Eurotherm®

Eycon10 & 20
Visual Supervisor

More than a display... creative visualization solutions that put you in control

Eycon10 and Eycon20 visual supervisors are local control panels that offer colour TFT LCD touchscreen displays and are capable of continuous, sequential, and logic control. Eycon combines multi-function control, recording, and visualization in a single process management unit. The open network architecture allows connection to the process interface i.e. T2750 PAC, PLCs and other 3rd Party devices. Separating the processing and operator interface from the I/O, the control modules, and the phases allows for physical distribution of the modules, which results in reduced wiring costs.

Multi-setpoint programmer

Many applications need to vary the process value over time. Temperature control is one such application in which it is very common to 'ramp' the process value from one level to another over a specified time period using a setpoint program.

The Eycon provides support for multiple setpoint programs that can be run simultaneously. Each program is capable of profiling up to eight channels, with as many as 32 segments per profiled channel. In addition to controlling the setpoint during each segment of the profile, the controllers can also be used to activate up to 128 digital events during each segment.

The setpoint program feature enables an operator to select and run a preconfigured setpoint program. A preview facility allows the selected program to be viewed before running. Once the program is running, the setpoint preplot and the historically achieved process values are both plotted on the trend screen.

Batch control

Batch Manager provides comprehensive batch control; allowing an operator with suitable access permissions to load, start, hold, restart, or abort a batch. The batch status can also be monitored from standard displays. Each batch can be identified by a batch ID entered by the operator, or by a unique automatically generated batch number. The six customisable operator entry fields can also be used to further identify batch data. Batch phases are supported and phases which the batch went through are used to further analyse the batch data.

- Colour touchscreen display
- Peer to peer communications
- Modbus master/slave
- Profibus master
- 10/100Mbps Ethernet
- Continuous and sequential control
- Multi-setpoint programmer
- Batch control
- Recipes
- USB support
- 21 CFR Part 11 auditor
- Data logging
- Open communications
- Alarm management
- Multi-language support
- Heat treatment application editor

WATLOW®
Powered by Possibility

Auditor

The Auditor option for the visual supervisors is designed specifically to aid compliance with FDA regulation 21 CFR part 11 for ERES (Electronic Records and Electronic Signatures). Tamper resistant electronic data, including time stamped Audit Trails can be viewed, analysed, and printed using the Eurotherm™ Review software package. Reports can also be generated directly and printed via the USB port to a suitable printer.
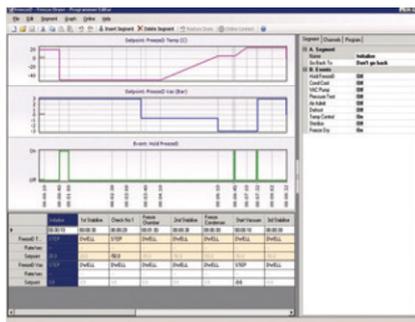
Setpoint program Wizard

For ease of use, LINtools incorporates a Wizard for creating setpoint programs. By following the on screen prompts and editing the parameters as required, a setpoint program can be simply and quickly created

with all required blocks automatically added to the database.
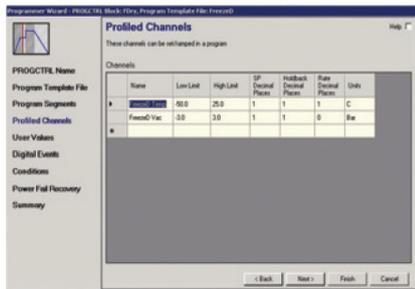
Setpoint program editor

In addition to the Setpoint Program Wizard, programs can also be created or edited off–line using the Setpoint Program Editor supplied with LINtools. As an ActiveX, this tool can be inserted in any of your visualization packages.

Programs can be created, edited and monitored directly on the Eycon standard user screens.

Setpoint Programmer (V3.0 or higher)

A maximum of 8 programs can run concurrently.

Data logging

Selected data can be logged periodically (hourly, daily or on demand) to an internal history file. Process variables are placed into history at the configured recording interval. Additionally, alarm messages and batch start/stop events are time stamped and placed into history files when they occur. Archived data (either ASCII or tamper resistant) can then be transferred to a local/remote server via FTP or a USB storage device. Alternatively, archived data can be automatically transferred over the network using the Eurotherm Review Software package.

For accurate time stamping, Eycon supports connection to two SNTP servers. Local time is also available for configuration.

User configurable function keys

A unique feature of the Eycon series is the User definable keys which can be configured as required with the User Screen Editor Software package. As standard, the Eycon10 has six user definable function keys (27 for the Eycon20) that can be configured to perform specific actions such as navigating between process screens.

Additionally, the size of the touch area, as well as the number of active keys can be customised by the user. The printed legend behind the touchscreen area is also removable and can be customised and replaced as required, providing users the ability to design their own, unique operator interface.

Alarm management

When used in conjunction with a Eurotherm T2750/T2550 Programmable Automation Controller (PAC) alarms are managed and collected within the PAC to provide features such as alarm status and priority, acknowledgement, date and time stamping at source as well as alarm suppression and local historian message storage.

Open communications

The Eycon provides a special function block to define any simple serial communications protocol. This can be used to integrate many 3rd party devices which use ASCII communications, such as bar code readers or particle counters. Direct control over transmit and receive also allows multi-node connections.

Heat Treatment application editor

The Program Application Editor provides the user with a more efficient and intuitive method of creating and editing programs for a specific application.

Using the PC based tool users are able to create a series of segments (Segment Class) that allows the operator to create a program suitable for the target application. Each segment class contains a series of questions, the answers to which will determine how the segment is parameterised, resulting in a program tuned to the specific application.

User screen editor

In addition to screen customisation user definable keys can be configured as required with the User Screen Editor Software package and the printed legend behind the touchscreen can be customised and replaced as well.

Specification

Environmental performance

Temperature limits	Operation:	0 to +50°C
	Storage:	−20 to +60°C
Humidity limits	Operation:	5% to 85% RH (non condensing)
	Storage:	5% to 95% RH (non condensing)
Protection	Bezel and display:	IP66
	Sleeve (rear of panel):	IP20
Shock:		BS EN61010
Vibration (10 to 150Hz):		BS EN60873, Section 9,18
Altitude:		<2000 metres

Approvals

Electromagnetic compatibility CE, (EMC)	
Emissions and immunity:	BS EN61326-1:2006
Electrical safety (BS EN61010-1:2001):	Installation cat. II; pollution degree 2

INSTALLATION CATEGORY II
The rated impulse voltage for equipment on nominal 230V mains is 2500V.

POLLUTION DEGREE 2
Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation shall be expected.

Physical

Panel mounting:		DIN43700
Panel mounting angle:		Vertical
Eycon10	Bezel size:	144 x 144mm
	Panel cutout dimensions:	138 x 138mm (both −0/+1mm)
	Depth behind panel:	86.8mm (106.8mm with Profibus option)
	Weight:	1.5kg (1.7kg with Profibus option)
Eycon20	Bezel size:	288 x 288mm
	Panel cutout dimensions:	282 x 282mm (both −0/+1.3mm)
	Depth behind panel:	70mm (90mm with Profibus option)
	Weight:	3.7kg (3.9kg with Profibus option)

Operator interface

Type:		Colour TFT LCD, with cold cathode backlight, fitted with resistive, analogue, touch panel
Size and resolution	Eycon10:	1/4VGA (320 x 240 pixels) 5.5"
	Eycon20:	XGA (1024 x 768 pixels) 12.1"

Language support

English, French, German, Spanish, Dutch, Italian, Portuguese and other*

Power requirements

Supply voltage:		19.2 to 28.8V dc (24V dc nominal)
Powe consumed	Eycon10:	20W
	Eycon20:	24W
Operating current:		1A max.
Inrush current:		10A max.
Fuse:		No user replaceable fuses

Battery backup

Type:	Poly-carbonmonofluoride/lithium (BR2330)
Support time (RTC):	1 year min. with unit unpowered
Replacement period:	3 years
Stored data:	Hot start parameters

Data logging storage

Internal archive:	45Mb flash memory
Data format:	ASCII (.asc) or compressed data (UHH)
Data compression:	Proprietary
Log frequency:	1Hz max.

Ethernet communications

Ethernet port:		10/100Mbps auto sensing
Protocols:		TCP/IP, FTP, DHCP, BOOTP, Modbus, Telnet
Cable	Type:	CAT5
	Maximum length:	100 metres
	Terminator:	RJ45

Serial communications

Ports:	2
Protocol:	Modbus RTU, master and slave
Transmission standard:	EIA422 or EIA485

Profibus master

Termination:	9 way D-type
Protocol:	Profibus DPv1
Nodes supported:	124
Data rate:	Selectable between 9600 and 12M Baud
Isolation:	Functional

Open communications

Protocol:	Device driven
Data rate:	Selectable 1200 – 38.4k bits/sec; none/even/odd parity; 1 or 2 stop bits

Master I/O comms

Modbus TCP slave:	Used to talk through only
Modbus TCP master:	Slave connections 20 max

Modbus/Jbus (EIA422/485) Slave

Connectors:	Shielded RJ45 connector
Protocol:	Modbus/JBUS RTU slave
Data rate:	Selectable from 1200 to 38,400 baud
Data format:	8-bits, 1 or 2 stop bits, selectable parity
Modbus:	Data tables 64, configurable as registers or bits
Table length (max.):	200 registers or 999 bits
Memory allocated to tables:	20480 bytes
Isolation:	Functional

Modbus TalkThru

TalkThru is provided on the Eycon Series in order to enable use of Eurotherm iTools package to configure Modbus slave devices without having to disconnect them from the Eycon.

Universal Serial Bus (USB)

Version:	1.1 (2.0 devices are compatible)
USB ports:	1 or 3
Devices supported:	USB bulk storage devices ('Memory stick'), USB mouse, bar code reader, printers
Isolation:	No signal isolation

	Database	SFC
Legacy (for V2.1 or lower using the existing SPP)	145Kb	112Kb (Program Data resources), 73Kb (SFC resources)
Default (for V3.0 or higher using the new SPP)	255Kb	56Kb (Program Data resources), 38Kb (SFC resources)
Large SFC/Small Database	181Kb	112Kb (Program Data resources), 73Kb (SFC resources)
Large Database/Small SFC	319Kb	28Kb (Program Data resources), 19Kb (SFC resources)

Table 1

Setpoint program editor resources

Programs:	Max. no. limited by available database memory
Profiled Channels:	8 max. per program
Digital Events:	128 max. per program
User Values:	32 max. per program
Segments per Program:	32 max. per program
A maximum of 8 programs can run concurrently.	

Continuous database resources

Maximum Database size:	See Table 1

Database resources (for default option)

Database blocks:	512 max.
Database Templates:	100 max.
Template Libraries:	50 max.
External Databases:	32 max.
TEATTs:	512 max.
FEATTs:	128
Servers:	8
Connections:	1024

Sequence control resources

Sequence Memory:	Program data and SFC resources See Table 1
Simultaneously active independent sequence tasks:	10
SFC actions (incl. root SFC's):	50
Steps:	160
Action associations:	600
Actions:	300
Transitions:	255

Recipes

Recipe sets (files):	8 concurrent
Production lines:	8 max. per set
Recipes:	16 max. per set
Variables:	1000 max. per set

Batch

Batches (files):	8 concurrent
Max. no. of phases per batch:	40

*Consult factory

Eycon10 Visual Supervisor Dimensional Details

144mm

144mm

6.7mm

106.8mm

86.8mm

137mm

Profibus connector

Fixing clip (one each side)

Protective-conductor terminal (M4)

F1 F2 F3
F4 F5 F6

Flash card

Serial comms

Panel thickness:
Max = 22mm
Min = 2mm

USB

Power

Ethernet

Profibus

137.5mm

154.5mm

170.5mm
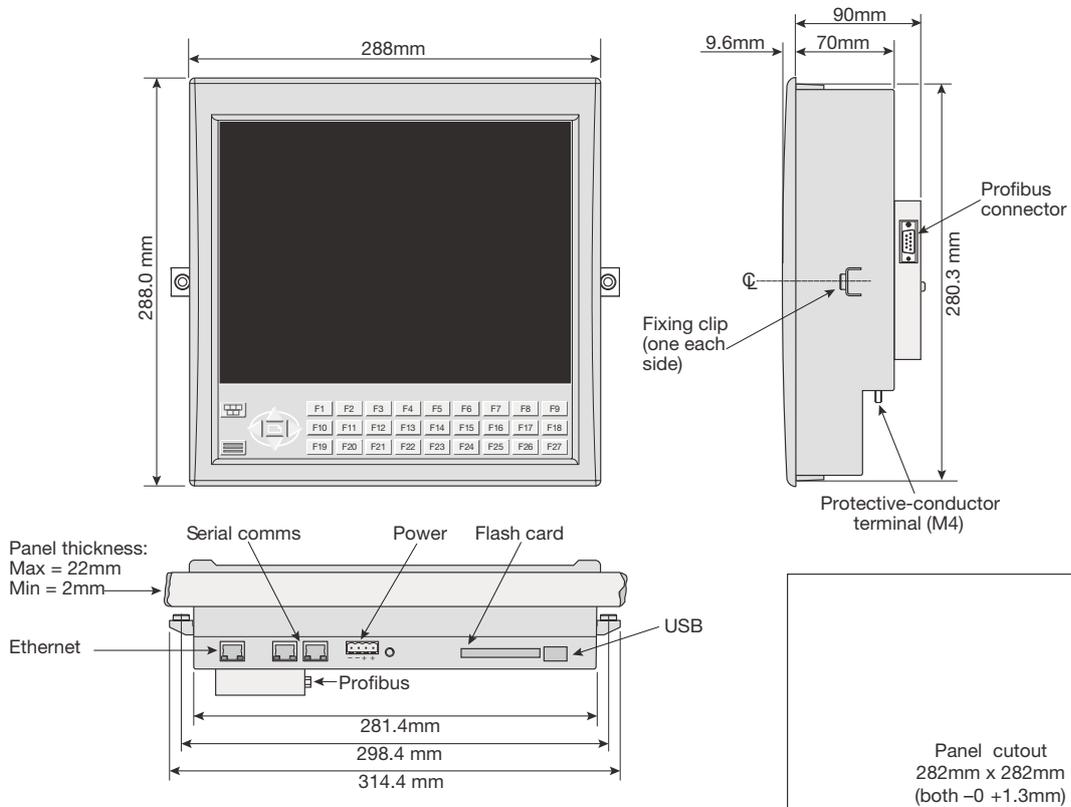
Panel cutout
138mm x 138mm
(both –0 +1mm)
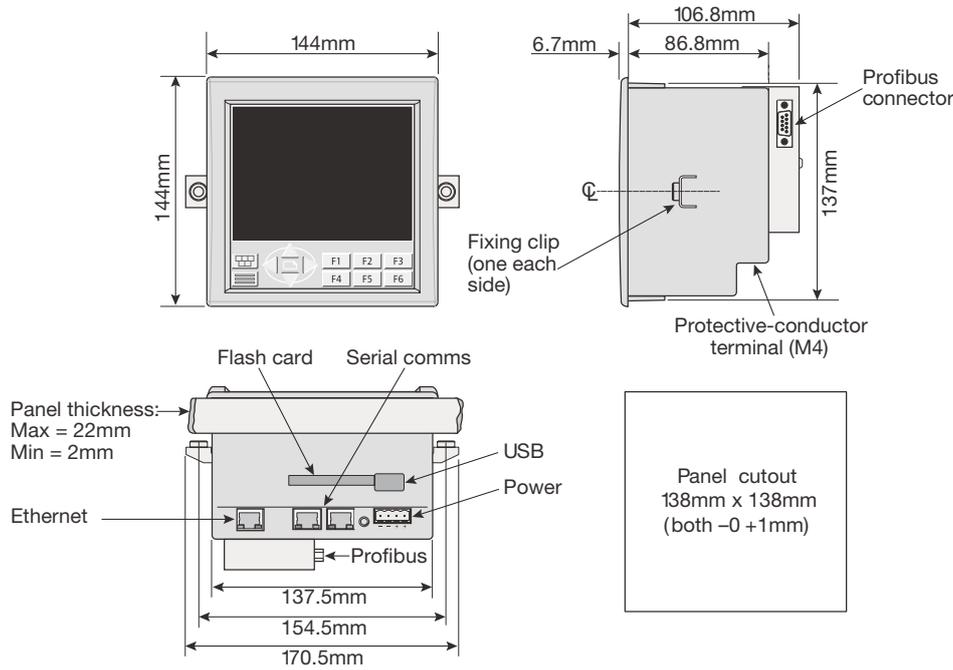
Panel Mounting Details

Installed panel angle:
Vertical panels only.

Minimum inter-unit spacing:
50mm, vertical or horizontal.

Note: Where multiple units are mounted in close proximity with one another, steps must be taken to ensure that the resulting ambient temperature does not exceed the specified maximum operating temperature of 50° Celsius.

Eycon20 Visual Supervisor Dimensional Details

288mm

288.0 mm

9.6mm

90mm

70mm

280.3 mm

Profibus connector

Fixing clip (one each side)

Protective-conductor terminal (M4)

F1	F2	F3	F4	F5	F6	F7	F8	F9
F10	F11	F12	F13	F14	F15	F16	F17	F18
F19	F20	F21	F22	F23	F24	F25	F26	F27

Panel thickness:
Max = 22mm
Min = 2mm

Serial comms

Power

Flash card

USB

Ethernet

Profibus

281.4mm

298.4 mm

314.4 mm

Panel cutout
282mm x 282mm
(both –0 +1.3mm)

Order Code

	1	2	3	4	5	6	7	8

Basic Product	
EYCON10	Visual Supervisor 1/4 VGA
EYCON20	Visual Supervisor XGA

1	Software 1	
	NONE	Standard display only
	L01	Setpoint Program, Recipe & Report
	L02	Batch Manager, Setpoint Program, Recipe & Report
	L11	1 Carbon Diffusion block
	L12	2 Carbon Diffusion blocks
	L13	3 Carbon Diffusion blocks
	L14	4 Carbon Diffusion blocks

2	Software 2	
	NONE	No auditor function
	AUDIT	Auditor Feature

3	Comms Protocol	
	ELIN	LIN Peer-to-peer RTU & TCP
	MBMS	Modbus Master/Slave
	PBMS	Profibus Master/Slave
	PBMB	Profibus and Modbus Master

4	USB Peripherals	
	NONE	None
	2USB	2 rear USB ports USB

5	Keyboard	
	EUR	Standard keyboard design
	OEM	OEM Keyboard

6	Label Set	
	XXXXX	Eurotherm Label

7	Technical Support	
	TS0	No support provided
	TS1	One hour support (default)
	TS2	1 hour Support
	TS4	4 hour Support
	TS8	8 hour Support

8	Warranty	
	XXXXX	Standard warranty
	WL005	5 years extended warranty

Upgrade Order Code

EY10-20U	1	2	3	4	5	6	7	8

1	Model Type	
	EYCON10	Visual Supervisor 1/4 VGA
	EYCON20	Visual Supervisor XGA

2	Flash Card	
	NONE	No flash card software upgrade only

3	Current Software 1	
	NONE	Standard display only
	L01	Setpoint Program, Recipe & Report
	L02	Batch Manager, Setpoint Program, Recipe & Report
	L11	1 Carbon Diffusion block
	L12	2 Carbon Diffusion blocks
	L13	3 Carbon Diffusion blocks
	L14	4 Carbon Diffusion blocks

4	Current Software 2	
	NONE	No auditor funciton
	AUDIT	Auditor Features

5	Current Comms Protocol	
	ELIN	LIN Peer-to-peer RTU & TCP
	MBMS	Modbus Master/Slave

6	Required Software 1	
	NONE	Standard display only
	L01	Setpoint Program, Recipe & Report
	L02	Batch Manager, Setpoint Program, Recipe & Report
	L11	1 Carbon Diffusion block
	L12	2 Carbon Diffusion blocks
	L13	3 Carbon Diffusion blocks
	L14	4 Carbon Diffusion blocks

7	Required Software 2	
	NONE	No auditor funciton
	AUDIT	Auditor Features

8	Required Comms Protocol	
	ELIN	LIN Peer-to-peer RTU & TCP
	MBMS	Modbus Master/Slave

Accessories

B1	Battery for memory and RTC
MANUAL	Engineering manual
EY10KP	Eycon10 keypad insert
EY20KP	Eycon20 keypad insert
REVIEW	Review Full DVD
CF32	32M memory card
PROFADD	Profibus adder kit
USBADD	USB adder kit

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