

GESTRA Steam Systems

Product Range B1

General-Purpose Controller Type PKC With SMART Function

PKC

Purpose

The general-purpose controller PKC can be used for simple automatic control loops and for the automation of complex control processes. Thanks to its high flexibility the controller suggests itself as an economical solution for many industrial applications. The instrument has Self-Monitoring with Routing Testing (SMART) features for self-optimisation of the control parameters. A serial interface (Profibus) is available as optional extra. The configuration and parameterisation data are stored in an EEPROM. The easy-to-read 5 line alphanumeric LCD display is menu-driven and facilitates on-site configuration and parameter entry in accordance with the operating conditions.

Design

General-purpose controller in a case for panel mounting to DIN 43700 for installation in control panels, desks and cabinets.

Wiring via rear 32-pole terminal block with swing-up safety cover, for conductor sizes $\leq 1.0 \text{ mm}^2$.

Function

Continuous controller

PID action

Proportional action

coefficient k_p : 0.5 to 999.0 %

Reset time T_r [s]: 1 s to 1200 s

Derivative action time T_d [s]: 1 s to 600 s

Discontinuous controller

2-position, 3-position stepping controller

A self-optimisation feature, which ensures the automatic adaption of the control parameters to the process, is implemented in the general-purpose controller PKC. The self-optimisation by adaptation is effected by a **SMART** module.

Technical Data

Inputs

Controller Input 1

Thermocouples

Type	°C Range
B	0/1820
C	0/2300
D	0/2300
E	-100/800
G	0/2300
L	-100/900
J	-100/1000
K	-100/1370
N	-100/1400
Ni/NiMo	0/1100
R	-50/1760
S	-50/1760
T	-200/400
U	-200/600

Comparison-point compensation error: 0.1 °C

Input impedance: $\geq 100 \text{ k}\Omega$

Sensor fracture detection and indication on display.

Voltage/Current

	d.c. voltage	direct current
Input resistance	400 k Ω	5 Ω DIN IEC 381
Measuring range	0–10 V	0/4–20 mA

PT 100 Resistance Thermometer

Input for PT 100 sensors in acc. with DIN 43760 and for three-wire connection.

Measuring range: -200 °C to 850 °C

Measuring current: max. 1 mA

Measuring error: 0.2 % of the measuring range

Sensor fracture and short-circuit detection indicated on display

Conductor resistance: max. 20 Ω / conductor

Frequency

Three logic inputs via volt-free contacts

Configurable for the following functions:

- auto/manual change-over
- local/remote set-point selection
- set-point selection SP1 – SP2 and SP 3 – SP4
- storing actual value read-out
- manual reset of alarms

Set Point

Four local (internal) and one remote (external) set points: mA or V

Outputs

Relay

Two volt-free relay contacts (output 1 and 2), contact rating 3 A @ 250 V on resistive load.

Servomotor (output 3 and 4), contact rating 3 A @ 250 V on resistive load.

Current

0/4 – 20 mA, max. load 600 Ω (output 5)

Alarm/Limit Values

Two volt-free relay contacts for upper and lower limits: (absolute) band and deviation alarm, contact rating 3 A @ 250 V on resistive load.

Transmitter Supply

24 V DC ± 20 % not insulated

max. current 25 mA, max. load 600 Ω

Read-out

LCD display, alphanumeric characters, 5 lines

Setting

Menu-driven keyboard programmable configuration and parameter definition

Case

Installation: panel mounting

Dimensions: 48 x 96 x 128 mm

Weight: 500 g

Front protection: IP 65

Mains supply

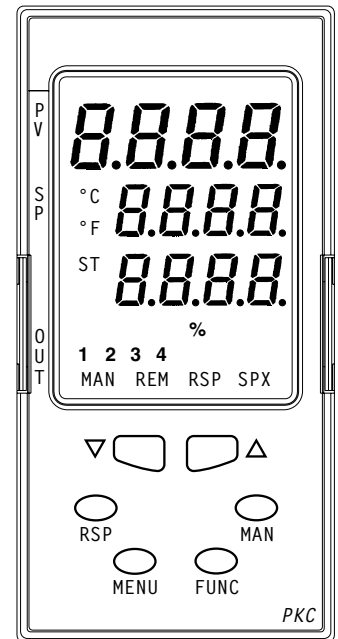
100 – 240 V AC, 50/60 Hz, 24 V AC/DC (optional)

Power consumption: max. 15 VA

Admissible ambient temperature: 0 °C to 50 °C

Storage temperature: -20 °C to 70 °C

Relative humidity: 20–85 %, not condensing



General-Purpose Controller

Type PKC

With SMART Function

Wiring

Interfaces: RS 485 (optional)
 Sensor supply: 24 V DC
 Max. permissible current: 25 mA

Important Notes

Sensors should always be connected with screened cable.
 If a pneumatic actuator is used an electro-pneumatic transducer is required.
 Ensure interference suppression of loads connected to the relay contacts by appropriate wiring.

Order and Enquiry Specification

GESTRA general-purpose controller **type PKC – servo** – with min. and max. limit values
 SMART function module for self-optimisation of control parameters by adaptation, in a case for panel mounting to DIN 43700

Dimensions: 48 x 96 x 145 (130 mm)
 Front protection: IP 65

Inputs:

- PT 100 (three-wire connection)
- Thermocouples (14 types)
- Remote set point 0/4 – 20 mA
- 3 logic inputs
- 4 local set points

Outputs:

- 24 V DC transmitter supply
- Servomotor drive (output 3 and 4)
- Control output or actual value 0/4 – 20 mA (output 5)
- 2 changeover contacts for min./max. limit (output 1 and 2)
- Supply voltage: 100 – 240 V, 50/60 HZ

GESTRA general-purpose controller **type PKC – mA** –

Inputs:

- Linear inputs 0/4 – 20 mA, mV, V
- Thermocouples (14 types)
- Remote set point 0/4 – 20 mA
- 3 logic inputs
- 4 local set points

Outputs:

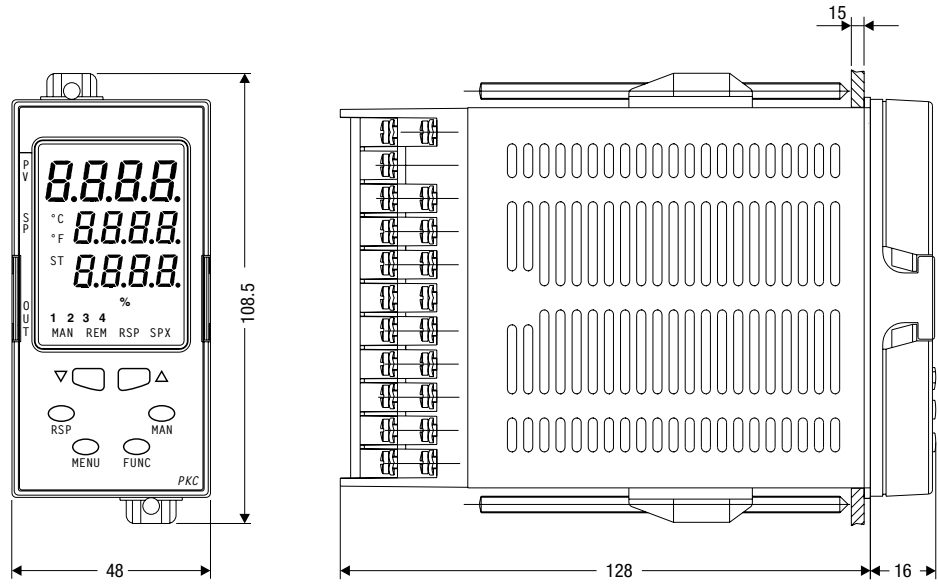
- 24 V DC transmitter supply
- Servomotor drive or min./max. alarm (output 3 and 4)
- Control output 0/4 – 20 mA (output 5)
- 2 changeover contacts for min./max. limit (output 1 and 2)

Associated Equipment

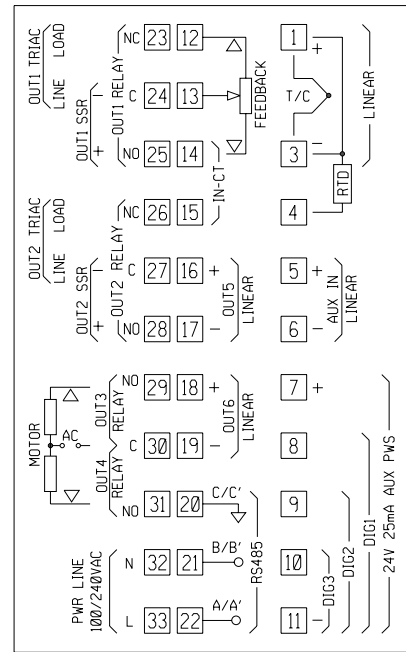
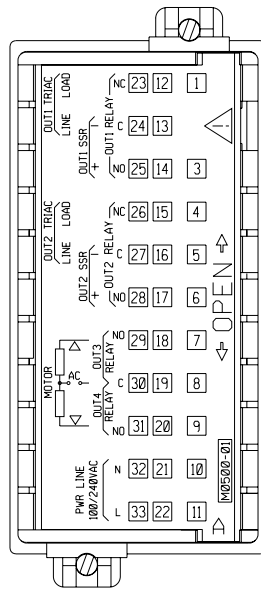
- Thermocouples
- Resistance thermometer
- Pressure transducer
- Level electrode type NRG 26-...
- Level transmitter type NRT 2-1
- Conductivity transmitter type LRT 1-5/LRT 1-6
- Pneumatic and electric control valves series 200, 500, V 725, V 726 and V 727

Supply in accordance with our general terms of business.

Dimensions



Wiring Diagram



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