division or multiplication and as a buffer collecting fast pulse trains.
- The concurrent f/I and f/f functions enable a scaled digital output signal in conjunction with the analog output.
- The frequency generator function is used as e.g. a time base or clock generator.
- Input and supply polarity reversal protection.
- Programmable digital outputs including NPN, PNP or relay options.

Technical characteristics

- 4 front LEDs, indicating f in active inputs (not NPN), Dig.out. 1 (NPN or relay 1) and Dig.out 2 (relay 2) outputs, and a NAMUR input error signal.
- Analog current output can be configured to any current within 0...20 mA range.
- Voltage output range is selectable between 0...10 VDC and 0...1 VDC by use of internal jumpers.
- Input range:
Frequency: 0...20,000 Hz
Sensor types: NAMUR, tacho, NPN, PNP, TTL, S0
- Output range:
Current and voltage output: 0...20 mA / 0...10 V
Relay outputs: 0...20 Hz
NPN and PNP output as f/f: 0...1000 Hz
NPN and PNP output as generator: 0...20,000 Hz

Applications



Order:

| Type | Output |
|-------|---------------------------|
| 5225A | Analog + NPN / PNP : 1 |
| | Analog + relay output : 2 |

Environmental Conditions

| | |
|------------------------------|----------------------|
| Operating temperature..... | -20°C to +60°C |
| Calibration temperature..... | 20...28°C |
| Relative humidity..... | < 95% RH (non-cond.) |
| Protection degree..... | IP20 |

Mechanical specifications

| | |
|----------------------------|---------------------------------------|
| Dimensions (HxWxD)..... | 109 x 23.5 x 130 mm |
| Weight approx..... | 190 g |
| DIN rail type..... | DIN 46277 |
| Wire size..... | 1 x 2.5 mm ² stranded wire |
| Screw terminal torque..... | 0.5 Nm |

Common specifications**Supply**

| | |
|---------------------------------|-----------------|
| Supply voltage..... | 19.2...28.8 VDC |
| Max. required power..... | 3.5 W |
| Internal power dissipation..... | 1.7 W |

Isolation voltage

| | |
|---|-------------------------|
| PELV/SELV..... | IEC 61140 |
| Warm-up time..... | 30 s |
| Power-up delay..... | 0...999 s |
| Programming..... | Loop Link |
| Signal / noise ratio..... | Min. 60 dB |
| Response time, analog..... | < 60 ms + period |
| Response time, digital output..... | < 50 ms + period |
| Response time, concurrent f/I and f/f..... | < 80 ms + period |
| Signal dynamics, output..... | 16 bit |
| Effect of supply voltage change..... | < ±0.002% of span / %V |
| Auxiliary voltage: NAMUR supply..... | 8.3 VDC ±0.5 VDC / 8 mA |
| S0 supply..... | 17 VDC / 20 mA |
| NPN / PNP supply..... | 17 VDC / 20 mA |
| Special supply (programmable)..... | 5...17 VDC / 20 mA |
| Temperature coefficient..... | < ±0.01% of span / °C |
| Linearity error..... | < 0.1% of span |
| EMC immunity influence..... | < ±0.5% |

Input specifications**Common input specifications**

| | |
|---|-----------------------------------|
| Max. offset..... | 90% of selected max. frequency |
| Measurement range..... | 0...20 kHz |
| Min. measurement range..... | 0.001 Hz |
| Low cut-off frequency..... | 0.001 Hz |
| Max. frequency, with input filter ON..... | 50 Hz |
| Min. period time with input filter ON..... | 20 ms |
| Input types..... | NAMUR acc. to DIN 19234 |
| Input types..... | Tacho |
| Input types..... | NPN / PNP |
| Input types..... | TTL |
| Input types..... | S0 acc. to DIN 43864 |

Output specifications**Common output specifications**

| | |
|--------------------|----------------------------------|
| Updating time..... | 40 ms for concurrent f/I and f/f |
| Updating time..... | 20 ms |

Current output

| | |
|------------------------------|-------------------------|
| Signal range..... | 0...20 mA |
| Min. signal range..... | 5 mA |
| Load (@ current output)..... | ≤ 600 Ω |
| Load stability..... | ≤ 0.01% of span / 100 Ω |
| Current limit..... | < 23 mA |

Voltage output

| | |
|------------------------------|------------|
| Signal range..... | 0...10 VDC |
| Min. signal range..... | 250 mV |
| Load (@ voltage output)..... | ≥ 500 kΩ |

Relay output

| | |
|--------------------------------|---------------------|
| Max. switching frequency..... | 20 Hz |
| Isolation, test / working..... | 3.75 kVAC / 250 VAC |
| Max. voltage..... | 250 VRMS |
| Max. current..... | 2 AAC |
| Max. AC power..... | 500 VA |
| Max. load at 24 VDC..... | 1 A |

| | |
|-------------------------|-----------------------------------|
| Other output types..... | Active outputs (NPN / PNP) |
| Other output types..... | f/f converter output |
| Other output types..... | Frequency generator |
| of span..... | = of the presently selected range |

Observed authority requirements

| | |
|----------|----------------|
| EMC..... | 2014/30/EU |
| LVD..... | 2014/35/EU |
| EAC..... | TR-CU 020/2011 |