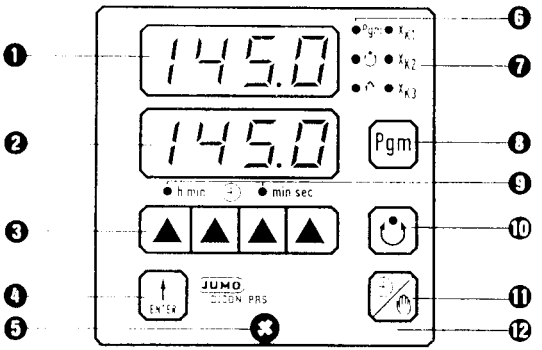
JUMO DICON PRS
Microprocessor Program Controller



❶ **Numerical display**
4-digit LED display for process, residual section time, section und program number

❷ **Alphanumerical display**
4-character LED display for setpoint or comments on numerical display

❸ **Increment keys**
for data input

❹ **ENTER key**
for entering inputs, selection of parameter and configuration plane

❺ **Fixing screw**
for program controller chassis

❻ **LEDs**
for programming, automatic and manual operation

❼ **LEDs**
for the switched outputs

❽ **Programming key**
for program input and parameter selection

❾ **LEDs**
for the selected time base

❿ **Auto start/stop key**

⓫ **Changeover to manual operation, changing the time base**
h:min / min:sec

⓬ **Membrane key panel**
front protection IP 54

D 95.640.1
7.90/V
Brief Operating Instructions

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Program input

Before programming, the curve has to be marked in graphic and tabular form in the program data table.

The control range is shown on the instrument label. Setpoints outside the set range are not accepted; the display flashes the permitted value. The setpoints and the sign are selected with the increment keys.

The time column of the program data table must be marked to indicate whether the values are given in min:sec or h:min. During the subsequent data input it must be noted that not more than 59 sec or 59 min can be programmed. This means, for example, an entry of 2:10 for a section time of 130 sec.

Each program section is defined by:

❶ the section number (Sc) starting with 0

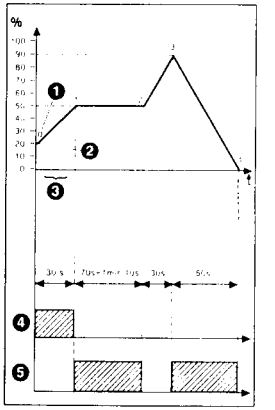
❷ the setpoint (SETP)

❸ the section time (TIME) in h:min / min:sec

❹ the status of operating contact 1 (Out 1)

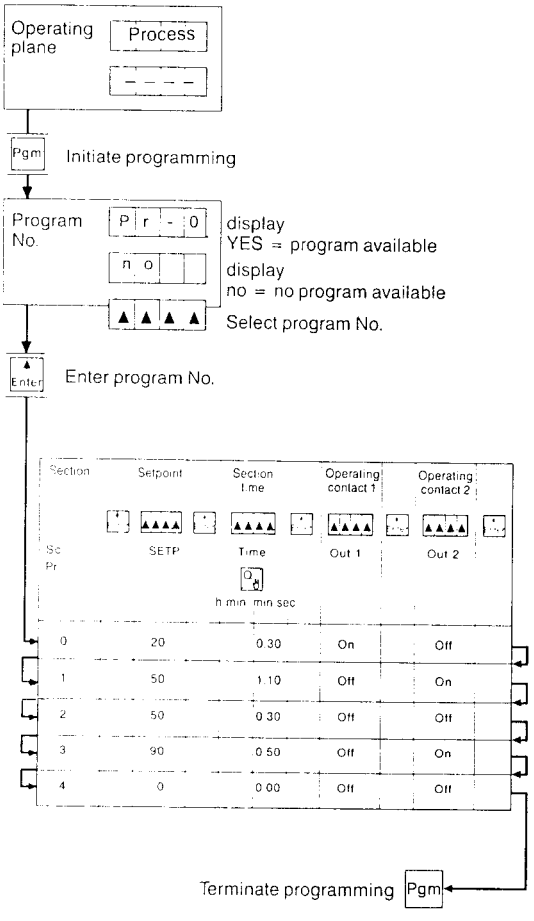
❺ the status of operating contact 2 (Out 2)

Depending on the configuration up to 4 operating contacts are available.



Data check and data correction of setpoint curve

The data check is performed in the same way as the programming of the setpoint curve. If required the values for setpoint, time and operating contact are simply overwritten.



Programming can be aborted at any time with the Pgm key.

Program start and abort

Select automatic operation and input the program number.
If required activate the start delay (on the display the time is counted in minute steps down to 0:00).

The program can be aborted at any time with the key.

The program can be stopped and held at any time with the key.

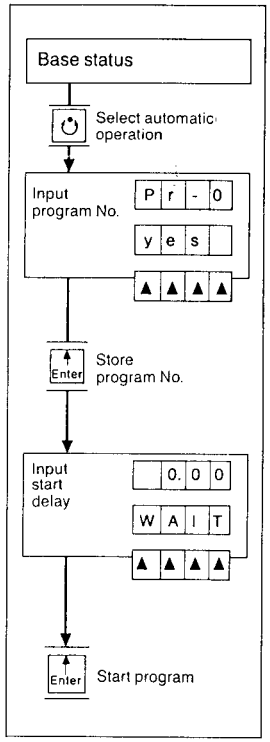
This can be followed by static changes, see Operating Instructions D 95.640, Item 5.3.5.

Displays during automatic operation

Using one of the increment keys

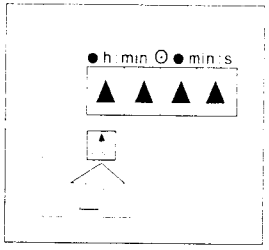
▲ ▲ ▲ ▲

the following parameters can be called up during automatic operation:
- process
- setpoint
- residual section time
- section No.
- program No.



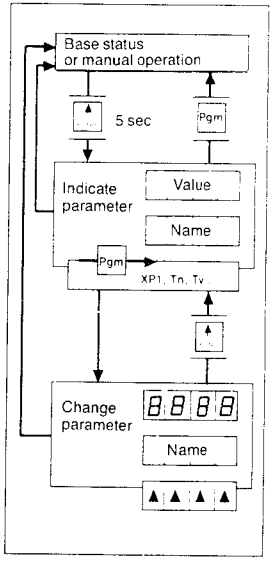
PARAMETER PLANE

Access to the parameter plane is obtained by pressing the "ENTER" key for 5 seconds. It can be selected from the base status or from manual operation. Access to the parameter plane is only possible if the plane is unblocked and if the data transfer of the factory-set parameters is switched off.



Displaying and changing parameters

The parameters are called up in sequence with the "Pgm" key. The parameters of the individual controller versions are listed in the Parameter Table alongside. After the last parameter the controller automatically returns to the standard display.
When one of the increment keys is pressed for changing the parameter, the parameter name (e.g. Tv, Tn) flashes in the bottom display. After the changed value has been stored with "ENTER", further parameters are displayed with "Pgm".
In case of inappropriate inputs the top display shows the minimum or maximum value permitted.



All the controller parameters of the parameter table alongside are indicated ("■" and "—"). In accordance with the controller version and the feedback structure, inputs are accepted only on "■", inputs on "—" are not accepted.

PARAMETER TABLE

Single-setpoint controller

Symbol	Parameter	Feedback action				Adjustment range[2]	Factory setting[2]
		none[1]	PD	PID	PD/PID		
XP	Proportional band	—	■	■	■	Xp = 0 – 9999 digit	0 digit
XD	Differential	■	—	—	—	Xd = 0 – 999.9 digit	1.0 digit
TV	Derivative time	—	■	—*	■	Tv = 1 – 999 sec	80 sec
TN	Reset time	—	—	■	■	Tn = 1 – 9999 sec	350 sec
CY	Cycle time	—	■	■	■	Cy = 0.1 – 99.9 sec	20.0 sec
Y1	Max. valve stroke	—	■	■	■	Y1 = 0 – 100 %	100 %

Double-setpoint controller

Symbol	Parameter	Feedback action				Adjustment range[2]	Factory setting[2]
		none[1]	PD	PID	PD/PID		
XP1	Proportional band (heating contact)	—	■	■	■	Xp1 = 0 – 9999 digit	0 digit
XP2	Proportional band (cooling contact)	—	■	■	■	Xp2 = 0 – 9999 digit	0 digit
XSH	Contact spacing	■	■	■	■	XSh = 0 – 999.9 digit	0 digit
XD1	Differential (heating contact)	■	—	—	—	Xd1 = 0 – 999.9 digit	1.0 digit
XD2	Differential (cooling contact)	■	—	—	—	Xd2 = 0 – 999.9 digit	1.0 digit
TV	Derivative time	—	■	—*	■	Tv = 1 – 999 sec	80 sec
TN	Reset time	—	—	■	■	Tn = 1 – 9999 sec	350 sec
CY1	Cycle time (heating contact)	—	■	■	■	Cy1 = 0.1 – 99.9 sec	20.0 sec
CY2	Cycle time (cooling contact)	—	■	■	■	Cy2 = 0.1 – 99.9 sec	20.0 sec
Y1	Max. valve stroke	—	■	■	■	Y1 = 0 – 100 %	100 %
Y2	Min. valve stroke	—	■	■	■	Y2 = 0 to – 100 %	– 100 %

Modulating controller

Symbol	Parameter	Feedback action				Adjustment range[2]	Factory setting[2]
		none[1]	PI	PID	—		
XP	Proportional band	—	■	■	—	Xp = 0 – 9999 digit	0 digit
XSH	Contact spacing	■	■	■	—	XSh = 0 – 999.9 digit	0 digit
XD	Differential	■	—	—	—	Xd = 1 – 999.9 digit	1.0 digit
TN	Reset time	—	■	■*	—	Tn = 1 – 9999 sec	350 sec

Proportional controller

Symbol	Parameter	Feedback action				Adjustment range[2]	Factory setting[2]
		P	PI	PD	PID		
XP	Proportional band	■	■	■	■	Xp = 0 – 9999 digit	100 digit
TV	Derivative time	—	—	■	■	Tv = 1 – 999 sec	80 sec
TN	Reset time	—	■	—	■	Tn = 1 – 9999 sec	350 sec
Y1	Max. valve stroke	■	■	■	■	Y1 = 0 – 100 %	100 %
Y2	Operating point	■	—	■	—	Y2 = 0 – 100 %	50 %

■ adjustable ▭ factory setting * $T_v = T_n/4.5$ [1] Xp = 0 means "feedback switched off"
[2] all parameters with "digit" have to be multiplied as follows: x0.1 when using 1 decimal place, x0.01 when using 2 decimal places etc.

Changing configuration data

Many changes in configuration data also require adjustment of other parameters. If, for example, the feedback action is changed, the control parameters must also be altered. If a parameter is omitted this would result in an undesirable or faulty control action. Select configuration parameter, change it if necessary, and enter the input with "ENTER".
Following an incorrect input the top display flashes and requests correction of the input.
On pressing "Pgm" the next parameter is indicated.
The status as supplied from the factory can always be restored by reading in the factory-set parameters. In Sub-directory UV 06, changing the limit comparator function lk results in a request for the input of the parameters lk switching differential and lk value, as shown by the operator guidance (both displays flashing).