Programmable LED indicator

5715

- 4-digit 14-segment LED display
- Input for mA, V, Ohm, RTD, TC and potentiometer
- 4 relays and analog output
- Universal supply
- Programmable via front keys and PC

Application

- Display for digital readout of current / voltage / resistance / temperature or 3-wire potentiometer signals.
- Process control with 4 pairs of potential-free change-over relays and analog output.
- For tank level control, with the possibility of customer linearization ensuring correct level measurement and control in non-linear tanks.

Technical characteristics

- 4-digit LED indicator with 13.8 mm 14-segment characters. Max. display readout -1999...9999 with programmable decimal point and relay ON / OFF indication.
- All standard operational parameters can be adjusted to any application by way of the front function keys. When programming is carried out by way of a PC and the configuration program PReset, additional configuration options are available, such as customer-defined linearization and special input signals.
- Help texts in eight languages can be selected via a menu item.
- A menu item allows the user to minimize the installation test time for the relay outputs by activating / deactivating each relay independently of the input signal.

Mounting / installation

- To be mounted in panel front. The included rubber packing must be mounted between the panel cutout hole and the display front to obtain a protection degree of IP65 (type 4X). For extra protection in extreme environments, PR5715 can be delivered with a specially designed splash-proof cover as accessory.

Applications

Input signals:

Output signals:

Supply:

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Environmental Conditions
Operating temperature.............................. -20°C to +60°C
Calibration temperature............................ 20...28°C
Relative humidity........................................ < 95% RH (non-cond.)
Protection degree (mounted in panel).............. IP65 / Type 4X, UL50E

Mechanical specifications
Dimensions (HxWxD)........................................ 48 x 96 x 120 mm
Cut out dimensions........................................ 44.5 x 91.5 mm
Weight approx............................................. 260 g
Wire size, pin 41-46 (max.).......................... 1 x 1.5 mm² stranded wire
Wire size, others, max.................................. 1 x 2.5 mm² stranded wire
Vibration..................................................... IEC 60068-2-6
2...13.2 Hz ................................................. ±1 mm
13.2...100 Hz............................................... ±0.7 g

Common specifications
Supply
Supply voltage, universal........................... 21...6...253 VAC, 50...60 Hz or
19...2...300 VDC
Max. required power.................................... 3.3 W (5715B)
Max. required power.................................... 3.8 W (5715D)
Internal power dissipation........................... 3.0 W (5715B)
Internal power dissipation........................... 3.5 W (5715D)
Isolation voltage.........................................< 0.002 Ω / Ω
Isolation voltage, test / working....................< 15 Ω
Response time
Temperature input (0...90%, 100...10%).............. ≤ 1 s
mA / V input (0...90%, 100...10%)...................≤ 400 ms

Auxiliary supplies
2-wire supply (pin 46...45)............................. 25...15 VDC / 0...20 mA
Signal / noise ratio....................................... Min. 60 dB (0...100 kHz)
Accuracy.................................................... Better than 0.1% of sel. range
Programming............................................. Loop Link
EMC immunity influence..............................< ±0.5% of readout

Input specifications
RTD input
RTD type.................................................... Pt10/20/50/100/200/250;
Pt30/60/90/120/150/200; Ni50/100/120/150/200;
Cu10/20/50
Cable resistance per wire............................ 50 Ω (max.)
Sensor current.......................................... Nom. 0.2 mA
Effect of sensor cable resistance
(3-4 wire).................................................. < 0.002 Ω / Ω
Sensor error detection................................. Yes
Short circuit detection................................. < 15 Ω
Linear resistance input
Linear resistance min...max.......................... 0 Ω...10000 Ω
Potentiometer input
Potentiometer min...max............................. 10 Ω...100 kΩ
TC input
Thermocouple type...................................... B, E, J, K, L, N, R, S, T, U,
W3, W5, LR
CJC via int. mounted sensor........................ ±(2.0°C + 0.4°C * Δt)
Δt =....................................................... Internal temp.-ambient temp.

Sensor error detection............................... Yes
Sensor error current: When detecting / else........... Nom. 2 μA / 0 μA

Current input
Measurement range..................................... 0...20 mA
Programmable measurement ranges.................. 0...20 and 4...20 mA
Input resistance......................................... Nom. 20 Ω + PTC 25 Ω
Sensor error detection................................. Loop break 4...20 mA

Voltage input
Measurement range..................................... 0...12 VDC
Programmable measurement ranges.............. 0/0...2/1; 0/2...10 VDC
Input resistance........................................ Nom. 10 MO

Output specifications
Display
Display readout........................................... -1999...9999 (4 digits)
Decimal point............................................ Programmable
Digit height............................................. 13.8 mm
Display updating........................................ 2.2 times / s
Input outside input range
is indicated by........................................... Explanatory text

Current output
Signal range............................................. 0...20 mA
Programmable signal ranges......................... 0...20/4...20/20...0/20...4 mA
Load (@ current output)............................... ≤ 800 Ω
Load stability............................................ ≤ 0.01% of span / 100 Ω
Sensor error indication ............................... 0 / 3.5 / 23 mA / none
NAMUR NE43 Upscale/Downscale.................... 23 mA / 3.5 mA
Output limitation, on 4...20 and 20...4 mA signals... 3.8...20.5 mA
Output limitation, on 0...20 and 20...0 mA signals... 0...20.5 mA
Current limit............................................. ≤ 28 mA

Relay output
Relay functions......................................... Setpoint
Hysteresis............................................... 0...100%
ON and OFF delay..................................... ≤ 3600 s
Sensor error reaction................................ Break / Make / Hold
Max. voltage............................................ 250 VRMS
Max. current............................................ 2 AAC
Max. AC power.......................................... 500 VA
Max. load at 24 VDC................................. 1 A

Observed authority requirements
EMC.......................................................... 2014/30/EU
LVD.......................................................... 2014/35/EU
EAC.......................................................... TR-CU 020/2011

Approvals
DNV-GL Marine........................................ Stand. f. Certific. No. 2.4
UL............................................................ UL 508 / C22.2 no. 14