JUMO DICON 1000

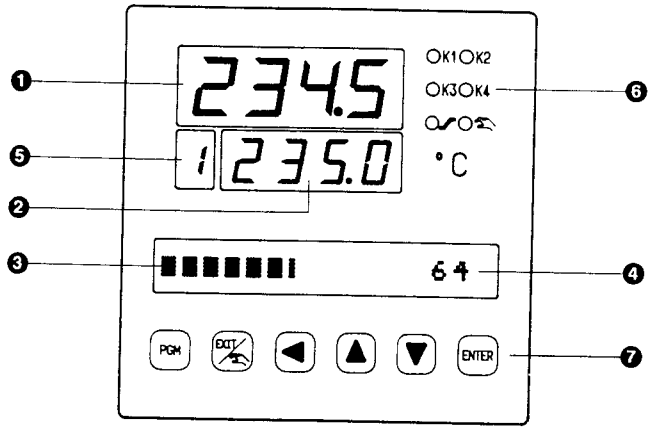
Universal Process Controller

B 70.3560.1

Operating Instructions

5.96 / H 00318821

DISPLAYS AND KEYS



Displays

❶	234.5	Display, configurable (factory-set: process value)
❷	235.0	Display, configurable (factory-set: setpoint)
❸,❹	64	Dot matrix display, configurable (factory-set: output, bargraph / decimal value))
❺	1	Channel display lights up when controller 2 is activated

Status indications

❻	OK1 . . . OK4	Lights up when switching outputs 1 to 4 are activated
	O⎍	Lights up during ramp function
	O☜	Lights up during manual operation

Keys

❼	PGM	Programming	◀	Digit
	EXIT	EXIT/ manual	▲	Increment
	ENTER	ENTER	▼	Decrement

LEVELS AND MENUS

Initial status

The current setpoint can be selected here.

This level can be used to indicate measurements, alter parameters and activate functions and operating modes:

Protected by code

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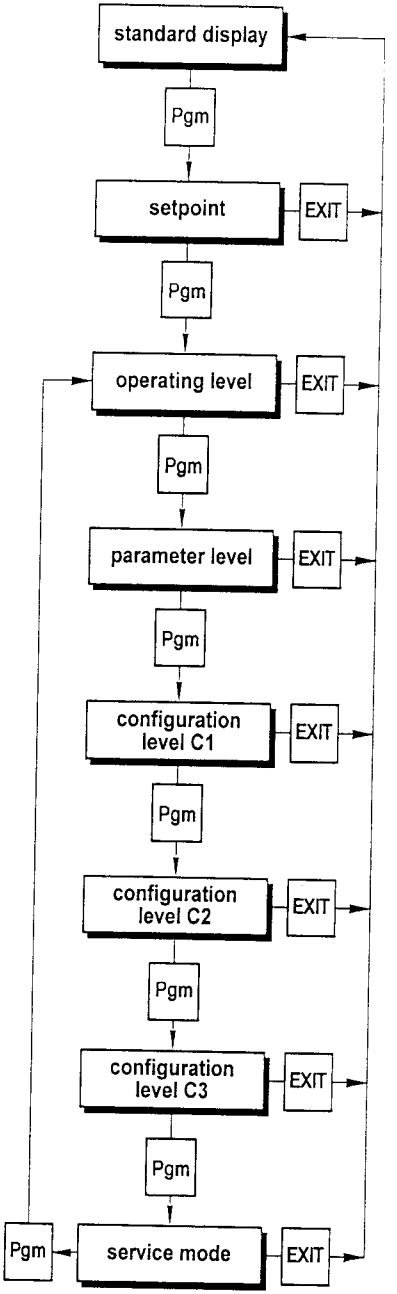
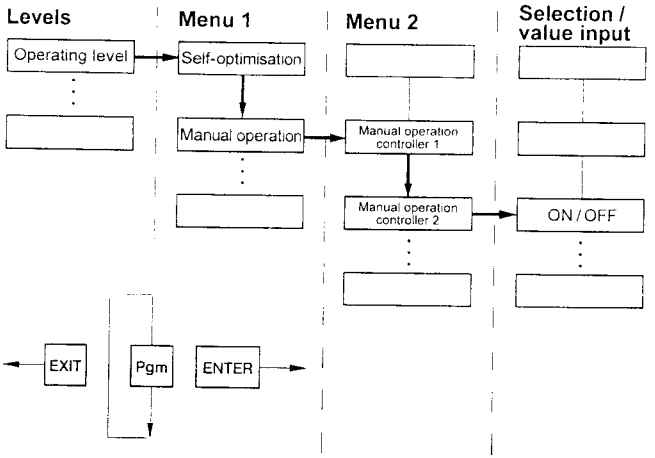
The parameters at this level contain extra Codes for hardware and software in accordance with the controller specification.

Protected by code





After the operating level, each level is divided into menus whose number can vary.

This results in a tree-like structure. In order to alter a particular parameter, you go through the levels and menus according to the menu items and eventually reach either a **selection** (of functions) or a **value input**.

The controller is provided for operator guidance with a matrix display which permits displaying alphanumerical characters. In this way the operator is assisted by messages and notes in plain language.

During programming of the controller the menu items contained in the level and menu structure appear on the matrix display in plain language.

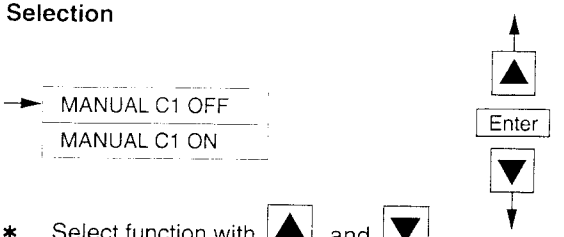
The selection from a list of functions and the value input are also presented with messages in plain language.

Time-out function
The time-out function is activated when the controller is in the operating, parameter or configuration mode.

If no key is pressed for about 30 seconds (factory setting) the controller automatically returns to the standard display.

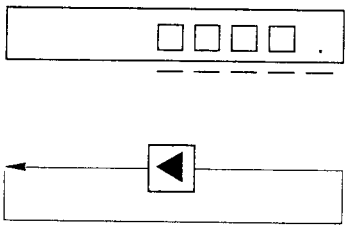
Matrix display (plain language messages)

Selection



* Select function with ▲ and ▼ (matrix display is flashing!)
* Enter with ENTER

Value input



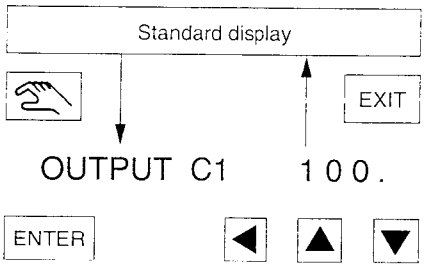
* Select digit with ◀ (selected digit is flashing!)
* Alter value or shift decimal point with ▲ and ▼ The sign is altered in the fourth place from the right (– / –1).
* Enter with ENTER

– If an illegal value is input the matrix display shows the minimum or maximum permitted value. The display is flashing.
  * Repeat the input
– If the value can not be represented using the selected decimal point, special characters appear instead of the numbers.

SETPOINT ✱✱.✱✱

  * Shift decimal point
– A value consists of a maximum of 4 places. (before + after the decimal point)

MANUAL OPERATION



* Change to manual operation with
* Alter the controller output with , and
* Enter with ENTER
  The new controller output is now effective.
* Terminate manual operation with EXIT

The control loop is closed again and the output is determined by the controller.

Operating through menu item at the operating level:

* Selection:

  MANUAL C1 ON

* Quit operating level with EXIT
* Alter the controller output with , and
* Enter with ENTER
  The new controller output is now effective.
* Terminate manual operation by selecting: EXIT

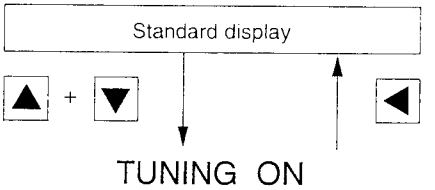
  MANUAL C1 OFF

Special case: Modulating controller

* Operation of the actuator motor (clockwise/anticlockwise rotation) using the keys and

SELF-OPTIMISATION CHANNEL CHANGEOVER

Self-optimisation



* Start with and
  (press both keys simultaneously)

The duration of self-optimisation is approximately 10 times the delay time (Tu) of the control loop.

* Abort with

Operating through menu item at the operating level:

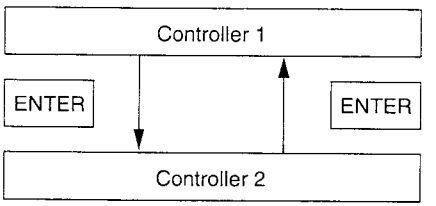
* Start self-optimisation by selecting:

  TUNE C1 ON

* Terminate self-optimisation by selecting:

  TUNE C1 OFF

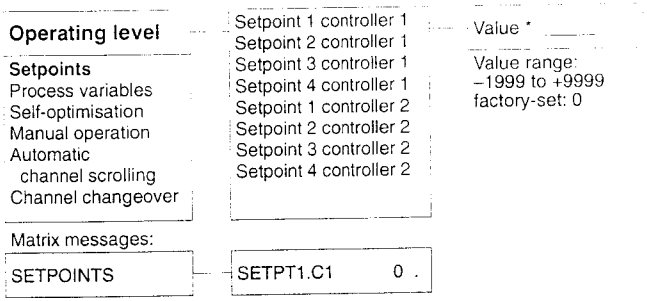
Channel changeover



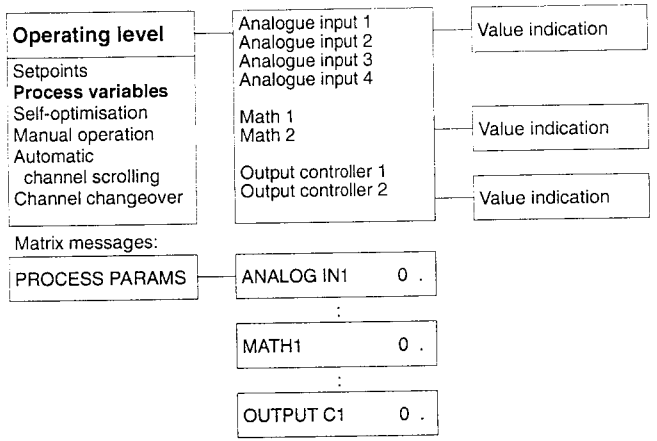
* Changeover controller 1 – controller 2 with ENTER

Operating through the keys (setpoint alteration, start of self-optimisation, manual operation) refers to the controller whose process variables are shown on the displays.

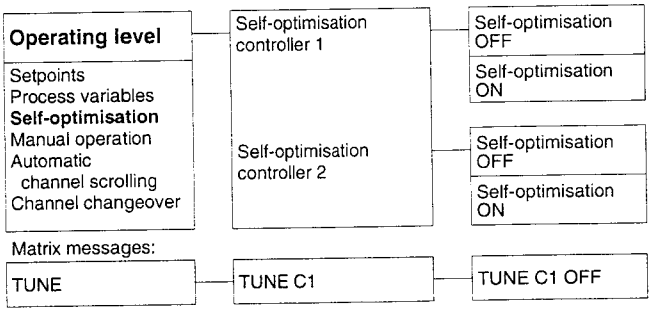
Setpoints



Process variables

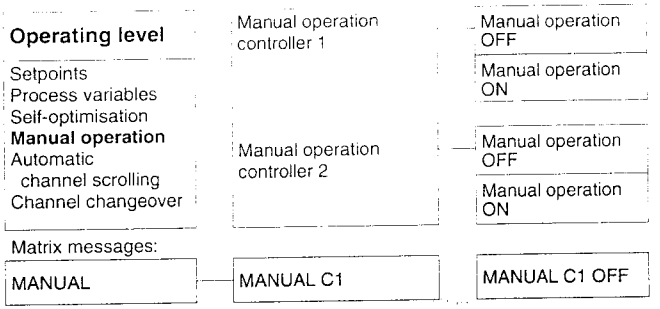


Self-optimisation

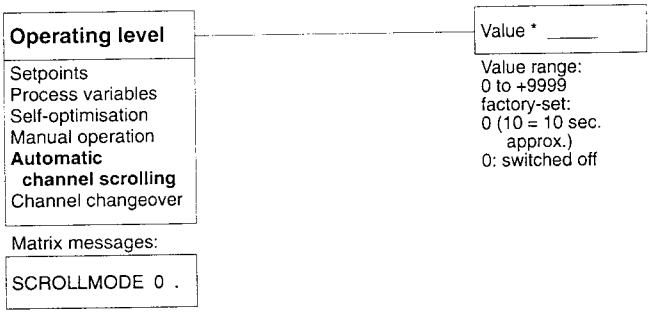


Matrix display (plain language messages)

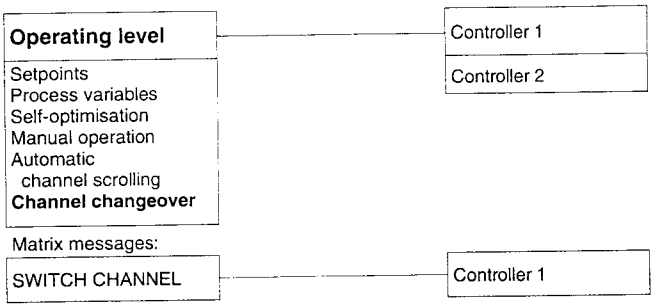
Manual operation



Automatic channel scrolling



Channel changeover



Matrix display (plain language messages)

CONFIGURATION LEVEL C3

Item	Display	Notes
Version	VERSION	Version number of software
Inputs 3+4	ADC MODULE 2	– exist – do not exist
Output 1	OUTPUT 1	– does not exist – Relay – Semiconductor relay – Analogue output – Logic output
Output 2	OUTPUT 2	
Output 3	OUTPUT 3	
Output 4	OUTPUT 4	
Setup interface	SETUP INTERFACE	– connected – not connected
Interface	INTERFACE	– does not exist – RS422 / RS485
External relay module	RELAY MODULE	– exists – does not exist
Number of controllers	CONTROLLERS	– Single-channel controller – Double-channel controller
Maths and logics module	MATHS-LOGICS	– exists – does not exist

Matrix display (plain language messages)

ALARMS

Alarm messages in plain language (matrix display)

Display	Notes
PROBE BREAK IN1	Probe break or short-circuit
OVERRANGE IN1	Overrange
UNDERRANGE IN1	Underrange
MATH 1 ERR	Mathematical error
LOGICS 1 ERROR	Logics error
LOOP ERROR C1	Load short-circuit or interruption
ADC ERROR	Error A/D converter
RELAY MODULE ERR	Error on relay module

IN1 to 4 = analogue input 1 to 4; M1 or 2 = math 1 or 2

Alarm messages in numerical display

Display	Note
9999. INPUT 1 9999 .	– Overrange – Probe break (segment display is flashing)
-1999. INPUT 1 –1999 .	– Underrange (segment display is flashing)
---- INPUT 1 ----	No measurement