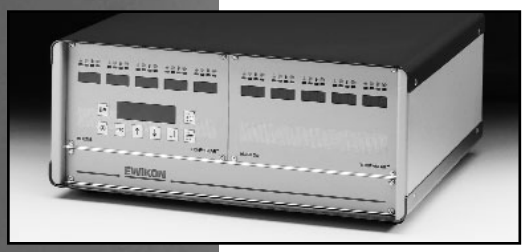
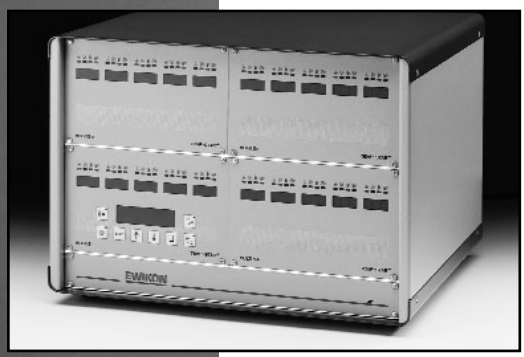
EWIKON





Operating manual for Multi 5 hotrunner controllers

EWIKON

EWIKON

Table of Contents

General Information

Controller

Specifications

Connections

Important operating instructions! Read carefully!

Safety Instructions

- Please read these Operating Instructions carefully prior to using your EWIKON Multi 5 controller!
- Always withdraw the mains plug before performing any service work on the controller, particularly before opening the housing.
- Always disconnect the controller from the mains before replacing fuses.
- Before inserting the mould cables, be sure to verify that all connectors have been properly connected (see "Connections").
- Check power cord and mould cables for potential defects at regular intervals! Replace cable if the cable sheath is found to be in any way defective!

General Instructions

- For each load (nozzle or manifold) to be connected, a separate control zone is required.
  A "control zone" comprises a temperature sensor input and a load output including a fuse.

- When connecting the mould cables, be sure to assign them to the correct connectors. When viewed from the front, the control zones are counted from left to right, starting at the bottom (see "Connections").

- Unused control zones must be switched off.

- For the load circuits, a heat-resistant flexible cable must be used for connection. For the temperature sensors, a special compensating lead is required (see "Accessories")!

Start-Up

After verifying that all cables are intact and have been properly connected, connect the mould to the controller. If required, a connection can also be made to the machine by using the optional alarm connector. Connect the mains cable to the power supply, then switch on the controller by means of the main switch located on the rear panel.

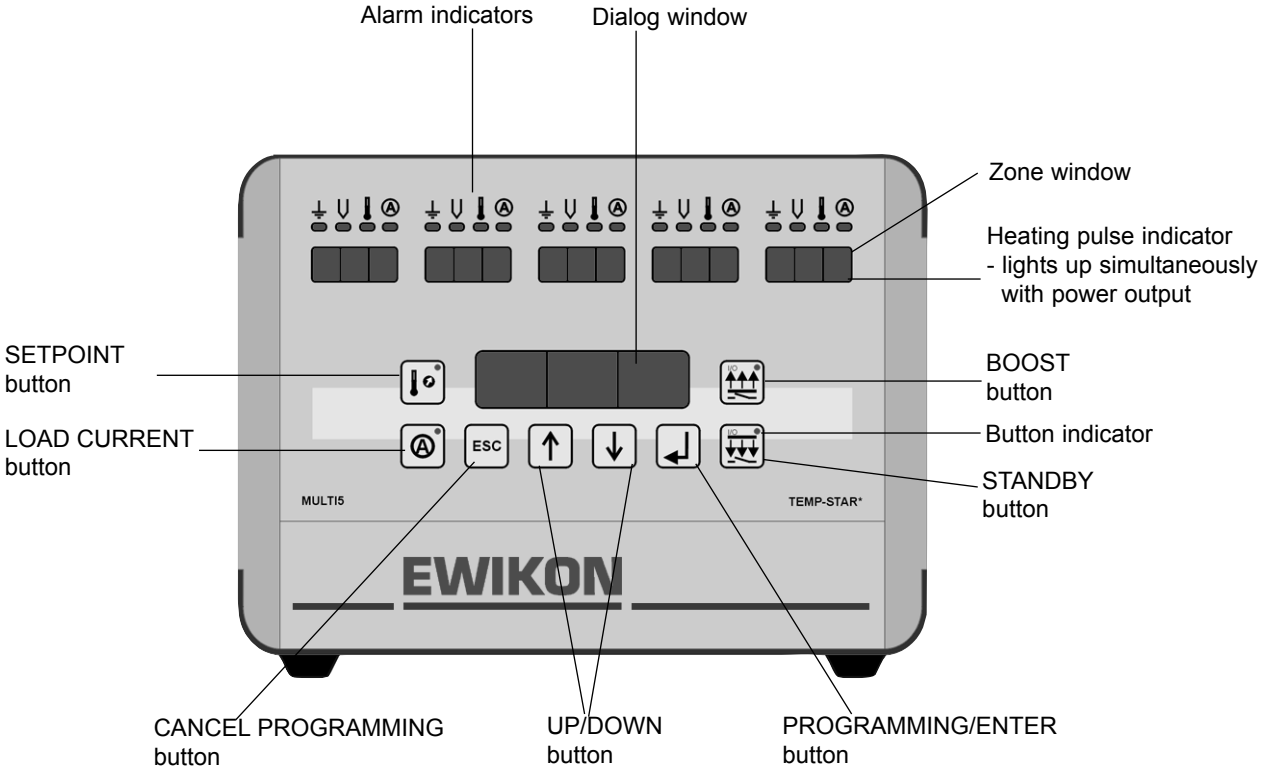
Select the desired setpoint. Note that all unused control zones must be switched off (see "Selecting Setpoints & Activating Control Zones").

The controller now begins to heat up the mould in a uniform manner, thereby drying any heating elements that may still be moist. During this process, the "temperature alarm" indicator lights will be flashing for all active zones (soft-start-ramp). In the corresponding zone windows, the temperature (actual value) will be displayed in °C, while "OFF" is indicated for all switched-off modules.

Upon reaching the pre-set temperatures, the production process can be started on the basis of factory settings.

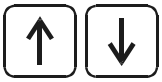
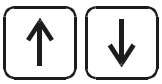
Should an error occur during the start-up procedure, the cause of the trouble will be indicated by the indicator lights of the respective zone (see "Alarm Indicators").

Front Panel



EWIKON

Setting Setpoints & Activating Control Zones

Button	Command	Display / Result
	Display setpoint	Upon pressing this button, the setpoints are displayed in the zone windows of the active zones (or "OFF" for the non-active zones). The button indicator lights up.
	Zone identification	"ALL" appears in the dialog window and the respective zone number is indicated in the zone windows.
	Select zone	The selected zone is indicated in the dialog window, or "ALL" is displayed for all zones.
 2 x	Confirm zones	"TEMP" is displayed in the dialog window and the set to be changed setpoint values are flashing in those zone windows where changes are to be made (all in case of "ALL").
	Set setpoint	Modified setpoints are flashing. **Setpoint "OFF" deactivates the respective zone!**
	Store *	The changed setpoints are stored in the system's memory and displayed statically in the zone window; the dialog display goes out.
	Setpoint OFF	The actual values are now displayed in the zone windows of the active zones, and "OFF" for all non-active zones.
	*** Exit programming without storing:**	
ESC	Cancel	The unchanged setpoint values are displayed in the zone windows, while "OFF" is displayed for all deactivated zones.

Function Keys

Button indicator lights up upon activation of respective button ("ON").

	Display setpoint	The setpoints are displayed in the zone windows of all active zones, while "OFF" is displayed for all non-active zones.
	Display load current	The actual load-current value is shown in the zone windows of the active zones.
	Boost function active	Increases temperature temporarily. (also externally via alarm connector)
	Standby active	Decreases temperature permanently. (also externally via alarm connector)

Alarm Indicators

Earth fault
Lights up if the heating-element-to-earth resistance drops below 100 kW, the power supply is interrupted two-pole in addition.

Thermocouple
Lights up in the event of sensor breakage; at the same time, "- - -" is shown in the zone window. In automode, the information displayed alternates between " - - - " and " - A - ". This indicator also lights up if polarity reversal has occurred. In this case, the room temperature is displayed in the zone window.

Temperature deviation
Flashes during the heating-up phase of the soft-start ramp. Lights up continuously if the temperature exceeds or falls below set limits (see "Changing Settings"). In case of overtemperature, the power supply is interrupted two-pole in addition.

Overcurrent
Lights up if the set maximum value is exceeded (see "Changing Settings") or a load error occurs. In case of overcurrent, the power supply is interrupted two-pole.

Programming Menu

Menu Item	Designation	Function	Range	Standard (Factory setting)
The following functions can only be set globally for all zones				
OVTEMP	Overtemp. alarm	Limit value, alarm output 1	0-25°C above setpoint	10°C
UNTEMP	Undertemp. alarm	Limit value, alarm output 2	0-25 °C below setpoint	10°C
RMPEND	Ramp end	Final temperature, ramp 1	120 - 160°C	120°C
RMP T1	Rise, ramp 1	Heating speed, ramp 1	2-10 seconds for 1°C	4 seconds
RMP T2	Rise, ramp 2	Heating speed, ramp 2	2-10 seconds for 1°C	2 seconds
RMPPSE	Ramp pause	Pause between ramps 1 + 2	0-4 minutes	1 minute
AUTO	Automode *	Automatic control in case of sensor breakage (based on average output power)	1 = On; 0 = Off	0 (Off)
ADRESS	Adress	Block address	1 - 10	Product-spec.
TEMPDN	Standby temperature	Reduction to "x" % of setpoint	0 - 90%	50%
The following functions can be set individually for each zone				
TEMPUP	Boost function	Temperature above setpoint	10 -60°C	20°C
UPTIME	Boost time	Duration of boost process 0 -	180 seconds	20 seconds
CURR	Overcurrent	Limit value	5 - 16 A	16 A
TMPMAX	Upper setpoint limit	Max. setpoint setting	100 - 600°C	400°C

* The automode function is available only if the controller has been operated for at least 15 minutes on a trouble-free basis!

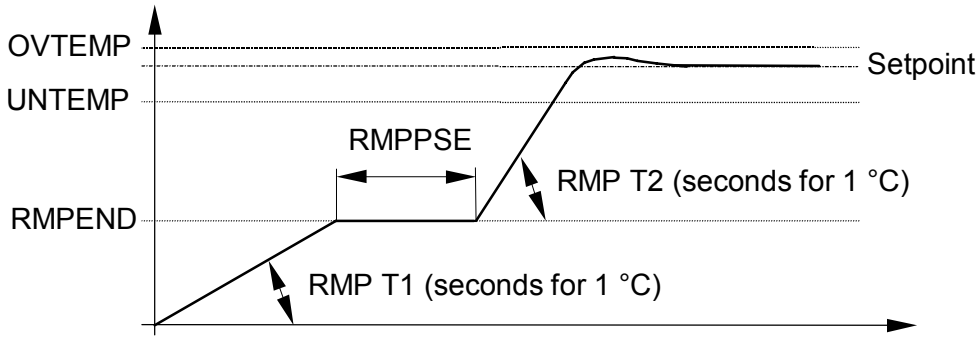
Changing Settings

Button	Command	Display / Result
↵ For more than 3s	Change	"ALL" is displayed in the dialog window, while the zone settings numbers are shown in the zone windows.
↑ ↓	Select zone	The number of the selected zone is displayed in the dialog window (or "ALL" for all zones).
↵	Confirm zones	The first menu item is shown in the dialog window. In the zone windows, the actual values are displayed (or "OFF" for all non-active zones).
↑ ↓	Select menu item	The respective menu item is shown in the dialog window.
↵	Confirm menu item	The currently used settings are flashing in those zone windows where changes are to be made; if global settings relating to all zones are concerned, only the central zone window located above the dialog window will be flashing.
↑ ↓	Change value	Changed settings are displayed in flashing mode.
↵	Store *	The changed settings are stored in the system's memory and the actual values are displayed in the zone windows (or "OFF" for all non-active zones).
ESC	Select zone	The number of the zone whose setting has been changed appears in the dialog window (or "ALL" for all zones).
ESC	Exit setting mode	Dialog display goes out. Normal operation.

*** Exit programming without storing:**

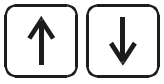
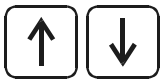
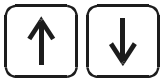
ESC	Cancel	Returns the user to previous programming step. Any changes made are ineffective.

Soft-Start Ramp



Manual-Mode

ATTENTION: In this mode the hotrunner is not controlled and not switched off in case of overtemperature.
So overtemperature and damaging is possible!

Button	Command	Display / Result
	Display setpoint	Upon pressing this button, the setpoints are displayed in the zone windows of the zones (or "OFF" for the non-active zones). The button indicator lights up.
	Zone identification	"ALL" appears in the dialog window and the respective zone number is indicated in the zone windows.
	Select Zone	The selected Zone is displayed in the dialog window. Setting Manual-Mode is only possible in one zone after one!
	Confirm Zone	In the dialog window "TEMP" is displayed.
	Select function	PULS = Manual Mode. TEMP = Setting setpoints.
	Confirm function	In the activated zone window flashes "OFF".
	Set power value	In percent (P01 ... P99 = 1 ... 99%)
	Store *	The changed power value is stored.
	Setpoint OFF	The zone windows working in Manual-Mode are flashing. The display will toggle between the actual temperature and "P". In case of damaged Thermo-couple between "P" and " - - - ". The other zone windows shows the actual values, or "OFF" for all non-active zones.

The Manual-Mode will be cancelled by switching off the unit with the main switch!
*** Exit programming without storing:**

	Cancel	The unchanged setpoint values are displayed in the zone windows, while "OFF" is displayed for all deactivated zones.

EWIKON

Specifications

Housing: Metal half-shell housing
MULTI 5: approx. 250 x 200 x 420 (WxHxD)
MULTI 10: approx. 470 x 200 x 420 (WxHxD)
MULTI 20: approx. 470 x 330 x 420 (WxHxD)

Connection: Load and Sensor (T/C) separate; 10-, 24-pole (depending on the number of zones provided)

Supply voltage: 400 VAC +/-10%, 50 Hz

Rating: MULTI 5: max. 32 A per phase; max. 50 A total!
MULTI 10: max. 32 A per phase
MULTI 20: max. 32 A per phase

Supply connector: CEE 32 Ampere

Thermocouples: Fe-CuNi Type J (DIN 43714)

Power output: Contactless semiconductor output stage, 20...250 VAC; max. 16A, zero-switching

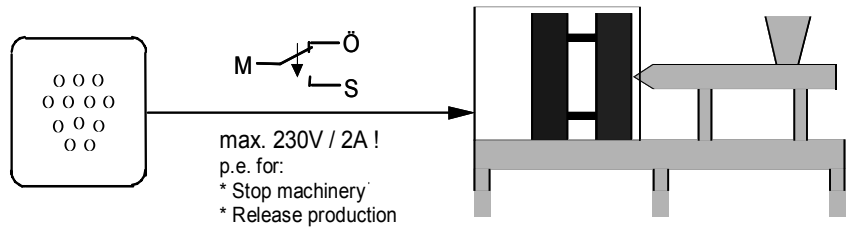
Control range: 20...600°C

Control accuracy: Better 1°C (if hot runner system is corresponding to)

Working temperature: 10...50°C

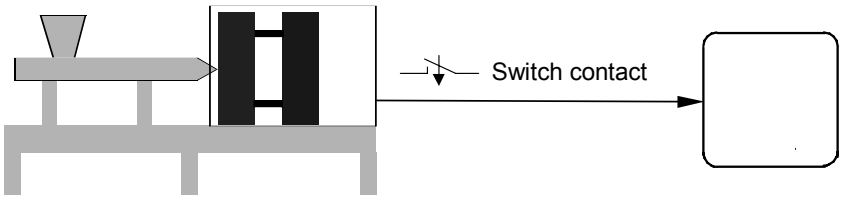
Connections

Alarm Connector 12-Pole (Mating Connector or complete cable see Accessories)
Alarm Output: 1 = overtemperature , 2 = undertemperature



PIN	Colour	Function
1	blue	Ö - Alarm 1 (OVTEMP)
2	pink	M - Alarm 1 (OVTEMP)
3	grey	S - Alarm 1 (OVTEMP)
6	red	S - Alarm 2 (UNTEMP)
7	black	M - Alarm 2 (UNTEMP)
8	violet	Ö - Alarm 2 (UNTEMP)

Input: 1 = Standby, 2 = Boost

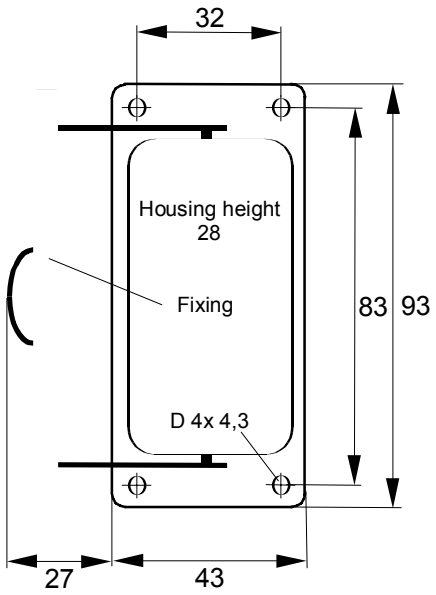


PIN	Colour	Function
4 + 5	white+brown	E1 - Standby
10 + 12	green+yellow	E2 - Boost

EWIKON

Connections Multi 5

10-pole

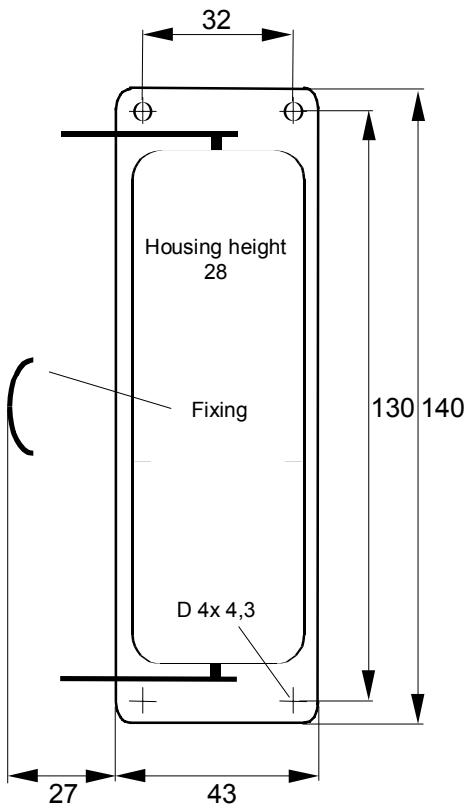


Zone	Load PIN	T / C PIN
1	1 / 6	1(+) / 6(-)
2	2 / 7	2(+) / 7(-)
3	3 / 8	3(+) / 8(-)
4	4 / 9	4(+) / 9(-)
5	5 / 10	5(+) / 10(-)
	Ground connect to housing	

EWIKON

Connections Multi 10, 20

24-pole



Zone	Load PIN	T / C PIN
	Connector 1	
1	1 / 13	1(+) / 13(-)
2	2 / 14	2(+) / 14(-)
3	3 / 15	3(+) / 15(-)
4	4 / 16	4(+) / 16(-)
5	5 / 17	5(+) / 17(-)
6	6 / 18	6(+) / 18(-)
7	7 / 19	7(+) / 19(-)
8	8 / 20	8(+) / 20(-)
9	9 / 21	9(+) / 21(-)
10	10 / 22	10(+) / 22(-)
	Connector 2	
11	1 / 13	1(+) / 13(-)
12	2 / 14	2(+) / 14(-)
13	3 / 15	3(+) / 15(-)
14	4 / 16	4(+) / 16(-)
15	5 / 17	5(+) / 17(-)
16	6 / 18	6(+) / 18(-)
17	7 / 19	7(+) / 19(-)
18	8 / 20	8(+) / 20(-)
19	9 / 21	9(+) / 21(-)
20	10 / 22	10(+) / 22(-)
	Ground connect to housing	

EWIKON Heißkanalsysteme GmbH & Co. KG
Siegener Straße 35
35066 Frankenberg
Tel: (+49) 64 51 / 50 10
Fax: (+49) 64 51 / 50 12 02
E-mail: info@ewikon.com
www.ewikon.com

Your EWIKON-partner:

EWIKON 12/2001

EWIKON