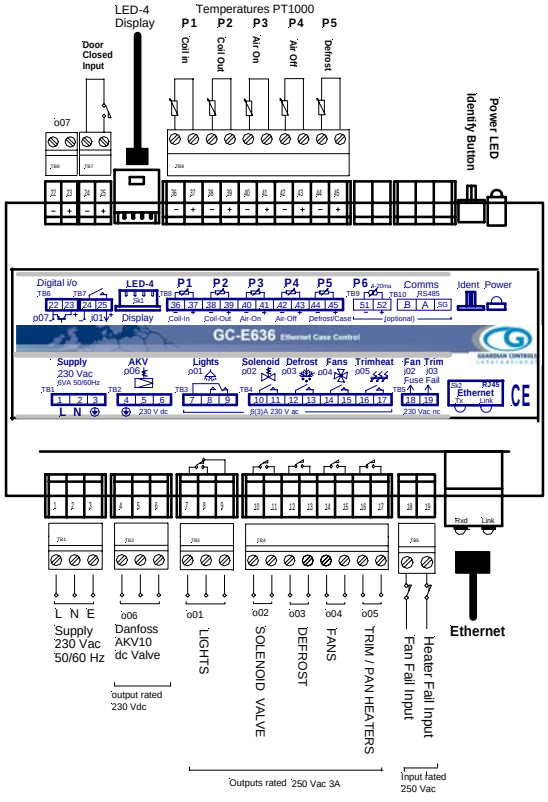
GUARDIAN *E636*

Ethernet Supermarket Case & Coldstore Control

Combines energy efficient control of temperature, lighting and defrost for a single supermarket display case or cold room with TCP/IP, SNMP or RS485 Modbus protocol communication facilities.

- **Full specification case and cold room control**
- **Ethernet TCP/IP, SNMP and Modbus protocol communications**
- **Supports PT1000 or Thermistor temperature probes**
- **Six Temperatures per case** are available:- Product%, Air On, Air Off, Coil-In, Coil-Out, Defrost Coil
- **Control of cooling, fans, heaters, defrost and lighting**
- **Superb energy saving AKV10 superheat controls**
- **Optional suction pressure superheat control**
- **Optional Dewpoint Trim Heater control (30-100%)**
- **Real Time scheduled defrosts** (selectable termination)
- **Automatic Lighting schedules**
- **Fuse fail detection for Fans and Trim Heaters**
- **Case Cleaning** available with plug-in **SKF-3** buttons



GC-E636

L155 x W 115 x D59mm

Ethernet

LED-4 Display

is mounted in the display case fascia and provides calculated product temperature and case status. Optional LED-4 version with aisle Dewpoint Sensor is available.

SKF-3 Service Key Fob

Case temperatures, control strategy control setpoint and timer settings may be viewed or changed locally at the case by plugging the optional **SKF-3** Service Key Fob button unit into the LED-4 display.

Ethernet Communications

Case status, temperature values, input/output states and alarm messages are sent via the Local Area Network connection to the central SNMP Manager software system for immediate alarm annunciation and fault diagnosis. Optional RS485 Modbus communications are also available.
All control settings and timers may be changed remotely from the central system using SNMP or Modbus protocols.

Specification

Power	230vac 5 VA 50/60HZ
Operation	0 to 55 °C
Dimensions	L 155 mm W 115 mm D 59 mm
Mounting	DIN rail
Terminals	2-part screw clamp
Approvals	**CE**

6 Temperatures PT1000 ,2K2 Thermistor
Product%, Coil-in, Coil-out, Air On, Air Off, Defrost

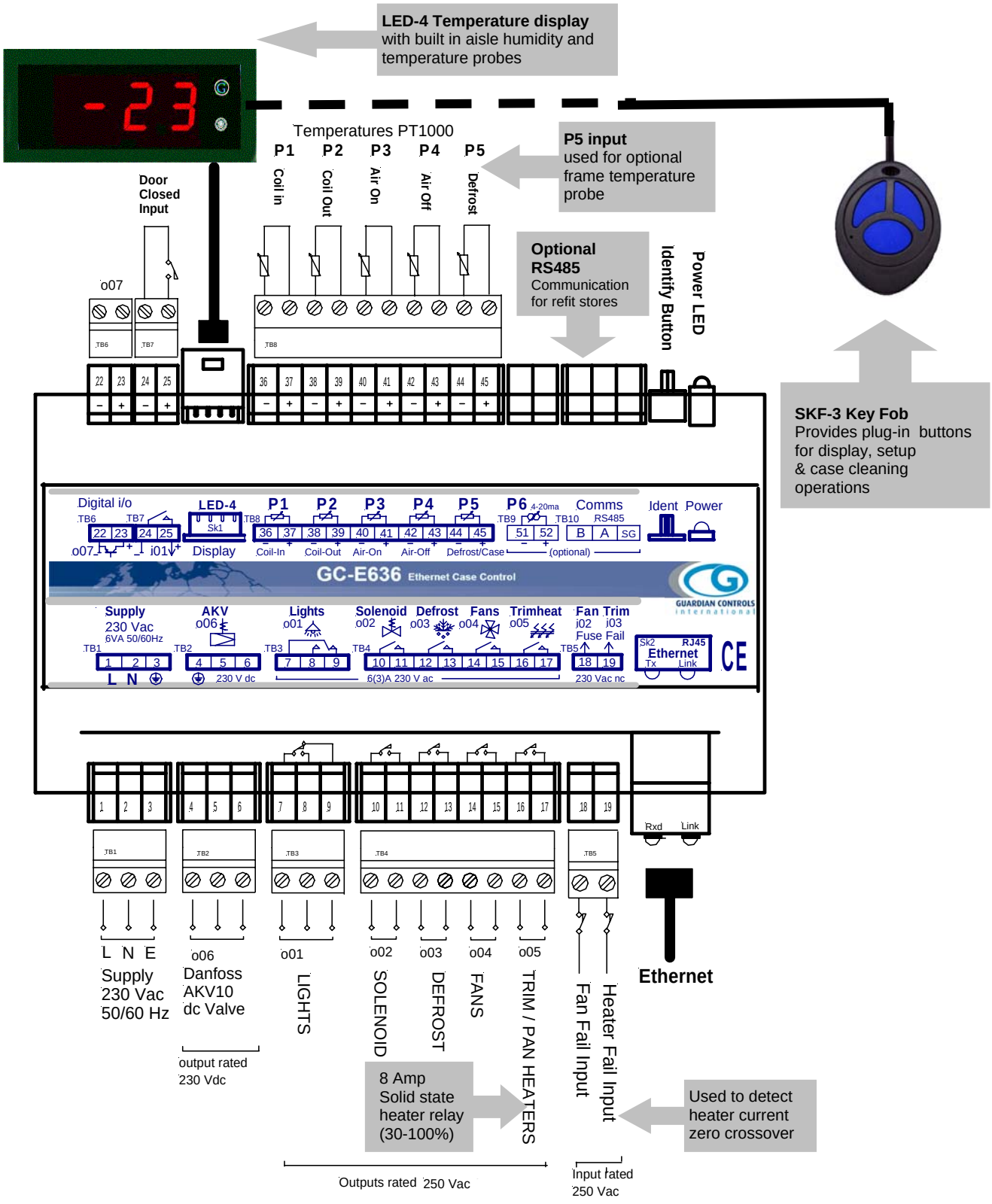
3 Digital inputs at 230vac or contact
Fan fuse fail, heater fuse fail, coldroom door

6 Relay outputs
5 n/o @ 3A Fans, Heaters, Defrost, Lights, Solenoid
1 SSR @ 230vDC 0.5A for AKV10 valve

OPTIONAL Battery backed Real time clock
RS485 Modbus communications
8 AMP SSR Dewpoint Trim Heaters (30-100%)
LED-4 with Dewpoint sensor
4-20ma Suction pressure input

Guardian Controls International Ltd.
56, Crewe Road, Sandbach, Cheshire, England CW11 4NN.
Email sales@guardian-controls.com
Tel +44(0)1270760599 Fax +44(0)1270766804

Guardian E636 Case Controller with optional integrated trim heater dew point control



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Guardian E636 Tesco Case & Coldroom Controller

Basic Controller Set-up Controller Part No. GC0500, Software v1.0

For Defaults: - Power-up the controller whilst pressing both Buttons ⌄⌃

Version 1.0 m	30 jan 2007	READ ONLY
M.T.Murphy / EWS		Set according to Requirements

Function	LED-4		Setting				Defaults
Case Control Setpoint (Cut-out)	**c01**	°C	As Required (-40.0 to +40.0 C)				**-3.0**
Cooling differential(Cutin=c01+c02)	**d02**	°K	As Required (0.1 to 9.9 K)				**1.0**
Control Probe	**c03**		3= P3 Air-on Probe	4= P4 Probe Air Off.	5=P5 Defrost Probe.	6 =Control % temp	**6**
Control % of S4 Air Off	**c04**	%	Cases Set @100% for Air Off. Coldrooms Set @ 0% for Air On.				**100**
Display % of S4 Air Off	**c05**	%	Produce & RIM 60%	F/Food & Meat/Dairy 50%	Coldrooms 0% for Air On.		**50**
Expansion Valve Type	**c06**		1 = AKV	2 = TEV			**1**
Light Function Definition	**c07**		0 = Lighting OFF	1 = Lighting ON	2 = Remote Control	3=schedule	**3**
Lighting Relay wiring	**c08**		0 = wired to N/C output	1 = wired to N/O output			**3**
Defrost Termination Probe	**d01**		4 = P4 Probe Air Off.	5 =P5 Defrost Probe.	6 = Time Only		**4**
Defrost Termination Temperature	**d02**	°C	As Required (0 to 40 C)				**10**
Maximum Defrost duration	**d03**	min	As Required	(HT Off Cycle Cases = 4)			**45**
Defrost Schedule Automatic	**d04**		As Required (0=no, 1=yes)				**1**
Fans on during defrost	**d05**		As Required (0=no, 1=yes)				**1**
Heater on during defrost	**d06**		As Required (0=no, 1=yes)				**0**
Pump Down Period	**d07**	min	As Required (0 to 60)				**0**
Drain Down Period	**d08**	min	As Required (0 to 60)				**5**
Fan Delay Period	**d09**	min	As Required (0 to 60)				**5**
Fan Start Temperature	**d10**	°C	As Required (-10 to +10C)				**0**
Number of defrosts per day	**d11**		As Required (0 to 12)				**6**
First Defrost Time	**dt01**		As Required (00:01 to 23:59) HH:MM, 0 = not used				**0000**
2nd Defrost Time	**dt02**		If Defrost schedule automatic d04=1 then defrost times values dt2 to dt12 are calculated using dt01 first time and d11 number of defrosts per day. Unused times are set to 0000.				**0000**
	etc.						
12th Defrost Time	**dt12**						**0000**
Maximum Superheat	**h01**	°K	Cases 5°C	Coldrooms 8°C			**12**
Minimum Superheat	**h02**	°K	As Default				**3**
Alarm Delay for di01 input (door)	**A01**	min	**5 Mins**				5
di01 Door input use (contact)	**A02**		**0=none**	**1= Door N/C**	**2=Door N/O**	**3=Stop input**	0
di02 Fan Fuse input use 230vac	**A03**		**0=none**	**1=Fans N/C**	**2=Fans N/O**		1
di03 Heater Fuse input use 230vac	**A04**		**0=none**	**1=Heaters N/C**	**2=heaters N/O**		1
P1 Coil In Temperature in Use	**A05**		As Required (0=no, 1=yes)				**1**
P2 Coil Out Temperature in Use	**A06**		As Required (0=no, 1=yes)				**1**
P5 Defrost Temperature in Use	**A07**		As Required (0=no, 1=yes)				**0**
Air Off High A;arm Limit	**A08**	°C	As Required				**3**
Air On High Alarm Limit	**A09**	°C	As Required				**0**
Alarm delay	**A10**	min	As Required				**10**
Defrost pulldown Alarm Delay	**A11**	min	As Required				**75**
System No. / RS485 Address	**u01**		Set to the System ID (0 to 240).				0
Pack No. Panel No.	**u02**		As Required				5
Power on delay	**u03**		As Required				3
Wait for clock update for defrost before start	**u04**		0=no, 1=yes				0
	u05		Not used				0
Real Time Clock	**u06**		As Required (00:00 to 23:59) HH:MM,				0000
Real Time Clock Weekday	**u07**		1=sunday; 2=monday, 3=tuesday, 4=wednesday, 5=Thursday, 6=Friday, 7=saturday				2
MAC Address - **READ ONLY**	**u08**		Unique IP hardware identity code (eg - Last 4 digits shown				XXXX

Alarm Display

Press ↵ to display alarms. press ⌃ Button to display alarms in severity sequence.

No Communications	**E0**	Error Probe 4	**E4**	Air-On High Alarm	**A03**	di01 Door Alarm after time	**A21**
Error Probe 1	**E1**	Error Probe 5	**E5**	**Air-Off High Alarm**	**A04**	di02 Fan Fuse Alarm	**A22**
Error Probe 2	**E2**	Error Probe 6	**E6**			di03 Trim Heater Fuse Alarm	**A23**
Error Probe 3	**E3**			t03 superheat warning	**A17**	End of list	**End**

Display & Control

repeatedly press ⌃ Button to display following in sequence. Press ↵ to select commands

Status / Display %		Coil-In Probe P1	**P1**	Superheat	**t3**	Fans relay state	**o04**
Setup Mode	**SEt**	Coil-Out Probe P2	**P2**	Superheat S.P	**t4**	Trim Heater relay state	**o05**
Test Mode	**tESt**	Air-On Probe P3	**P3**	Control State	**t5**	ESV Valve position %	**o06**
Case Automatic	**Auto**	Air-Off Probe P4	**P4**	Defrost elapsed time	**t6**	Digital Output o07 state	**o07**
Case Fans only	**FAnS**	Defrost Probe P5	**P5**	Lighting relay state	**o01**	Digital Input i01 state(door)	**i01**
Case clean Stop	**StoP**	Control % of P4	**t1**	Cooling relay state	**o02**	Digital Input i02 state (Fans)	**i02**
Manual defrost	**idEF**	Display % of P4	**t2**	Defrost relay state	**o03**	Digital Input i03 state (Trims)	**i03**

tESt Outputs press ↵	tESt		**o01 = Light**	**o02 = TEV**	**o03= Defrost**	**o04 = Fan**	**o05= Trim Htr**	**o06= AKV 100%**	0
			o07= alarm output		**O10=** All outputs ON except defrost, AKV 100%,				

Change Settings - Select	**Press ⌃, Press ↵ on SEt, ⌄»⌃ for item to change e.g c01, Press ↵.**
Change value	**Value Flashes, Press ⌄⌃ for new value. Press ↵. Press ⌃»⌃ until End, Press ↵.**

FOR ALL OTHER SETTINGS CONSULT THE MAIN MANUAL