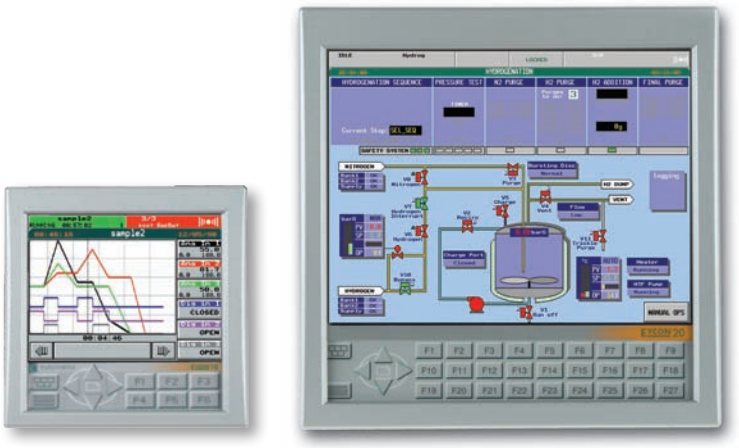
Eycon Visual Supervisor SERIES



Foxboro Eycon 10 and Eycon 20 Visual Supervisors

Summary

- 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

Eycon 10 and Eycon 20 visual supervisors are local control panels that offer color 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. Foxboro PAC T2750, 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.

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 out of the Eycon USB color graphical printers.

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.

MULTI-SETPOINT PROGRAMMER

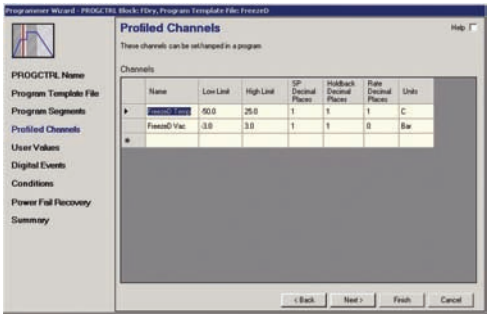
Many applications need to vary the process value over time. Temperature control is one such application in which it is very common to 'ramp' the process value from one level to another over a specified time period using a setpoint program.

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 pre-configured setpoint program. A preview facility allows the selected program to be viewed before running. Once the program is running, the setpoint pre-plot and the historically achieved process values are both plotted on the trend screen.

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.

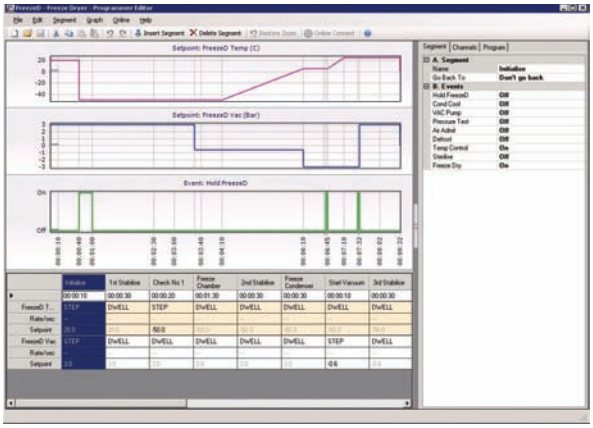


Setpoint Program Editor

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.

A maximum of 8 programs can run concurrently.



Setpoint Programmer (V3.0 or higher)

Resources	
Max. no. of Programs	Limited by available database memory
Max. no. of Profiled Channels per Program	8
Max. no. of Digital Events per Program	128
Max. no. of User Values per Program	32
Max. no. of Segments per Program	32

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.

Data Logging Storage

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

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

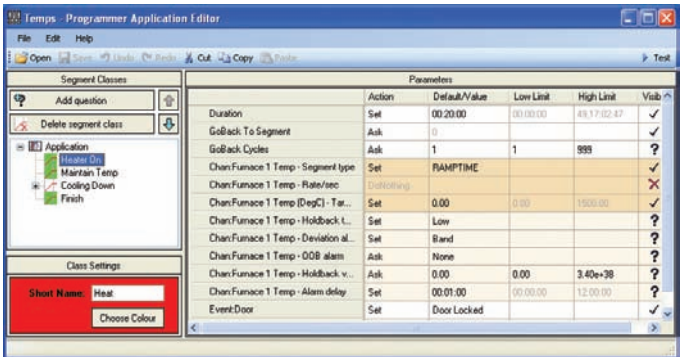
When used in conjunction with a Eurotherm T2750/T2550 Programmable Automation Contoller (PAC) alarms are managed and collected within the PAC to provide features such as alarm status and priority, acknowledgement, date and time stamping at source as well as alarm suppression and local historian message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

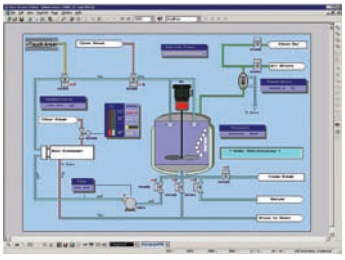
Heat Treatment Application Editor

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.





GENERAL SPECIFICATIONS

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 rate 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
Eycon 10	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)
Eycon 20	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	Eycon 10:	1/4VGA (320 x 240 pixels) 5.5"
	Eycon 20:	XGA (1024 x 768 pixels) 12.1"

Language support

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

Power requirements

Supply voltage:		19.2 to 28.8Vdc (24Vdc nominal)
Power consumed	Eycon 10:	20W
	Eycon 20:	24W
Operating current:		1A max.
Inrush current:		10A max.
Fuse:		No user replacable fuses

Back-up battery

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

Ethernet communications

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

Serial communications

No. of ports:	2
Protocol:	MOodbus RTU, master and slave
Transmission standard:	EIA422 or EIA485

Profibus master

Termination:	9 way D-type
Protocol:	Profibus DPv1
No. of 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 16, configurable as registers or bits
Table length (max.):	200 registers or 999 bits
Memory allocated to tables:	2000 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)
Number of USB ports:	1 or 3
Devices supported:	USB bulk storage devices ('Memory stick'), USB mouse, bar code reader, printers, bar code 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 (Pogram 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

Continuous database resources

Maximum Database size: see Table 1

Database resources (for default option)

Number of Database blocks:	512 max.
Number of Database Templates:	100 max.
Number of template Libraries:	50 max.
Number of External Databases:	32 max.
Number of TEATTs:	512 max.
Number of FEATTs:	128
Number of Servers:	8
Number of connections:	1024

Sequence control resources

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

Recipes

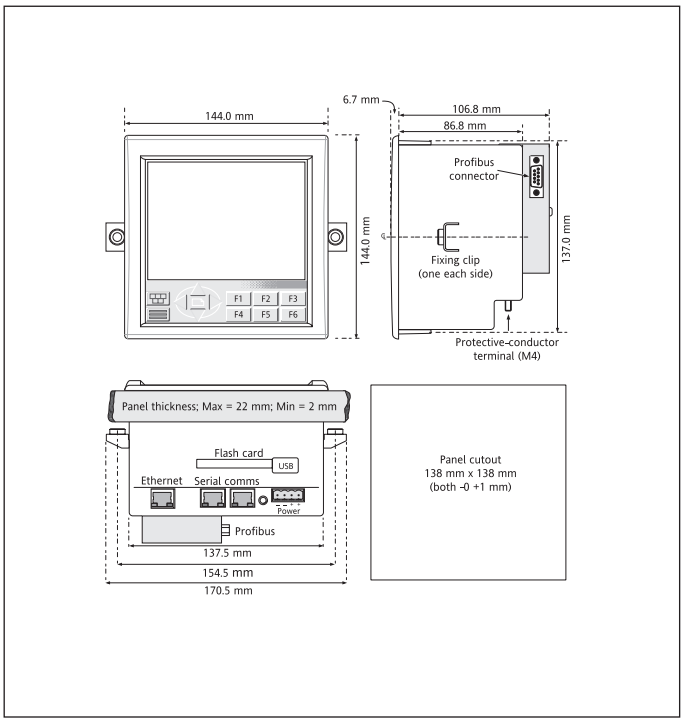
Max. no. of concurrent Recipe sets (files):	8
Max. no. of production lines per set:	8
Max. no. of Recipes per set:	16
Max. no. of variables per set:	1000

Batch

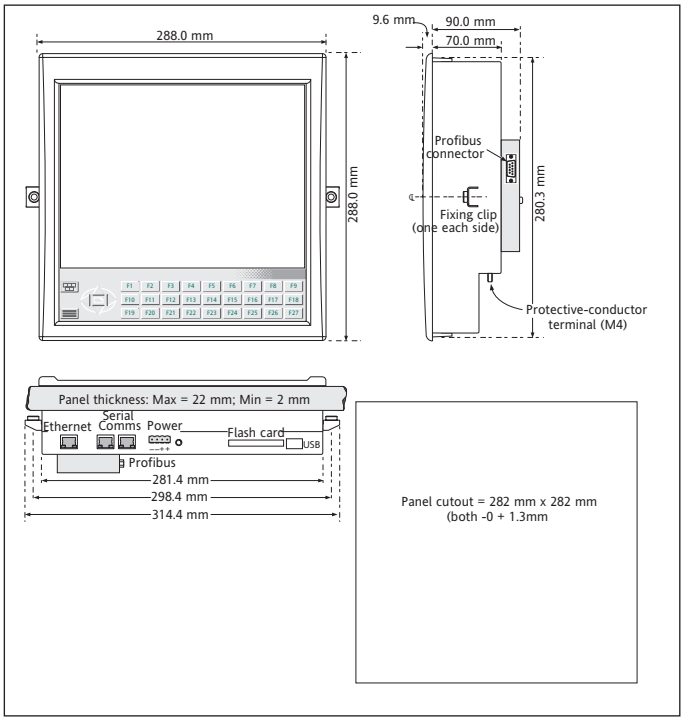
Max. no. of concurrent batches (files):	8
Max. no. of phases per batch:	40

* Consult factory

Eycon 10 Visual Supervisor Dimensional Details



Eycon 20 Visual Supervisor Dimensional Details

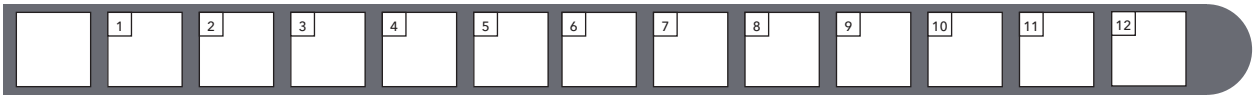


PANEL MOUNTING DETAILS

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.

ORDERING CODES



Basic Product

E10F	Eycon-10 1/4 VGA Display with Touchscreen
E20F	Eycon-20 Full XGA Display with Touchscreen

1 Software 1

-1	Standard Display and software
-2	Setpoint Program, Recipe & Report Capability
-3	Batch Manager, Setpoint Program, Recipe & Report Capability
-4	Carbon Diffusion block (includes -3)
-5	2 Carbon Diffusion blocks(includes -3)
-6	3 Carbon Diffusion blocks(includes -3)
-7	4 Carbon Diffusion blocks(includes -3)

2 Software 2

N	No Auditor Feature
A	Auditor Feature - Electronic Records and Signatures

3 Communications Protocol

1	LIN Peer to Peer comms includes Modbus Slave (RTU & TCP)
2	Modbus Master/Slave - RTU & TCP comms (includes ELIN and Raw comms)
3	Profibus Master Comms (includes ELIN and Raw comms)
4	Profibus and Master Comms (includes ELIN and Raw comms)

4 USB Peripherals

N	Single default USB port
U	Two rear USB ports added

5 Battery

1	Battery fitted

6 Bezel Colour/Type

SL	Silver (Standard)
GR	Eurotherm Green*
BL	Black*
ST	Stainless Steel*
CP	Custom Panel Mount

7 Keyboard

S	Eurotherm
O	OEM

8 Installation Guide Language

E	English
G	German*
F	French*
C	Chinese*

9 Label Set

F	Foxboro

10 Technical Support

0	No support included

11 Warranty

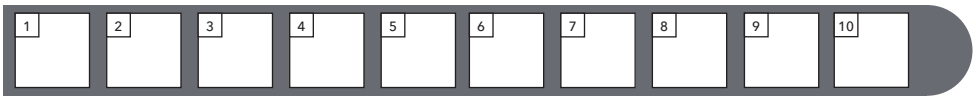
XX	Standard Warranty
5Y	5 Years Extended Warranty

12 Specials

0	No special specified
Y*	Gas carburising furnace solution
Y*	Custom panel mount spacers for 12mm panel
Y*	Special code

*Consult factory

UPGRADE ORDERING CODES



1 Basic Product to Upgrade

E10UF	Eycon 10, 1/4 VGA Display with Touchscreen
E20UF	Eycon 20, Full XGA Display with Touchscreen

2 Flash Memory Card

-NON	No card software - upgrade only
-F32	32M flash card (no longer available)
-F64	64M flash card (future)

3 Current Software 1

1	Standard display only software
2	Setpoint Program, Recipe & Report capability
3	Batch Manager and Setpoint Program, Recipe & Report capability
4	1 Carbon diffusion block (includes 3)
5	2 Carbon diffusion blocks (includes 3)
6	3 Carbon diffusion blocks (includes 3)
7	4 Carbon diffusion blocks (includes 3)

4 Current Software 2

0	No Auditor feature
N/A	Auditor feature - Electronic Records and Signatures

5 Current Communications Protocol

1	LIN peer-to-peer communications includes Modbus Slave-RTU & TCP
2	Modbus Master/Slave - RTU & TCP communications includes LIN peer-to-peer and raw comms

6 Required Software 1

1	Standard display only software
2	Setpoint Program, Recipe & Report capability
3	Batch Manager and Setpoint Program, Recipe & Report capability
4	1 Carbon diffusion block (includes 3)
5	2 Carbon diffusion blocks (includes 3)
6	3 Carbon diffusion blocks (includes 3)
7	4 Carbon diffusion blocks (includes 3)

7 Required Software 2

1	No Auditor feature
2	Auditor feature - Electronic Records and Signatures

8 Required Comms Protocol

1	LIN per-to-peer communications includes Modbus Slave- RTU & TCP
2	Modbus Master/Slave - RTU & TCP communications includes LIN peer-to-peer and raw comms

9 Label Set

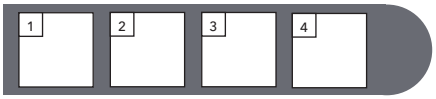
F	Foxboro

10 Specials

0	No special specified
Y*	Gas carburising furnace solution
Y*	Custom panel mount spacers for 12mm panel
Y*	Special code

*Consult factory

ACCESSORIES ORDERING CODES



1 Basic Product

E10AF	Eycon-10 1/4 VGA Display with Touchscreen
E20AF	Eycon-20 Full XGA Display with Touchscreen

2 Type

-B1	Battery for memory and real time clock support
-MA	Engineering manual
-32	32M Flash card
-64	64M Flash card (future)
-ES	Eycon-10 Keypad insert
-EL	Eycon-20 Keypad insert
-PA	Profibus adder kit
-RF	Review full CD

3 Label Set

F	Foxboro

4 Specials

0	No special specified
Y*	Gas carburising furnace solution
Y*	Custom panel mount spacers for 12mm panel
Y*	Special code

*Consult factory

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