

Operating Instructions



H 1270

Multi-zone control unit

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1. Introduction

The HASCO control unit Z 1270 ensures precision control and practically-orientated operation.

2. Special features

- 3 to 6 control zones
- Modular units with 3600 W / 16A per control circuit
- Permanent indicator for two monitoring states
OK - green / Error – RED
- Improved control characteristics
- Programmable soft start
- Power output in amps and % output level
- Unmistakable alarm diagnosis
- Alarm input and output as standard
- Manual or automatic switch to open-loop control
- Boost function
- Temperature reduction
- Sensor monitoring
- Heating monitoring



The H 1270... control unit satisfies the key protection requirements as per the EU Directives.

3. Technical data

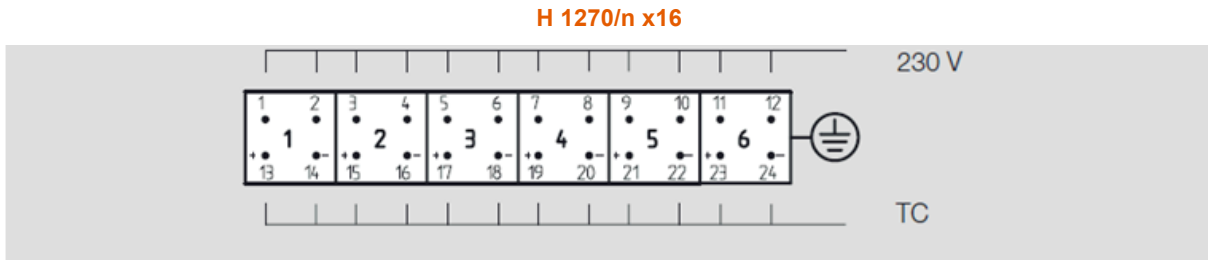
	H 1270/n x 16
Dimensions (W x H x D)	
Mains voltage standard	400V 3N ~ ±10% / 50Hz
Unit protection, external	32A / phase
Power output	Contactless semiconductor end step, 250V~, max. 16 A, zero-voltage switching
Thermocouple	Fe-CuNi type J
Operating range	30 – 500°C
Operating precision	< 1°C under optimum conditions
Ambient temperature	10 – 40°C
Power fuse	FF 16A / 500V
Control input	2 potential-free normally open contacts
Alarm output	1 potential-free normally open contact max. 50V 2A
Degree of protection	IP 21 / EN 60529

4. Electrical connection

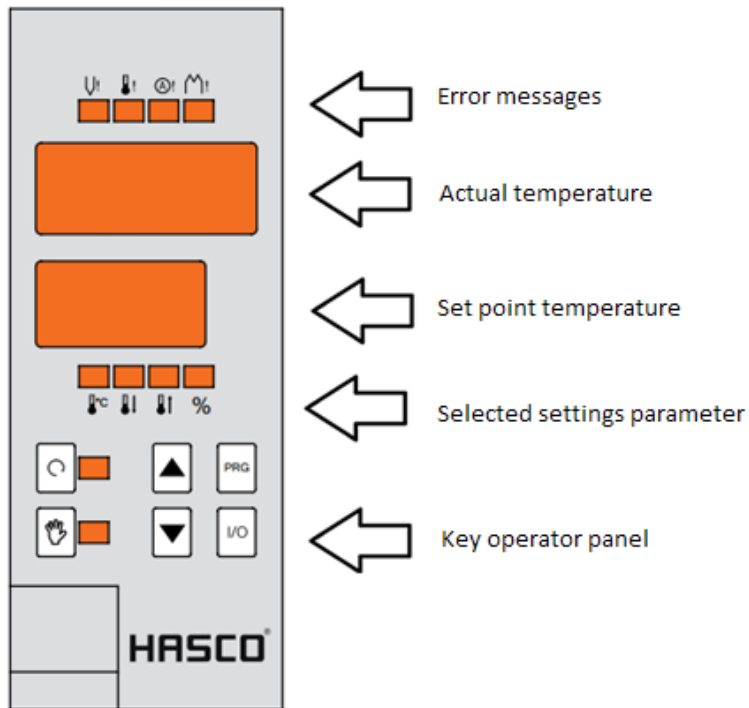
The power/signal connector Z 1225/... is used for the electricity and thermocouple connections between the mould and the control unit.

If all the control zones in the H 1270 /... are used, it is essential to observe the following:

The maximum power consumption of 21600 W must not be exceeded!



5. Function description of displays and buttons



5.1 Displays

LED strip



The LED strip shows two possible monitoring results.

Green = ready for operation

Red = alarm

Actual value display



Actual temperature in °C
Menu items parameter.

Setpoint value display



Setpoint temperature in °C
Power output in amps and heating output in % - see automatic control and PRG buttons.
Operating modes
MANUAL
Reduced temperature
Boost function
Parameter values

Alarm displays

Thermocouple error



Constantly lit for sensor fracture or reverse polarity, "- -" appears in the actual value display. If the automatic open-loop control function is activated, the current heating output of the module will appear after a short time. Alarm output active.

Temperature deviation



Lights up during the heating phase until the setpoint temperature has been reached. Is constantly lit if the set limit temperatures are exceeded or not reached. Alarm output active.

Excess current



Lights up if the set maximum current is exceeded. Alarm output active.

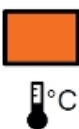
Heating circuit interrupted



Lights up in the event of a defective fuse FF16A on the module, heating failure or cable fracture. Alarm output active.

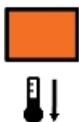
Function displays

Setpoint value



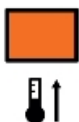
Temperature display °C

Second setpoint value temperature reduction



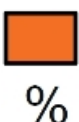
Display for lowering the setpoint temperature, factory setting 151°C. The temperature can be changed with the arrow buttons. This function is activated via an external switch - see Activating the reduced temperature

Third setpoint value temperature increase



Display for raising the setpoint temperature, factory setting 251°C. This can be changed with the arrow buttons. This function is activated via an external switch - see Activating the boost temperature

Heating output



This setpoint value display shows the current heating output in %.

5.2 Function buttons

On/off button



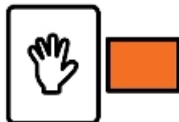
This switches the controller module on and off.

Up/down buttons



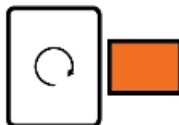
Select setpoint value for temperature.
Change parameter values.

Open-loop control button



Activate open-loop control

Automatic control / current key



Activate automatic control.
Current measurement.

6. Controller start-up

6.1 Switching on / soft start

After a careful check of the cables, connect the mould to the control unit.

Switch on the control unit at the main switch.

Use the arrow buttons to activate the setpoint display and enter the desired setpoint value.

The controller module is switched on and off with the I/O button and the soft start activated.

SOF appears in the setpoint value display. After the soft start has been completed, the setpoint value that was entered will be displayed.

The control unit now heats up the mould uniformly, drying out moist heating elements.

The "Temperature deviation" alarm display will light up.

Once the setpoint temperature that was entered has been reached, production can be run with the calculated parameters.

The "Temperature deviation" alarm display will go out.

If malfunctions occur during start-up, the reason for the error will be shown by the appropriate displays on the control unit (see Page 6).

The soft start can be bypassed by pressing the automatic control / PRG button combination.

The automatic control button must be pressed first in this case.

After switching the unit off and on with the mains switch, the soft start will be active again.

The soft start can be permanently deactivated via parameter 17 (page 8).

Note! The soft start provides protection for the electric components.

It is recommended to run a soft start!

6.2 Open-loop control

Manual operation is called up by pressing the "Open-loop control" button. The desired heating output (%) is set with the aid of the arrow buttons.

7. Programming



Programming mode is activated by pressing the **PRG** button (for about 3 sec.).

The first menu item "**P00**" appears in the actual value display. The setpoint value display shows the value of the parameter.

This can be changed with the arrow buttons.

Pressing the **PRG** button twice again will call up the next parameter.

To exit program mode, press the **PRG** button for approx. 3 sec.

The control unit confirms that the changed parameters have been permanently saved through the decimal point in the top right-hand display blinking for a short time.

The temperature control continues to operate normally in parameter mode.

7.1. Factory settings

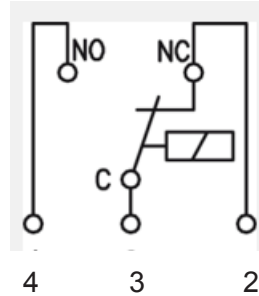
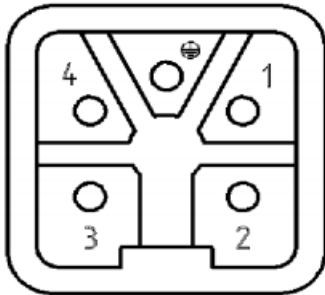
To return all the parameters to the factory setting, keep the "PRG" button pressed when the operating voltage is switched on.

8. Menu items

	Menu items	ex-works	Value range	Comment
P00	Offset cold junction temperature	0	-9.9 – 9.9	°C
P01	Free			
P02	Determine control parameters again	0	0 - 1	1= activated
P03	Edit established dead time	X	0 - 100	
P04	Enter dead time manually		0 - 100	
P05	Display residual time soft start	X		sec.
P06	Soft start duration	300	120 - 999	sec.
P07	Upper temperature alarm limit	10	0 - 500	0 = deactivated
P08	Lower temperature limit	10	0 – 500	0 = deactivated
P09	Temperature alarm mode	1	0 = Off / 1 = ON	
P10	Min. load current	0.3A	0 – 16A	0 = deactivated
P11	Max. heating output for soft start	35%	0 – 100%	
P12	Max. heating output after soft start	100%	0 – 100%	
P13	Max. heating output with open-loop control	0%	0 – 100%	
P14	Identifier for external setpoint	2	2 - 3	
P15	Language	0	0 - 1	0 = German 1 = English
P16	Display brightness	0	0 - 1	
P17	Soft start ON = 1 / OFF = 0	1	0 - 1	
P18	No soft start from actual temperature	100°C	50 – 100°C	
P19	Max. setpoint value	500°C	30 – 500°C	
P20	Automatic open-loop control	0	0 - 1	0 = deactivated

9. Connector pin assignment

Control unit alarm output



Potential-free relay contact max. 50V 2A

UNTEMP

Start-up to setpoint valuePin 3+4 **C active**

Setpoint value attained. Pin 2+3 **O active**

If the temperature falls below

the temperature alarm range.. Pin 3+4 **C active**

OVTEMP

Start-up to setpoint value Pin 3+4 **C active**

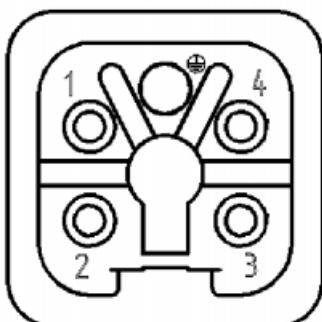
Setpoint value reached. Pin 2+3 **O active**

If the temperature falls below the

temperature alarm range..... .Pin 3+4 **C active**

Connecting the injection moulding machine to the control unit

Normally open contacts



Reduced temperature.....Pin 3+4

Boost..... Pin 2+4

10. Safety information

Connecting cable Z 1225 / . . . and connection housing Z 1227/ . . . are to be used for the electrical connections (power and thermocouple connections) between the control unit and the mould.

This will ensure optimum control accuracy.

The control units are coordinated with the HASCO standard components range.

If parts from other manufacturers are used, perfect operation cannot be guaranteed.

Connection, repair and maintenance work may only be carried out by trained electrical technicians.

During work on the control unit and on the cables, devices, machines and tools connected to them, all parts must be disconnected from the mains power.

The system must also be safeguarded against being unintentionally turned on again.

The power/signal connectors Z 1225 / . . . must be regularly inspected for mechanical damage and replaced when necessary.

The units must be free-standing to ensure sufficient ventilation and cooling.

The control units must be protected against dampness and wet.

The units are to be used in a technically meaningful way.

Before changing the fuse, disconnect the unit from the mains power.

11.15 / Lin

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