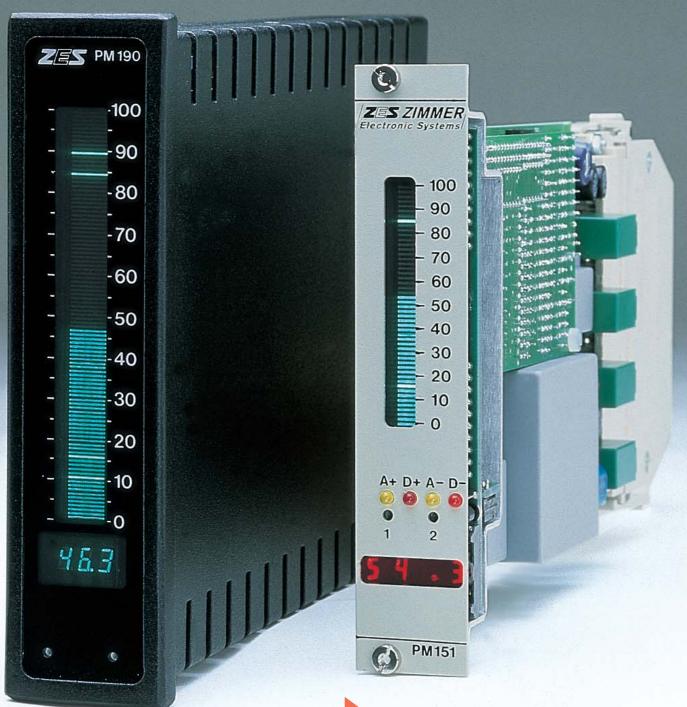


Panel Meter PM190/PM151

Limit monitor with bar-graph and digital display Intelligent configuration to various applications



Easy to read:

Simultaneous analogue indication of measuring and limit values, digital display for the 0,1%-precise setting and evaluation

Easy to install, easy to operate: 230/115/24V auxiliary energy, standard inputs 0-10V, 0(4)-20mA, 4 alarm relays 250V/5A, supply for 2-wire transducers etc.

PM190/PM151

Technical Data PM190 PM151 Design meter for panel mounting, sheet-steel, frame 36 x 144mm, compact plug-in module for racks according to DIN41494 mounting depth 200mm, panel hole acc. DIN43700 (19"), front: height 3HU, width 5PU (1"), board: 160 x 100mm 33^{+0,6} x 138^{+1,0} mm, protection class I acc. IEC348, VDE0411 Display quasianalogue, vacuum-fluorescent bar-graph of Analogue display quasianalogue, vacuum-fluorescent bar-graph of 100 segments, 84mm length 51 segments, 50mm length Digital display 3 digits, alphanumeric, 7-segment vacuum-fluorescent 4 digits, alphanumeric, 16-segment-LED -1099 to +1099, displaying for 1000..1099: 000..099 character height 6mm, -1099 to +1099 Accuracy 0,1% of measuring value \pm 1 digit 0,1% of measuring value ± 1 digit for 1- to 3-digit numbers in the free leading digit, for 1- und 2-digit numbers in the free leading digit, Negativ sign otherwise determinable by the analogue display otherwise determinable by the analogue display programmable like 000: 0.00: 00.0 programmable like 000: 0.00: 00.0 Decimal point special characters in the digital display: חחר/שש Over-/under range indication special characters in the digital display: ++++/--display values programmable for 0V resp. 0(4)mA Numerical range display values programmable for 0V resp. 0(4)mA and for full range (e.g. 10V resp. 20mA) and for full range (e.g. 10V resp. 20mA) Indication of alarm flashing of bar-graph (can be deactivated) flashing of bar-graph (can be deactivated), additional 2 yellow LEDs for 'alert' and 2 red LEDs for 'danger

Inputs and Outputs

Standard scale

Measuring value inputs Limits Digital outputs Supply outputs Measuring method Alarm response time Adjustment

0 to 100 with white characters on black background 0 to 100 with black characters on bright background 0...10V (Ri1≥MΩ), 0(4)...20mA (Ri≤65Ω), selectable by setup, but not both at the same time 2 minimum- and 2 maximum set points, individually programmable with front keys or connector terminals T1, T2 alarm relays with change-over contacts 250V/5A for each limit, 4 pieces altogether

24V/25mA for external transducers, 5V/7mA test voltage dual-slope-integration, approximately 30 conversions/sec., resolution 13bits

Measuring value

max. 40ms when passing limit value

by applying a calibration source of 5,000V ... 10,000V resp. 10,000 ... 20,000mA for full scale adjust all parameters can be set by user with 2 front keys or external signals at connector terminals T1, T2 these parameters are stored nonvolatile

Further data Auxiliary energy Fuse Electrical connections

Instrument setup

PM190, PM151 230VAC ± 20%, 45..450Hz, 5W Si 0, 1A/250V slow

32-pin male connector, DIN41612, design F

PM190-1, PM151-1 PM190-2, PM151-2 115VAC ± 20%, 45..450Hz, 5W 24VDC(AC) ± 20%, 4W Si 0,1A/250V slow Si 0,5A/250V slow

Operating temperature 0 to 50 °C

Max. alarm relay Alert A Protective earth 32 € normal open to housing 30 alarm, rest contact 230/115 V AC 28 ==== 26 24V DC(AC) ۸ux. Max. alarm relay danger d \oplus 24 normal open 22 20 center contact 18 Kev T1 Min. alarm relay Alert A_ Key T2 16 normal oper 14 alarm, rest contact Transducer supply 12 nter contact +24V/25mA Test voltage 5V/7mA -10 Min. alarm relay danger d_ 8 I input -normal oper U input ----6 alarm, rest contact Ground 4 Control input Calibration/Adjustment 2

Pin assignment of electrical connector PM190/PM151

8.8.8 Measuring and Monitor Modus Limit value Blinking bar Setting of limits ON/OFF status Sign T1 digit select at alarm T2 figure select ıΠŀ Setting of 1 2 max limits ON/OFF status d danger (pre- and main alarm) T2 sian, value A Alert 1 2 min. limits blinking bar √T2 d_ danger (pre- and main alarm) at alarm (same as above A Hysteresis 888 End J2 Save limit parameters Further parameters Measuring input mode U uni: 10...0...+10V Jo U bip IO uni: 0...20mA Ь -20...0...+20mA T1\ I4 uni: 4...20mA lUn. a) Low value for OV, 0mA or 20% full scale (F.S.) (e.g. 4mA at 20mA F.S.) Scaling of digital display Sign Low/high value b) High value for ES Ο, 888 Decimal point Hint: T1 (1) button push for vertical, T2 (>) button push for horizontal 88 run through structogram 0.00 FUG 12 Save all parameters

Flow chart for reading and setup

Subject to technical changes, especially to improve the products, at any time without prior notification.

