



Features

The program controller C 19:

- is an electronic temperature program controller
- operates together with a separate power switchgear
- has 9 memory locations for one program each (max. 6 times and 6 temperatures)
- can combine 3 programs together so that a max. of 18 temperature-time points can be called up in succession
- can control peripheral equipment (e.g. cooling fan on/off) via the extra function
- permits each temperature to be higher or lower than the previous temperature

The program controller S 19:

- has an electronic contactor relay which has a switching capacity of up to 3,6 kW (single-phase) and no separate power switchgear
- Differs from C 19 only in the way it is switched on/off

Program controllers C 19 and S 19 differ in their handling only in the way they are switched on/off:

- C 19 by means of a key-operated switch
- S 19 by means of a rocker switch

Safety

Safety of operation

The C19/S19 switches:

- to the next time section only when the set temperature has been reached (temperature priority)
- the furnace on again (having been switched off manually or due to power failure) during a program cycle only
- if the interruption took place at time 0 (time 0 stops running during the power interruption)
- if the temperature is higher than 100°C and has dropped by less than 20°C.

Fault indications:

- F1: Furnace or switchgear defect (no temperature increase)*
- F2: Insufficient furnace capacity (firing time greater than the sum of time 1 to 6 plus 18 hours)*
- F3: Thermocouple defect (measuring circuit interrupted)*
- F4: Thermocouple reversed*
- F5: Temperature entered higher than permissible**
- F6: Controller defect**

Fault clearance:

- * Call service technician
- ** Enter lower temperature

	Press button	Response	Remark
Entering a programme 1. Switch on C 19 by means of key-operated switch; S 19 by means of rocker switch 2. Enter time required within which the next temperature shall be reached (in this case 30 minutes) 3. Enter temperature (in this case 500°C) 4. Continue as under point 2	0 C 19	Furnace temperature appears on display	To maintain a constant temperature (e.g. for 40 minutes at 500°C): Enter steps 2 and 3 as shown on the left, then enter time 2, 40, T2, 500
	time 1 3 0	Relevant diode flashes 30' appears on display	
	T1 5 0 0	Relevant diode flashes 500°C appears on display	To maintain a constant temperature for an unspecified time (e.g. at 500°C): Enter steps 2 and 3 as shown on the left, then enter time 2, 9999, T2, 500
	T2 on	Relevant diode flashes Diode extra 1 flashes	
If switching on of peripheral equipment shall be controlled by temperature (in this case when T2 has been reached) If switching on of peripheral equipment shall be controlled by time (in this case when time 3 has been reached)	time 3 on	Relevant diode flashes Diode extra 1 flashes	Peripheral equipment is switched off when T3 has been reached or time 3 has expired. Peripheral equipment can be switched on whilst the programme is running with the ON button.
	start/enter	Furnace switches on. Temperature appears on display	

	Press button	Response	Remark
Storing a programme (in this case in memory location 7)		S=7 appears on display	Time for automatic start-up cannot be stored. Starting a programme by pressing again key start/enter.
Calling-up a stored programme (in this case from memory location 5)		P=5 appears on display	Starting a programme by pressing again key start/enter.
Checking entered values Check temperature value (in this case for T3)		Temperature value appears on display	The value called-up is indicated for a period of 10 secs.
Check time value (in this case for time 4)		Before start: programmed value is indicated / After start: remaining time is indicated	The program is not interrupted by the checking procedure.
Altering values in stored programme Call-up programme (in this case programme 4) Alter value (in this case T2 to 950°C) Store programme		Old value T2 is indicated then 950°C appears on display	If any alteration is made while a program cycle is running, the button start/enter must be pressed afterwards.
Switching-on the furnace automatically Enter waiting time (in this case the furnace will switch-on automatically after 120 minutes)		120' appears on display Remaining time appears on display	The starting time can be set before each programme and cannot be stored.
Locking a running programme Lock programme			To cancel locking: switch off controller.
Combining programmes together Combine programmes (in this case programmes 5,7 and 4)		P 5-7-4 appears on display Respective programme and furnace temperature appear on display	Maximum 18 temperature-time points can be called up in succession.
Start program			
Interrupting a programme		PO and Tmax. on display	A running programme will immediately be interrupted.
Deleting a programme Call-up programme (in this case programme 6)		PO and max. permissible furnace temperature appear on display	If a stored programme shall be deleted. A running programme will be immediately terminated.
Delete programme			