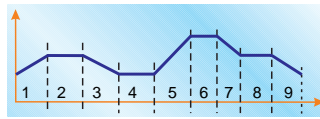


PROGRAMMER

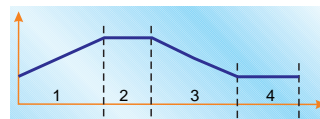
Program flexibility

These instruments allow to create programs with different number of segments. For example, 4 programs are created.

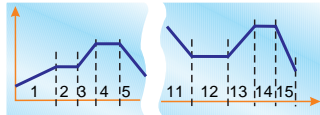
The program N° 1 is composed by 9 segments.



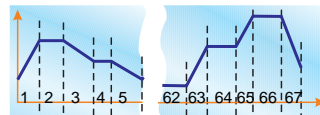
The program N° 22 is composed by 4 segments.



The program N° 8 is composed by 15 segments.



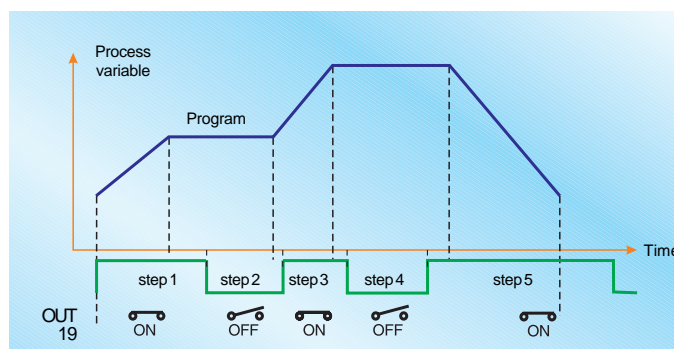
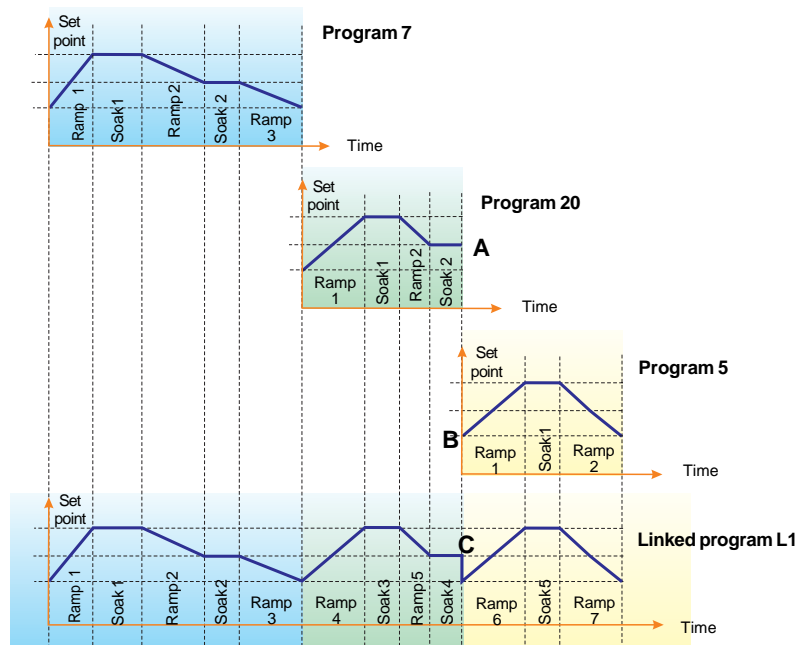
The program N° 45 is composed by 67 segments.



The 105 remaining segments (95 of 200 are used) can be used to create new programs or to modify the already existing one's.

Linked programs

Right side is shown a linked program (L1). It is formed of 3 single programs (7, 20 e 5). If a difference between the final set point of a program (A) and the initial set point of the next program (B) occurs; the wait function will guarantee the correct execution of the first segment of the next program (C).

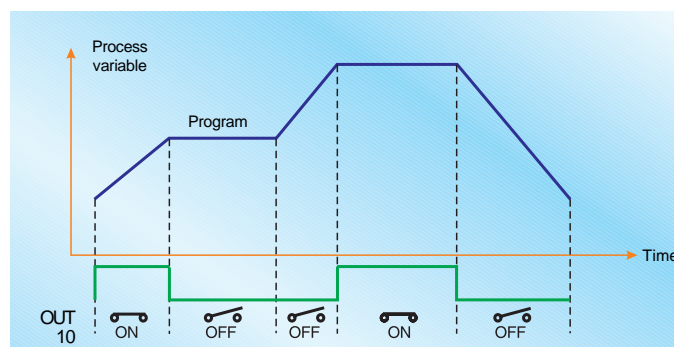


Timer events

This function allows to associate to a program one or more outputs selected as timer event (ex. OUT 19).

These timers are synchronized to the program starting and each one of them is composed of 5 steps maximum and they are independent of the program profile.

Each step is associated to an output state, as shown in the example, and it is programmable from 1 second to 99 hours and 59 minutes.



Break events

With this function it is possible to associate to each segment the state ON or OFF of one or more outputs selected as break event (ex. OUT 10).

PROGRAMMERS SPECIFICATIONS

SEGMENTS

Up to 200 segments are available.

For each segment is possible to:

- set its duration in hours and minutes (up to 99 h and 59 m) or in minutes and seconds (up to 99 m and 59 s);
- relate to a group of PID parameters chosen among 5;
- relate to a wait band chosen among 10;
- relate to one or more break event.

SIMPLE PROGRAMS

Up to 90 simple programs are available.

For each simple program it is possible to:

- use a different number of segments up to 99;
- set the program repetitions;
- set the instrument behaviour after the last programmed cycle is carried out;
- relate to up to 14 timer events;
- relate to an end of cycle indication;
- relate to an end of profile indication;

LINKED PROGRAMS

Up to 9 linked programs are available.

- each linked program can include up to 9 simple programs.

FUNCTIONS AVAILABLE when a program is in progress

- EDIT** The Edit mode allows to create, to modify or to delete programs.
- WAIT** This function keep automatically frozen the progress of the operating program if the process value is outside the wait band. The progress of the program will automatically restart when the process value will return inside the wait band.
- HOLD** By this function it is possible to temporarily stop the operating program.
- ABORT** By this function the operating program is aborted, the instrument reverts to Edit mode.
- FAST** This function allows to reach, 60 times faster than the normal speed, a particular point of the profile, forward or backward, from where it is desired to restart the program.
- JUMP** By this function it is possible to jump from the operating segment to the beginning of the next or the previous segments.

PROGRAM SELECTION BY LOGIC INPUTS

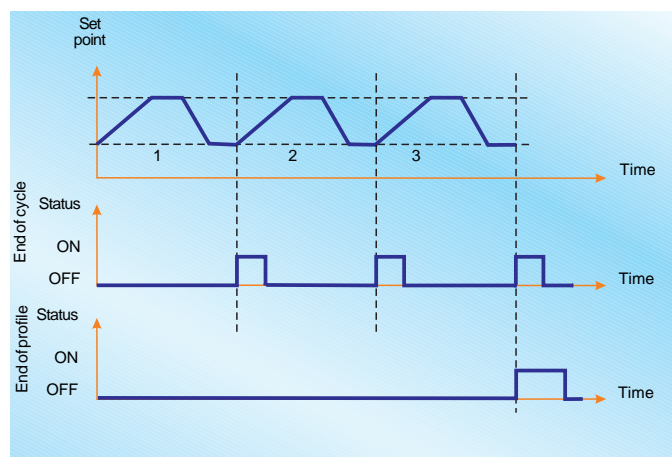
This function allows to select by an external device (ex. PLC) the operating program acting through logic inputs.

Each logic input used for the program selection is related to a weight of binary code.

In the example below, the logic inputs Dig 2, In 1 and In 4 are used for program selection.

Programs	Input	Weight	Input	Weight	Input	Weight
	Dig 2	2 ⁰	In 1	2 ¹	In 4	2 ²
1	On		Off		Off	
2	Off		On		Off	
3	On		On		Off	
4	Off		Off		On	
5	On		Off		On	
6	Off		On		On	
7	On		On		On	

END OF CYCLE AND END OF PROFILE FUNCTIONS



This example shows a program formed by 4 segments and it is repeated for 3 times.

END OF CYCLE

This function allows to automatically get an indication, by a digital output, whenever a program cycle is ended. The status (ON or OFF) of the output and its duration can be programmed.

END OF PROFILE

This function allows to automatically get an indication, by a digital output, whenever a profile is ended. The status (ON or OFF) of the output and its duration can be programmed.

SPECIAL FUNCTIONS

Clock calendar (Optional)



By this function, the operator presence is not required to start the operating program.
For the automatic starting it is possible to set:

- 1) the day of the week selected among:
 - one day only (monday, tuesday, etc..)
 - daily
 - daily without sunday
 - daily without saturday and sunday

- 2) the starting time
- 3) the operating program.

A lithium battery assures to the internal clock the correct working (even when the instrument power supply is OFF) for more than 10 years.

Output Power OFF

This operative mode simplifies the process management where zone switches or any other device to disable the process control are used.
This function disables the control outputs, the retransmissions, the alarms and the control algorithm at the same time.

In this mode, the instrument operates as an indicator and the process variable can be checked out even if the system is OFF or the zone is disabled.

When power up is resumed, the instrument sets to zero the integral action of the control signal and enables the soft start and alarm masking functions.

This function is particularly advantageous used in combination with the clock calendar function.

For example, by using a relay as output power OFF annunciator, it is possible to turn OFF the system (manually or automatically) and turn it ON automatically when the time programmed by clock calendar function is reached.

When the system is turned ON, the instrument starts the execution of the selected program and also activates all functions used at start up (soft start and alarm masking).

Additional outputs (optional)

For the MKP only, 5 + 5 digital outputs are available.

- Function:** singularly programmable as event output
- Type:** Relay type SPST.
- Contact rating:** 0.5 A @ 250 V AC on resistive load.
- Note:** The C side of all relays is connected in common.

Events

All the digital outputs can be programmed as events.

It is possible to set an event choosing among the following types:

- Break event
- Timer event
- End of cycle annunciator
- End of profile annunciator
- Program run annunciator
- Program wait annunciator
- Output Power OFF mode annunciator
- Error condition on the main input (overrange, underrange, open or short circuit).
- Error condition on both measuring inputs.
- Auto/Manual mode annunciator.

Logic inputs

- Function:** these instruments are supplied with 3 standard logic inputs, programmable as:
 - auto/manual selection
 - output limiter activation
 - manual reset of alarm (acknowledgement)
 - reverse/direct control action
 - run/hold program selection (level or transition programmable).
 - program selection
 - program abort
- Input type:** contact closure (voltage free)
- Active contact status:** close or open programmable

Additional inputs (optional)

For the MKP only 4 + 4 logic inputs are available.

- Function:** Each additional logic input can be programmed as:
 - run/hold program selection (level or transition programmable)
 - program selection
 - program abort

- Input type:** contact closure (voltage free).
- Active contact status:** close or open programmable.