

Specifications

SPEC 6164

Microprocessor-controller μ Climatron baelz 6164 for heating installations

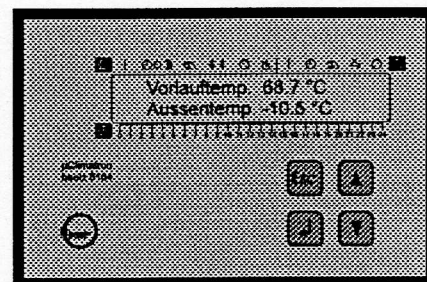


Characteristics

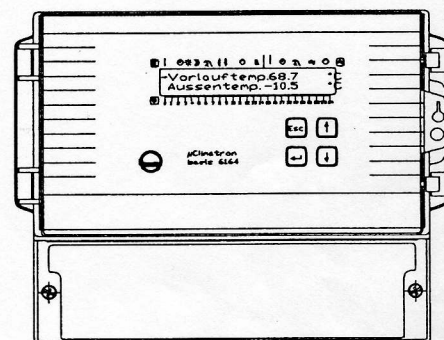
- microcontroller technology
- all-in-one-card controller, for minimum space
- wiring by plug-on screw-in terminals
- front side with LCD 2x24 characters and keyboard
- measuring inputs Pt100, NTC, 0/2-10V, 0/4-20mA, potentiometer 1 - 5 k Ω
- easiest handling for setting-up with 4 keys assisted by menu assisted self explaining texts
- interface RS 232, RS 485, option for M-Bus

Functions

- Max. 2 loops
- outdoor dependent / constant supply temperature control
- with / or without room temperature compensation by adapting setpoint of supply temperature
- with / or without limitation of min or max return temperature by adapting setpoint of supply temperature, outdoor depending or constant influence
- heating curve with max. 5 corner-points to define any required form
- occupational periods with 3 on- and 3 off-times per weekday
- max. 16 holidays, 4 special time periods, 10 vacation periods
- external correction potentiometer for supply setpoint
- summer / winter schedule, i.e. start-stop order for automatic control depending an outdoor temperature
- summer- / winter-time selection
- daily starting of pump in summer schedule to avoid blocking
- domestic hot water control by external on-off-thermostat by 1 or 2 temperature sensors to operate a boiler-pump or a control valve
- priority for domestic hot water by increasing supply temperature setpoint
- time clock program for circulation pump
- sensor super-vision with alarm generation on LCD
- main menu with manual operation via keyboard



baelz 6164 for front-panel mounting



MZN 6164-03
00002375.dxf

baelz 6164-W for wall-mounting

Technical Data

• power supply	230 / 120 VAC -15% / +10% , 50 / 60 Hz	• accuracy	0,3 % of measuring range
• fuse	extern 0,63 A	• analog inputs	NTC : 3.11 (-40°C to +60°C)
• power consumption	appr. 7 VA		3.12 (0°C to +60°C)
• permissible ambient temperature			3.13 (0°C to +140°C)
- operation	0 bis 50 °C		PT100 : 2.49 (-40°C to +120°C)
- transport and storage	- 25° to + 65° C		Current : 0/4 to 20 mA, Ri = 5,9 Ω
• permissible relative humidity	5 to 90 % r.H.		Voltage : 0/2 to 10 V, Ri = 160 k Ω
• degree of protection	IP 55 front	• frontplate	potentiometer : 1 - 5 k Ω
• design		• keyboard	LCD with 2x24 character
- for front-panel mounting	baelz 6164,WxHxD 144x96x75 mm	• relays	4 keys
- for wall-mounting	baelz 6164-W, WxHxD 240x185x120 mm		contact potential-free
• installation position	arbitrary		Switching capacity 250 VAC / 3 A
• DI-feed voltage	24 VDC , Imax = 60 mA	• serial interface	Spark quenching capacity 10nF + 100 Ω
• digital inputs	Ri = 4 k Ω	(option)	RS 232 or
	(low = 0 VDC ; high = 15 ... 24 VDC)	• Data storage	RS 485 Modbus-protocol RTU-mode
• analog outputs	0 / 2 to 10 V , Imax = 5 mA		Lithium-Battery 3,0 V

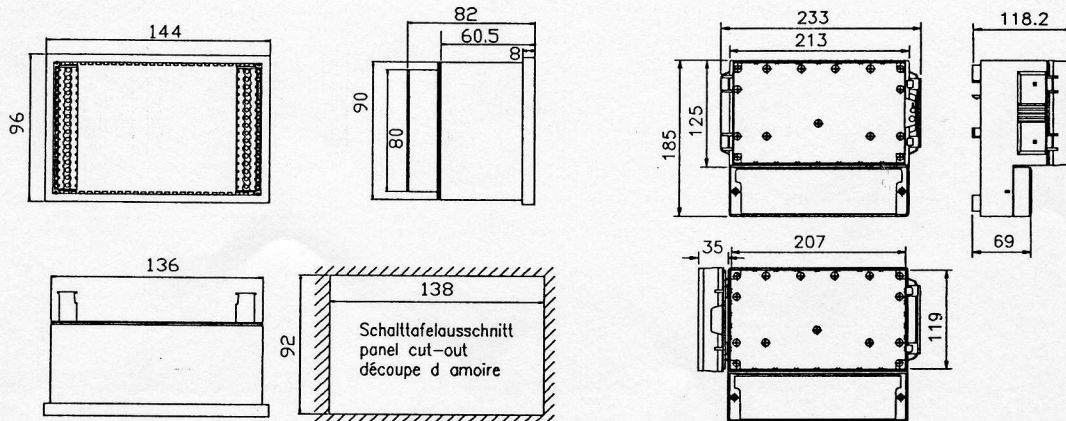
Technical changes without notice !

TA 38 2 2'-2

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Dimensions

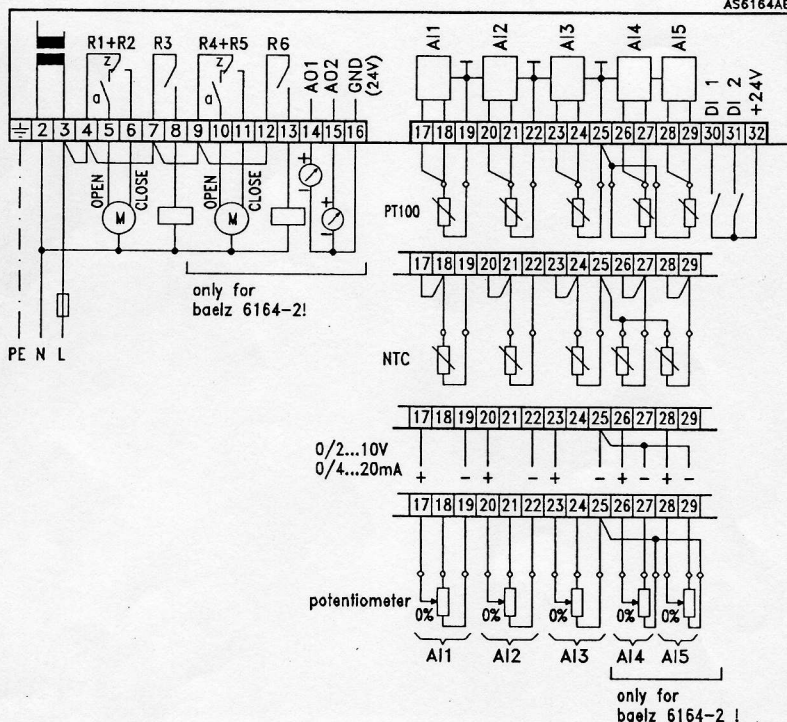


baelz 6164

baelz 6164-W

Electrical connection

µClimatron baelz 6164-1 and -2



Relays

- R1 open, loop 1
- R2 close, loop 1
- R3 optional¹⁾
- R4 open, loop 2
- R5 close, loop 2 or optional¹⁾
- R6 optional¹⁾

Analog inputs

- AI1 supply temperature loop 1
- AI2 optional²⁾
- AI3 outdoor temperature
- AI4 supply temperature loop 2 / or optional²⁾
- AI5 optional²⁾

Analog outputs

- AO1 copy of AI 1 ... 5
- AO2 copy of AI 1 ... 5

Digital inputs

- DI1 open / close / occupation / boiler thermostat
- DI2 open / close / occupation / boiler thermostat

¹⁾ for heating loop pump or domestic hot water storage pump or on-off-valve

²⁾ room- or return- or DHW-temperature or correction potentiometer

Ordering text

µClimatron baelz 6164-1 as heating controller for front-panel-mounting ; dimension : W x H x D 144 x 96 x 82 mm ; wiring by plug-on screw-in terminals ; front side with LCD 2x24 characters and keyboard, easiest handling for setting-up with 4 keys; max. number of inputs and outputs : 3 analog inputs, 2 digital inputs, 3 Relays; power supply : 230/120 VAC 50/60 Hz

µClimatron baelz 6164-2 as heating controller as baelz 6164-1 but with 5 analog inputs, 2 digital inputs, 6 Relays, 2 analog outputs;

µClimatron baelz 6164-1-W as heating controller for wall-mounting ; dimension : W x H x D 240 x 185 x 120 mm ; wiring by plug-on screw-in terminals ; front side with LCD 2x24 characters and keyboard, easiest handling for setting-up with 4 keys; max. number of inputs and outputs : 3 analog inputs, 2 digital inputs, 3 Relays; power supply : 230/120 VAC 50/60 Hz

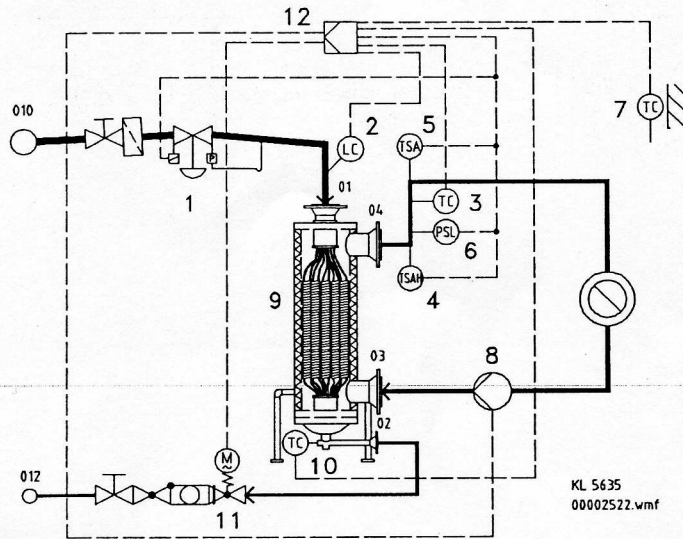
µClimatron baelz 6164-2-W as heating controller as baelz 6164-1-W but with 5 analog inputs, 2 digital inputs, 6 Relays, 2 analog outputs;

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Applications :

1. Steam / water heat-exchanger



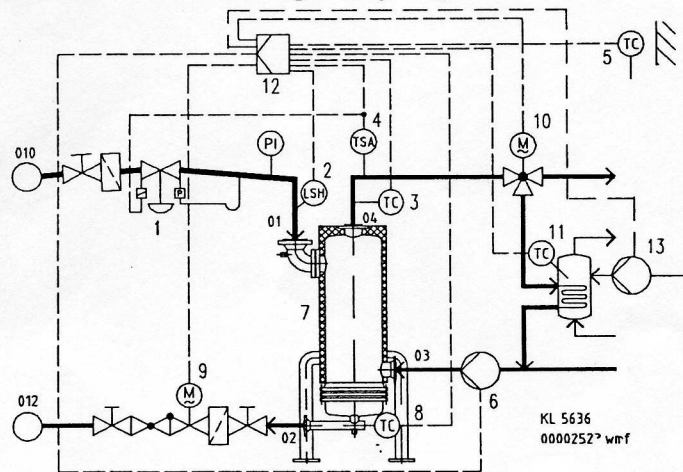
Positions

- 1 multi-purpose valve for steam
- 2 level electrode
- 3 supply temperature sensor
- 4 supply safety thermostat with manual reset
- 5 max. thermostat without manual reset
- 6 pressure switch
- 7 outdoor temperature sensor
- 8 heating pump
- 9 steam / water heat-exchanger
- 10 condensate temperature sensor
- 11 motorized control valve
- 12 μ Climatron baelz 6164-1-W

Functions

- outdoor dependent supply temperature control with limitation of max condensate temperature by adapting setpoint of supply temperature, outdoor depending or constant influence
- if the condensate level is high (2), it opens the control valve (11)
- safety functions have to be realized externally according to local laws and rules

2. Steam / water heat-exchanger with priority for domestic hot water



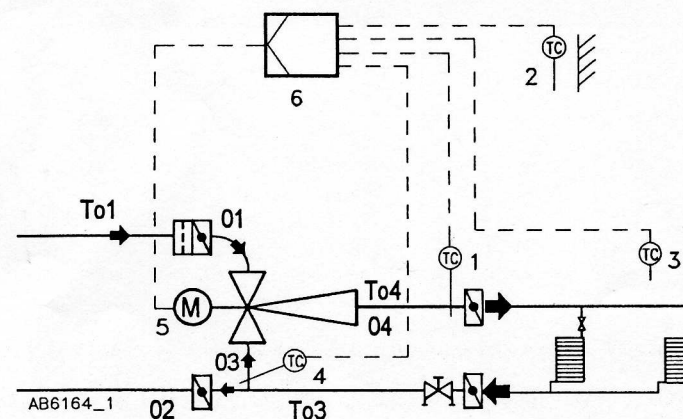
Positions

- 1 multi-purpose valve for steam
- 2 level electrode
- 3 supply temperature sensor
- 4 supply safety thermostat with manual reset
- 5 outdoor temperature sensor
- 6 heating pump
- 7 steam / water heat-exchanger
- 8 condensate temperature sensor
- 9 motorized control valve
- 10 change-over valve to load boiler
- 11 boiler temperature sensor
- 12 μ Climatron baelz 6164-2-
- 13 DHW circulation pump

Functions

- outdoor dependent supply temperature control with limitation of max condensate temperature by adapting setpoint of supply temperature, outdoor depending or constant influence
- if the condensate level is high (2), it opens the control valve (9)
- domestic hot water temperature control by storage sensor (11) and change-over valve (10) ; priority mode; clockprogramm for DHW circulation pump (13)
- safety functions have to be realized externally according to local laws and rules

3. outdoor dependent supply temperature control with Jetomat



Positions

- 1 supply temperature sensor
- 2 outdoor temperature sensor
- 3 room temperature sensor
- 4 return temperature sensor
- 5 motor jet pump Jetomat baelz 480
- 6 μ Climatron baelz 6164-2-

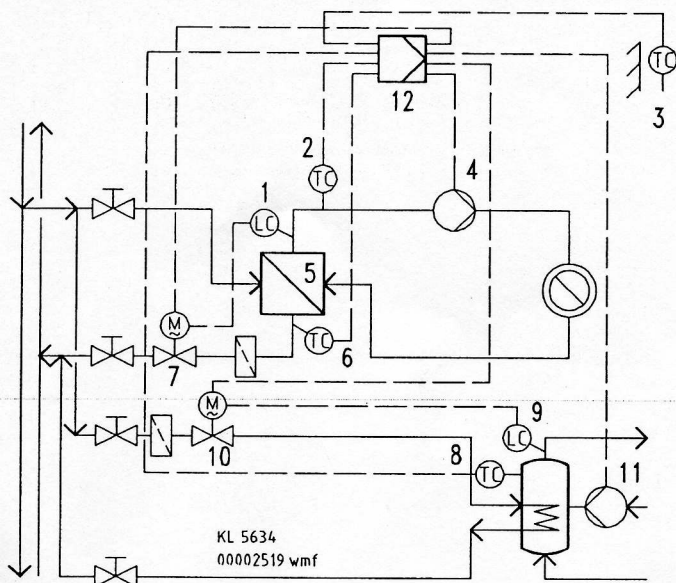
Functions

- outdoor dependent supply temperature control with room temperature compensation by adapting setpoint of supply temperature
- with Optimum Start-Stop
- supervision of low room temperature
- special ejector functions with pulsing start-up and modified temperature control

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4. Water / water heat-exchanger with domestic hot water temperature control



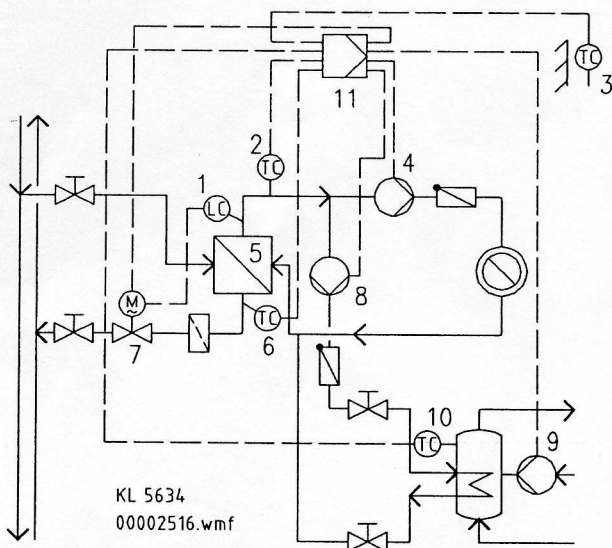
Positions

- 1 supply safety thermostat with manual reset
- 2 supply temperature sensor
- 3 outdoor temperature sensor
- 4 heating pump
- 5 water / water heat-exchanger
- 6 primary return temperature sensor
- 7 motorized control valve for heating loop
- 8 boiler temperature sensor
- 9 supply safety thermostat with manual reset for boiler
- 10 motorized control valve for DHW loop
- 11 DHW circulation pump
- 12 μClimatron baelz 6164-2-

Functions

- outdoor dependent supply temperature control with limitation of max primary return temperature by adapting setpoint of supply temperature
- domestic hot water temperature control by storage sensor (8) and motorized control valve (10) ; clockprogramm for DHW circulation pump (11)
- safety functions have to be realized externally according to local laws and rules

5. Water / water heat-exchanger with priority for domestic hot water



Positions

- 1 supply safety thermostat with manual reset
- 2 supply temperature sensor
- 3 outdoor temperature sensor
- 4 heating pump
- 5 water / water heat-exchanger
- 6 primary return temperature sensor
- 7 motorized control valve
- 8 DHW storage pump
- 9 DHW circulation pump
- 10 boiler temperature sensor
- 11 μClimatron baelz 6164-2-

Functions

- outdoor dependent supply temperature control with limitation of max primary return temperature by adapting setpoint of supply temperature
- domestic hot water temperature control by storage sensor (10) and DHW storage pump (8) ; priority mode; clockprogramm for DHW circulation pump (9)
- safety functions have to be realized externally according to local laws and rules