hotcontrol

Built-In Temperature Controllers

- Single channel temperature controllers for use in:
  - Hot runner applications
  - Machines for plastics processing
  - Packaging machines
  - Ovens
  - Food processing
  - Dryers, etc.

hotcontrol c148

Features and Functions

- PID- and two-level controller
- Manual mode
- Auto tuning
- Digital filter
- Automatic sensor break detection
- Ramp function (e. g. for start-up mode)
- Fuzzy logic

Stock Range

Stock ID	Type	Dimensions [mm]	Voltage [V AC]	Comment	Delivery
8814800	C 148	48 x 48 x 116	90… 250 V AC		
8814800H	C 148	48 x 48 x 116	90… 250 V AC		SSR D 2425
264004	D 2425		240 V, 16 A	SSR	
264012				cover plate	

hotcontrol c248 / c296

c248

c296

Features and Functions

- PID-, two-level and three-level controller
- Manual mode
- Auto tuning
- Automatic sensor break detection
- Ramp function and automatic ramp function
- Second set point can be combined (absolute/relative)
- Four timers (e. g. for start-up mode)
- Digital outputs for control heating/cooling or alarm to be configured
- Monitoring of actual value, sensor, heat current and the actuator in the heat circuit
- Remote operation – handle several controllers concurrently
- Overall functions of controller such as automatic ramp through networking by CAN-bus
- Digital data interfaces RS485 and CAN-bus
- Engineering tool WinKonVis: configuration and parameter settings through RS485 and/or CAN-bus
- Operating hour counter
- Update of firmware by RS485 possible

Stock Range

Stock ID	Type	Dimensions [mm]	Voltage [V AC]	Comment	Delivery
8804800	C 248	48 x 48 x 120	85 … 264 V AC	incl. RS 485, MODBUS	
8804801	C 248	48 x 48 x 120	24 V AC DC	incl. RS 485, MODBUS	
8804800H	C 248	48 x 48 x 120	85 … 264 V AC	incl. RS 485, MODBUS	incl. SSR D 2425
8804801H	C 248	48 x 48 x 120	24 V AC DC	incl. RS 485, MODBUS	incl. SSR D 2425
8809600H	C 296	48 x 96 x 120	85 … 264 V AC	incl. RS 485, MODBUS	incl. SSR D 2425
8809600	C 296	48 x 96 x 120	85 … 264 V AC	incl. RS 485, MODBUS	
264004	D 2425		240 V, 16 A	SSR	
264012				cover plate	

Technical Data	hotcontrol c148	hotcontrol c248	hotcontrol c296
Number of regions	1	1	1
Nominal voltage	90 … 250 V AC, 47 … 63 Hz	85 … 240 V AC	
Input	12 VA, 5 W max.	150 mA	
Display	2 x four digit 7-Segment-LED		
Control	membrane keypad		
Status Display	3 x LED	5 x LED	8 x LED
Dimension (H x W x D) [mm]	48 x 48 x 116	48 x 48 x 94	96 x 48 x 94
Mounting	front mounting		
Casing	plastic		
Weight [kg]	0.15	0.2	0.25
Operating temperature	-10 … 50 °C	0 … 55 °C	
Connections	integrated clamps		
Protection mode	Front: IP65, indoor use only	Front: IP54 Casing, Connectors: IP20	
Addressing	-	via configuration parameters	
Data Back up	-	EEPROM	
Data interfaces	**hotcontrol c148**	**hotcontrol c248**	**hotcontrol c296**
RS 485	–	Modbus, 1200 … 19200 Baud	
CAN	–	Canopen (CiA 401 V 2.01) up to 1 Mbps	
Measuring input temp.	**hotcontrol c148**	**hotcontrol c248**	**hotcontrol c296**
Number	1	1	3
Resolution	18 bit	14 bit	
Sample rate	5 Hz		
Type	Thermocouple type J, K, L or Pt100 in 2- oder 3-conduction connection		
Range	Typ J/L: -120 … 1000 °C Typ K: -200 … 1370 °C Pt 100: -210 … 700 °C	Typ J/L: 0 … 850 °C Typ K: -50 … 1200 °C Pt 100: -50 … 700 °C	
Reference junction	internal		
Input resistance	2.2 MΩ (Pt 100: 1.3 KΩ)	> 47 kΩ	
Measuring accuracy	± 2K (Pt 100: ± 0.4 K)	< 1 K	
Monitoring	sensor break, sensor short circuit (Pt100 only)	sensor break, reversed polarity sensor short circuit (Pt100 only)	
Heat current meas. inputs	**hotcontrol c148**	**hotcontrol c248**	**hotcontrol c296**
Number	–	1, single phase, via converter	
Signal	–	42 mV/A	
Resolution		14 bit	
Digital input	**hotcontrol c148**	**hotcontrol c248**	**hotcontrol c296**
Number	–	1	2
Specification	–	externall potential-free contact 0 … 30 V DC, < 10 mA at 24 V DC	
Function	configurable		
Digital output	**hotcontrol c148**	**hotcontrol c248**	**hotcontrol c296**
Number	1	2	4
Type	pulsed voltage to drive SSR	1 electr. switch contact, 1 relay output	
Specification	14 V DC, max. 40 mA	12 V, 100 mA; 250 V, 2 A	
Function	relay output	relay output, alarm output	

hotcontrol
Desktop Temperature Controller

hotcontrol c448

Features and Functions
- Desktop control device for 1 or 2 control areas
- Micro processor operating controller c248 inside
- Start-up and boost mode
- Alarm output or machine release by potential free contact

Options
- Stand-by mode
- Heat current monitoring
- Measuring point 0 to 60 A
- Resolution 1/10 A, tolerance 1% of full scale value
- Interfaces CANbus and RS485

Stock range

Stock ID	Type	Dimensions [mm]	Voltage [V AC]	Comment	Delivery
8844810	C 448/1 FeCuNi	1	1 x 16 A	90 … 264 V AC, 50-60 Hz	
8844810G	C 448/1 FeCuNi	1	1 x 16 A	90 … 264 V AC, 50-60 Hz	incl. connector kit
8844820	C 448/2 FeCuNi	2	2 x 16 A	90 … 264 V AC, 50-60 Hz	
8844820G	C 448/2 FeCuNi	2	2 x 16 A	90 … 264 V AC, 50-60 Hz	incl. connector kit
9600000	connector kit				

Technical Data	**hotcontrol c448/1**	**hotcontrol c448/2**
Number of control units inside	1	2
Nominal voltage	90 … 264 V AC ± 10%, 50 ... 60 Hz, 1P / N / PE	
Standard power connection	3 m power connection cable	
Display	2 x four digits 7-Segment LED	4 x four digits 7-Segment LED
Control	membrane	
Status Display	5 x LED	2 Displays, each 5 x LED
Dimension (H x W x D) [mm]	105 x 110 x 230	
Casing	aluminium, silver anodized	
Weight [kg]	app. 2 kg	
Operating temperature	0 … 55 °C	
Addressing	via configuration parameters	
Data Back up	EEPROM	
Optional Data interfaces	**hotcontrol c448/1**	**hotcontrol c448/2**
RS 485	Modbus, 1200 … 19200 Baud	
CAN	Canopen (CiA 401 V 2.01) bis 1 Mbps	
Measuring input temperature	**hotcontrol c448/1**	**hotcontrol c448/2**
Number	1	2
Resultion	14 bit	
Sample rate	5 Hz	
Type	Thermocouple type J	
Range	0 … 500 °C, switchable to °F	
Reference junction	internal	
Input resistance	> 47 kΩ	
Measuring accuracy	< 1 K	
Monitoring	sensor break, reversed polarity sensor short circuit (Pt100 only)	
Heat current measuring inputs	**hotcontrol c448/1**	**hotcontrol c448/2**
Number	1, single phase via converter	2, single phase via converter
Signal	42 mV/A	
Resolution	14 bit	
Digital input	**hotcontrol c448/1**	**hotcontrol c448/2**
Number	1	2
Specification	external potential-free contact, 0 … 30 V DC, < 10 mA at 24 V DC	
Function	configurable	
Digital output	**hotcontrol c448/1**	**hotcontrol c448/2**
Number	2	4
Type	1 x relay	2 x relay
Specification	250 V AC, 2 A, resistive load	
Function	Collective alarm message for: temp. threshold, sensor failure, reversed polarity, heat current tolerance alarm, short circuit of power output	
Power Outputs	**hotcontrol c448/1**	**hotcontrol c448/2**
Output power	90 … 264 V AC / max. 3.6 kW, switch with SSR 25 A	
Protection	ultra rapid fuse FF 16 A, 6.3 x 32 mm	
Tool connection	10-pole Wieland conncetor	2 x 10-pole Wieland conncetor

hotcontrol
Multi Channel Temperature Controllers

hotcontrol cDT+ series

- Compact design with 6 to 24 zones
- Integrated 7” touchscreen
- 3 languages for selection
- Process monitoring
- Grouping of zones and storage
- User administration with password protection

Features and functions

- Storage option for 10 set point settings
- Mold check (automated checking of the condition of heaters and sensors in the heating channel, wiring check)
- Mold snapshot (sampling protocol)
- Heat ‘n’ Dry (controlled, gentle heating for complete baking of the heater with control of the residual current)
- Leakage detection
- Data import/export via USB stick
- Data storage on USB stick
- Zone on/off, control mode/manual mode, standby, boost, time-controlled boost, start-up mode, leading zones mode and more
- PID control algorithm
- Autotuning
- Heating outputs with impulse group mode or phase angle (dependent on the operating condition)
- Smart Power Limitation (intelligent energy limitation of the heating output emitted to the heating channel on the mains input available at the controller)
- Safety shutdown of the heating outputs
- Uniform, guided heating with automatic ramp
- Monitoring
  - Temperature alarm limits above and below the nominal values (selectable)
  - Excess/insufficient temperature (selectable)
  - Heating power outside the tolerance range (selectable)
  - Interrupted heating circuit
  - Fuse failure
  - Sensor breakage and reverse polarity, short-circuit in the sensor circuit
  - Residual current/leakage current measurement
  - Heating output permanently switched on

Technical data	hotcontrol cDT+ 06	hotcontrol cDT+ 12	hotcontrol cDT+ 18	hotcontrol cDT+ 24
Number of regions	6	12	18	24
Nominal voltage	400 V AC, 3P/N/PE, 50 … 60 Hz			
Power supply, 3 m	CEE 16 A	CEE 32 A	CEE 63 A	CEE 63 A
Max. power output	11 kW	22 kW	43 kW	43 kW
Display/operation	Via a front-installed controller & user interface with 7” TFT display and capacitive touch (CUI07)			
Dimensions (H x W x D) [mm]	400 x 260 x 390	400 x 260 x 390	400 x 260 x 390	400 x 260 x 390
Weight [kg], approx.	21	22	23	3024
Permissible temperature	Operation: 0 … 45 °C, transport, storage: -20 … 70 °C			
Permissible humidity	Relative humidity < 75% as an annual average, no condensation			
Sound pressure level	< 50 dB			
Protection type	IP21			
Electrical safety	Protection class I, overvoltage category II			
CE labelling	The device complies with the guidelines for electromagnetic compatibility (complies with EN 61326-1) and the low-voltage directive (complies with EN 61010-1) which underlie the CE-labelling.			
Sensor inputs	**hotcontrol cDT+ 06**	**hotcontrol cDT+ 12**	**hotcontrol cDT+ 18**	**hotcontrol cDT+ 24**
Number	6	12	18	24
Type	Typ J, Fe-CuNi (-35 … 500 °C) , Typ L Fe-CuNi (-35 … 500 °C), Typ K, NiCr-Ni (0 … 900 °C), Pt 100 optional			
Measurement accuracy	< 1 K			
Resolution	0,1 °C / 0,1 °F (°C / °F switchable)			
Power outputs	**hotcontrol cDT+ 06**	**hotcontrol cDT+ 12**	**hotcontrol cDT+ 18**	**hotcontrol cDT+ 24**
Number	6	12	18	24
Output information	230 V AC, 15 A per area; power loss per area with 15 A max. 20 W; With ambient temperature ≥ 45 °C max. output power 20 kW per heating thermocouple card.			
Output signal	Phase angle or pulse group output / zero-crossing switching			
Protection	Protection on card; 2-pole; 6.3 x 32 mm; Only use fuse type SIB FF 16 A Art. 7012540.16			
Simultaneity factor	Simultaneity factor = 100 % duty cycle permanent with ambient temperature ≤ 25 °C; For ambient temperatures > 25 °C, the simultaneity factor may reduce by up to 70 % dependent on the average degree of operation and its duration.			
Connections	**hotcontrol cDT+ 06**	**hotcontrol cDT+ 12**	**hotcontrol cDT+ 18**	**hotcontrol cDT+ 24**
Heating/sensors	24-pole Wieland			
Outputs	Machine approval/alarm message (4-pole HTS on the rear wall) Number: 1 potential-free relay contact 250 V AC/ 1 A			
Inputs	Digital input (9-pole D-SUB socket on the rear wall) Number: 2 0 … 30 VDC, low level 0 … 1 V DC, high level 4 … 30 V DC, I_{max} =12 mA at 30 V DC			
Interfaces	RS 485 (9-pole S-SUB socket on the rear wall) number: 1 CAN (9-pole S-SUB socket on the rear wall) number: 1 Ethernet (RJ 45 socket on the rear wall) number: 1			

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