

T2900

MODEL



Multi-setpoint Programmer and Data Logger

Ideal for:

- Environmental chambers
- Heat treatment furnaces
- Autoclaves
- Vacuum furnaces
- Kilns

The T2900 is graphical programmer providing from 1 up to 16 analogue setpoint profiles and from 1 to 32 digital output profiles on a single time base. It is designed to work with the Eurotherm 2500 DIN rail PID controller. Up to 16 controllers may be multidropped off the T2900 providing a maximum of 32 PID loops.

The display of the T2900 is a 137mm 1/4VGA active matrix colour LCD display with cold cathode back light, and has a durable resistive analogue touchpanel which extends below the display area to give 6 extra function keys.

A standard 3.5in floppy is fitted behind an IP65 sealing door, and can be used for loading and saving programs, for logging running data or for updating the application program, e.g. User screens, foreign language files etc.

A windows configurator, which runs on a standard Windows 95/NT personal computer may be used to create Programs, and to develop 'User Screens', displays on which the OEM defines which variables, buttons and text are shown.

Internationalisation is available by selecting the appropriate text file containing the foreign language or the industry specific words used on all standard displays. European or US date and time formats are also selectable.

Features include:

- Program storage of 500 segments
- Schedule (future start time) and Run from (mid-program start)
- Access levels: Locked, Operator, Commission, Engineer with alpha numeric password protection
- Real Time Clock
- Alarm and Event management, time-stamped
- Health relay contacts and diagnostic LEDs

Features:

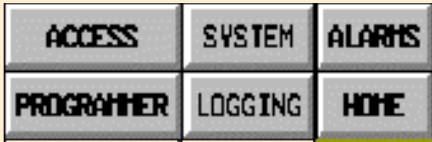
- Physical distribution
 - Clear graphic displays
 - "User" screens
 - Local data logging
 - Single product solution
 - Wide-range 90-264Vac supply
- Reduced wiring cost
- Removes operator errors
- Minimises operator training
- Simple product/process qualification
- Easier maintenance
- Can be installed world-wide



**EUROTHERM
CONTROLS**

**T2900
Programmer
and Data
Logger**

Simple navigation



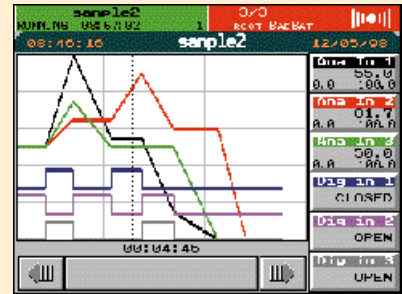
Standard "Pop Up" Menu

- This pop-up menu (displayed by touching the right hand function key) gives immediate access to the main functions of the T2900 Programmer.
- The Programmer Banner and Alarm banner at the top of the screen give immediate access to those areas.
- All major functions - program run, hold alarm acknowledge etc. require no more than 2 key presses

Program Edit and Preview

SP	1	2	3
TEMP	R to 00:00:00	R to 00:01:00	D to 00:02:00
HUMIDITY	S to 0.0	D to 0.0	R to 0.0
DIGITAL1	OPEN	OPEN	OPEN
DIGITAL2	UPEN	UPEN	UPEN
DIGITAL3	DPEN	OPEN	CLOSED
DIGITAL4	DPFN	DPFN	CIRSD

A 'spreadsheet' type view allowing data entry for each segment parameter. Touching a cell brings up a numeric keypad.



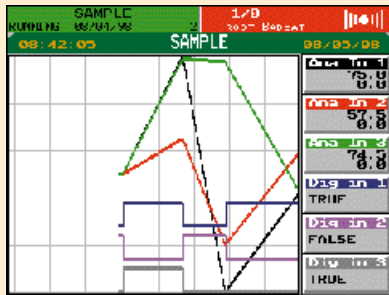
Once the program data has been entered it may be 'previewed' to check that the profile is correct. The cursor may be moved giving the variable values at that point.

Segment: 2
Duration: 00:00:10

ADD SEG DEL SEG DONE

Pop-up used to edit segment name, or duration and to add or delete a segment.

Program Run and Alarms

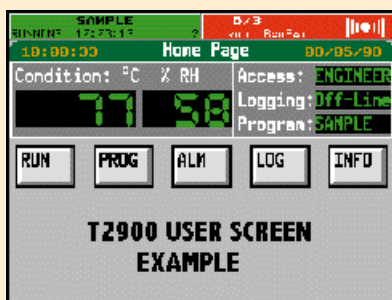


Once a program is running a 'pre-plot' page displays the required setpoint profile. The vertical line in the centre represents the current time and the actual PVs are plotted to the left of the line.

All alarms and events that occur during the run are stored in a log. Active unacknowledged alarms flash red and acknowledged are fixed red. Events include access level changes, program load, run, hold and save.

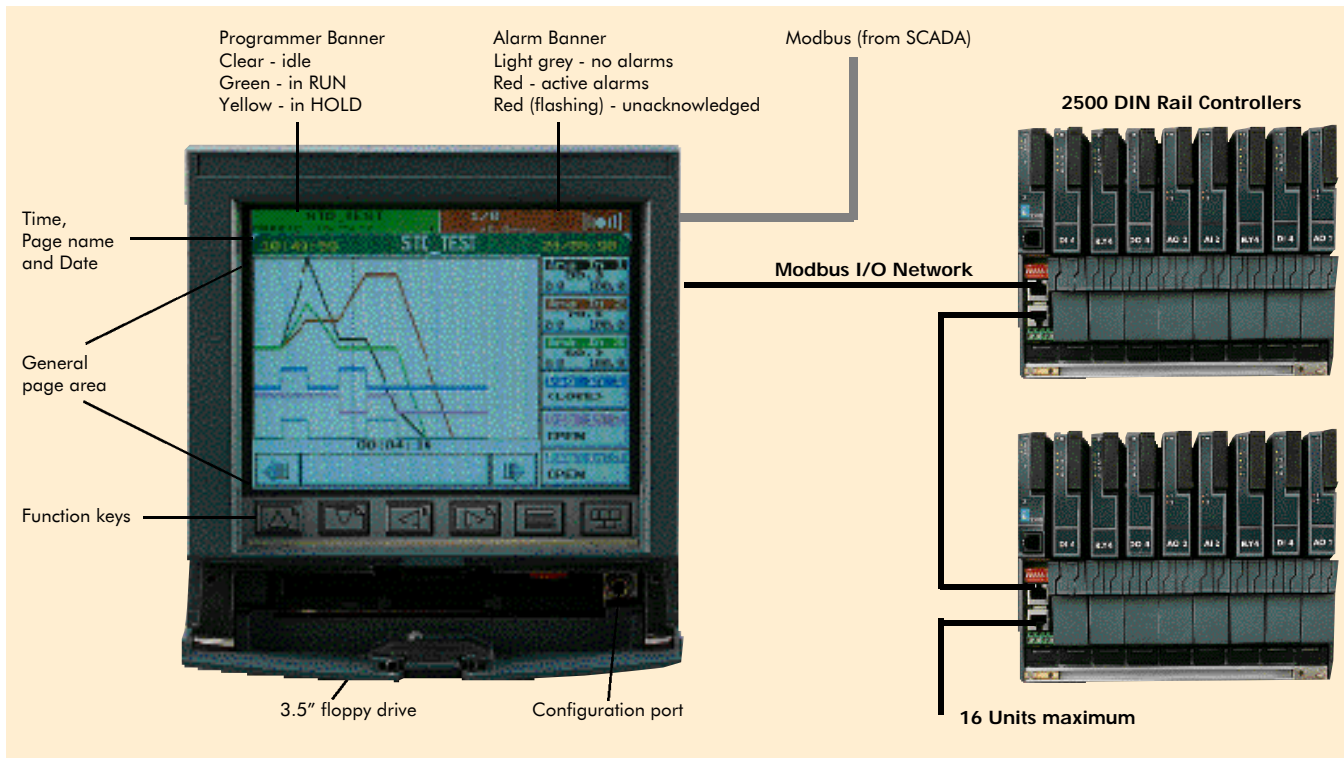
TIME	TYPE	ACTIV	CFR
00:05:00	SAMPLE Run	00:05	00:50
00:05:40	SAMPLE Flash	00:05	00:40
00:05:45	SAMPLE Run	00:05	00:45
00:05:22	E2 Conn	00:05	00:22
00:05:22	Database Restart	00:05	00:22
00:05:22	E2 Config	00:05	00:22
00:05:22	root DadDat	00:05	00:22
00:05:20	DelLash Stopped	00:05	00:20
00:05:10	DelLash Stopped	00:05	00:10
00:05:10	E2 Config	00:05	00:10
00:05:10	root Restart	00:05	00:10
00:05:10	Database Loaded	00:05	00:10

User screens



A typical User Screen. A User Screen editor is available which runs on a personal computer running Windows 95 or NT. Using the Editor the OEM can select which parameters should be displayed, can add text and simple boxing as shown. Action buttons, such as 'RUN' and 'HOLD' can be included on the pages as well as links into the standard pages such as the alarms, or the data logging monitor page. A User screen, or any other page, may be selected as the 'home' screen - the screen which will be shown on power up and to which the display will return after an adjustable delay after there has been no operator interaction with the touchscreen.

Typical arrangement



Ramping

The 2500 DIN rail controller has a RAMP block for each PID block, this generates the ramping setpoint locally. The T2900 programmer manages each of these ramp blocks, providing it with the correct ramp rate and target, putting it into hold on either operator demand or automatically when necessary, should holdback be selected. This minimises I/O network traffic, leaving it free for PV and alarm monitoring.

Key technical features

Programmer

Max no. of programs	50
Max no. of segments (approx)	500
Max no. of Analogue Setpoints	16
Max no. of Digital Setpoints	32

Display

Screen	1/4 VGA TFT colour
Display area	111 x 84mm
Touch panel	Resistive Analogue

Alarm and Events

History	250 lines max
Filter	All - Alarms - Events
Each line	Name - type - date - time
Acknowledgement	Colour coded

Communications

Configuration	3.5mm jack, SLIN
Modbus RTU Master	RJ45, RS422 4 wire
Modbus RTU Slave	RJ45, RS422 4 wire

Data Storage

Hardware disk	DOS formatted 3.5 inch floppy
Data format	ASCII (.csv) or compressed data
Data compression	Eurotherm Recorders
Frequency	Fastest logging rate is 10s

Diagnostics

Health Relay	Contact for H/W health + contact for S/W health
LEDs	Red for H/W failure or start up Green for S/W running

Power

Supply	90 -250V ac 50 VA Takes standard IEC connector
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Dimensions

Bezel	144 x 144mm
Cut-out	138 x 138mm
Depth	180mm + cabling (~200mm)

Environmental

Temperature	0 to 50°C operating 0-10 to 85°C storage
Humidity	5 to 85% operating 5 to 95% storage
Protection	IP65
Vibration	IEC 1010 part 1, IEC 873

EMC and Safety

Emissions	EN50081-1
Susceptibility	EN50082-2
Electrical Safety	EN61010, Installation II Pollution Category II

Ordering Code

The T2900 is preconfigured according to the ordering code shown below. The 'standard' coding is shown in orange.

T2900	1	2	3 0	4 1	5	6 0	7	8	9	10
	11	12	13 0	14	15 0	16	17	18	19 0	20
	21 0	22 1	23 0	24 0	25 0					

Field description	Code	Description
1 SRAM SIZE	12	128kB SRAM
	24	256kB SRAM
	56	512kB SRAM
2 ARCHIVE MEDIA	0	None
	1	1.44Mb Floppy
3 ARCHIVE LOCK	0	None
4 SCREEN TYPE	1	Colour TFT
5 OPERATOR INPUT	0	No touchscreen
	1	Touchscreen
6 NOT USED	0	None
7 CONFIG PORT	1	3.5mm Front Jack
	2	Rear D9
8 PSU	1	90-264V ac
	2	19-54V dc
9 BATTERY	0	None
	1	Lithium Battery
	2	Alkaline Battery
10 SERIAL PORT 1	1	RS422 4 wire
	2	RS485 2 wire
11 SERIAL PORT 2	1	RS422 4 wire
	2	RS485 2 wire
12 OPTION CARD 1	0	None
	1	Profibus
13 OPTION CARD 2	0	None

Field description	Code	Description
14 PARALLEL PORT	0	None
	1	Rear D25
15 NOT USED	0	
16 MOUNTING	0	Through Hole
	1	Back of panel with Floppy
	2	Back of panel without Floppy
17 LANGUAGE	E	English
	F	French
	G	German
18 MANUAL	0	None
	E	English
	F	French
	G	German
19 COLOUR	0	Eurotherm green
20 LABEL	0	Eurotherm logo
	99	Customer logo
	NL	No logo
21 NOT USED	0	
22 CPU	1	386/2Mb
23 CHARACTER SET	0	Std
24 MEMORY	0	No extra memory
25 Not used	0	

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