



**FCA** THE SOLLATEK FREECOM



Temperature control, energy saving and voltage protection for all fridges, freezers and coolers.

As the problems associated with global warming become more widely recognised, measures to save energy become increasingly desirable and in some cases mandatory.

The Sollatek Freocom FCA enables cooler manufacturers to produce a more energy efficient product, thereby reducing CO<sub>2</sub> emissions and reducing electricity bills for vendors. Moreover Sollatek's range of high accuracy units ensures the beverage or chilled product is always served at the optimum temperature. This has the added benefit of allowing the cooler to comply with ever more stringent energy efficiency regulations.



Fully user configurable and programmable

“ The Sollatek FreoCom has been designed to provide accurate electronic temperature control for refrigeration and freezers. ”



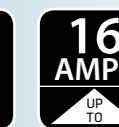
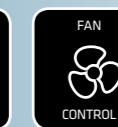
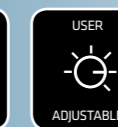
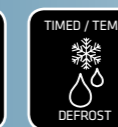
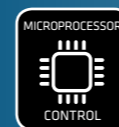


## FCA THE SOLLATEK FREOCOM



### FCA Features

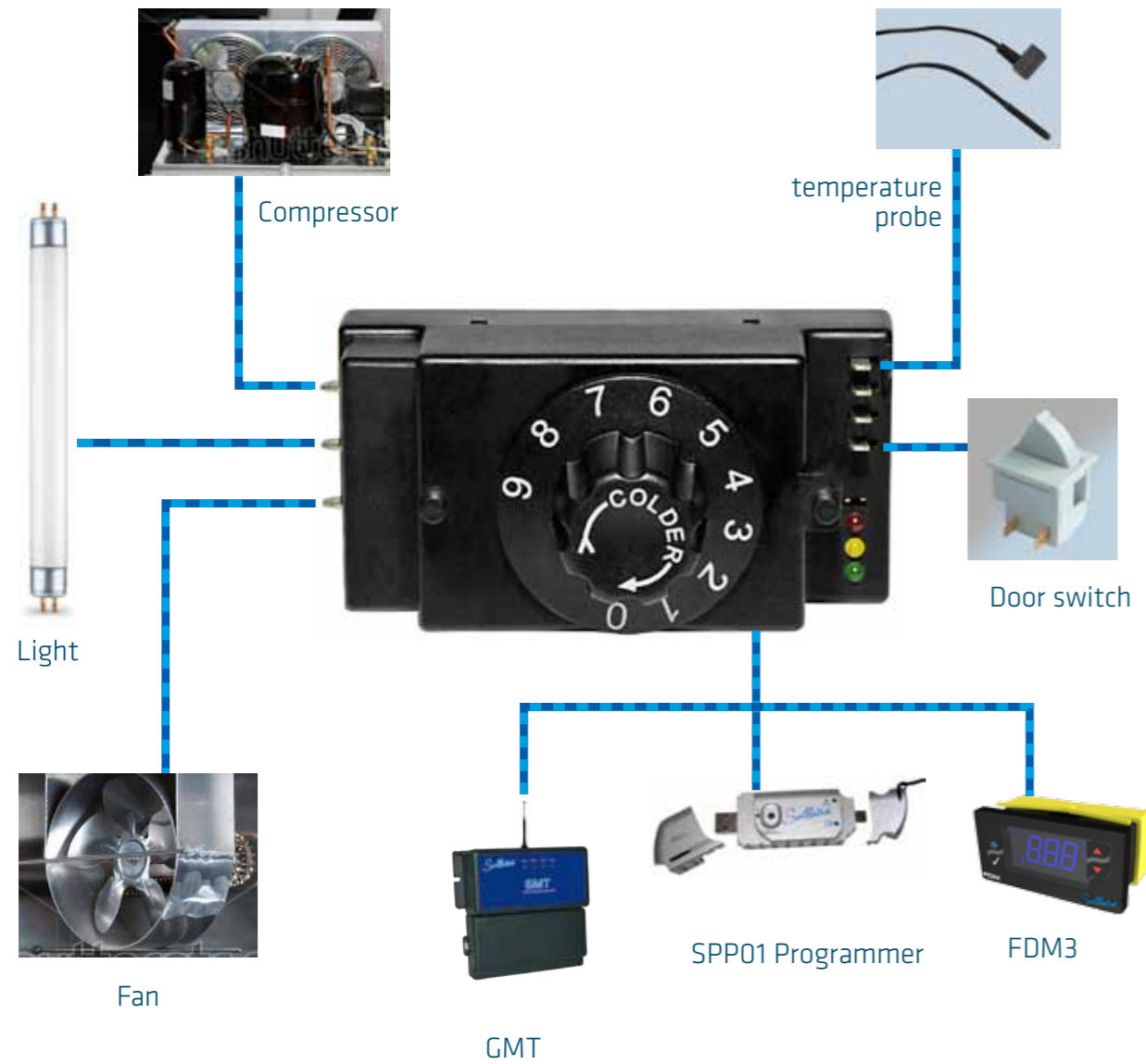
- Highly accurate temperature measurement and control - not affected by barometric pressure.
- Direct retrofit for electro-mechanical thermostats.
- Controls compressor, lights, fans and defrost heater.
- Two external remote temperature probes for precise measurement of air, evaporator or condenser temperatures.
- Temperature dial, user-adjustable. Range can be user customised.
- Intelligent time delay (TimeSave™).
- Time and/or temperature controlled defrost.
- Suitable for evaporator or air control.
- Energy saving features.
- Connects to digital display, GSM modem complete with GPS.
- Can interface to door switch, pressure sensor and other inputs.
- Wide operating voltage (80Vac to 300Vac) for universal stocking
- High and low voltage protection.
- Spike/surge protection.
- Programmable - allows the units to be custom programmed.
- Programmer and configuration software available.
- Encapsulated to give water splash resistance for rugged applications.
- Certifications include: UL, IEC (CE), HazLoc (ATEX).



## General system diagram

The FCA boasts three outputs and is suitable for controls of compressor, fans, lights and defrost heater. Two temperature sensor inputs are available for air, evaporator and condenser sensing.

Energy saving features are available and programmable in the FCA.



## General system diagram



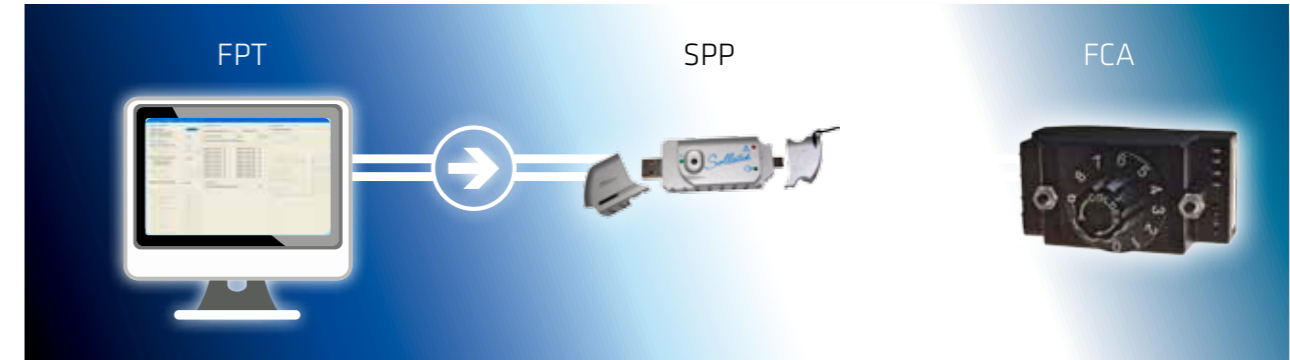
# FCA Specification

Temperature Control*	Air and evaporator		
Defrost Control*	Timed or active		
Energy Saving*	Temperature set-back and fan cycling		
Over temperature protection*	Condenser probe		
	FCA12	FCA22	FCA32
Number of relays	16A	16A + 5A	16A + 2 x 5A
Output- compressor	16A 250VAC		
	70A Inrush Current @ 240VAC		
	140A Inrush Current @ 120VAC		
	0.75HP @ 120VAC		
	1.5HP @ 240VAC		
	4000 VA Breaking Capacity		
Output - Aux1, Aux2	N/A	5A 250VAC	
	40A Inrush Current @ 240VAC		
	80A Inrush Current @ 120VAC		
	0.125HP @ 120VAC		
	0.25HP @ 240VAC		
	750 VA Breaking Capacity		
Indication	3 off LEDs		
Data interface	To digital display or Mobile modem for remote control and collection of data via a web server		
Control knob	0-9 with off position		
Operating Voltage	75 to 300V		
Continuous Withstand Voltage	up to 450V		
Time Delay*	180 Secs		
Voltage Protection*	High voltage and low voltage including hysteresis		
Low Voltage Blind Time*	2 Secs		
Immediate Disconnect Voltage*	75 / 150V		
High Voltage Blind Time*	0.5 Secs		
Control	Microprocessor		
Mounting	2 x M4 plastic studs (nuts provided)		
Programming connector	Mini USB connector		
Door switch	Via second probe input or data interface		
Temperature control	-28°C to +25°C		
Condenser high temperature alarm	+30°C to +120°C		
Working frequency	Auto-sense 50/60Hz		
Surge Protection	6.5kA, <10ns, 160J		
Power Connections	0.25" fast-on terminals suitable for push-on crimps		
Environmental	Sealed and protected against water, humidity, dust and insects		
Temperature Probe Type	NTC Thermistor		
Temperature Probe Length	1 meter or 3 meters (different lengths available)		
Unit dimensions LxWxH (mm)	82 x 42 x 36 (58 with knob)		
Unit Weight	Approx 100g		
Packing Specifications	Supplied in a carton containing 100 units		
Carton Quantity	100pcs		
Carton Dimensions (L x W x H)	50.7 x 30.4 x 27.7 cm		
Carton Gross Weight	13Kg		
Cartons per Pallet	21 (or 2100 units per pallet)		
Pallet Dimensions	120 x 102 x 99 cm		
Pallet Gross Weight	293Kg		
Certifications	IEC - EN 60730 UL - UL873 CSA - C22.2 No.24-93 Hazloc approved		

All the above mentioned operational parameters are configurable based on the customer's needs.

\* Programmable

# FCA Programming



**Sollatek FPT** The FPT (Freo Programming Tool) can be used by the customer to select various functions, configure options and specify parameters.

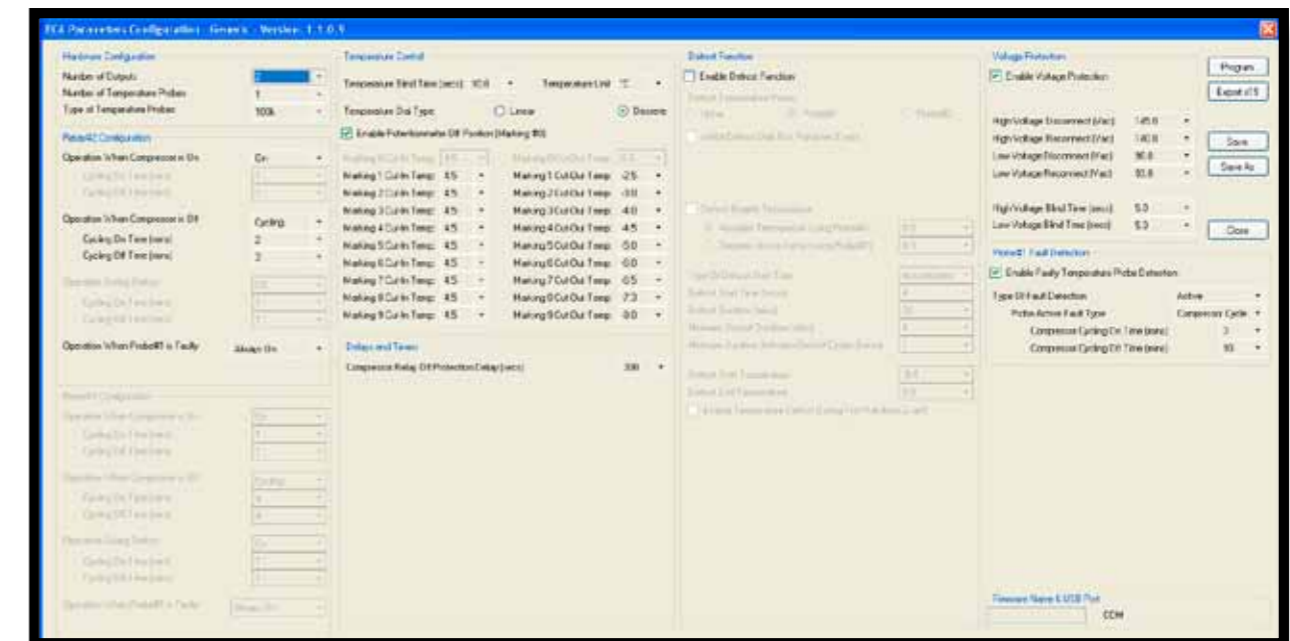
So as to customise the operations of the FCAs, these programmes can be stored on the customer's computers and can be recalled for future use.

The parameters are then downloaded from the computer to the SPP programmer via a standard USB socket.

The programmer is then removed from the computer and is then used to programme one or many FCA controllers via the mini USB connector.

A simple button on the programme starts the process and two coloured LEDs indicate programming status. The programmer has an internal rechargeable battery and this is recharged when plugged into a computer's USB socket or similar device.

Details of the programmable parameters are shown on the following pages.



Example programming page

# FCA Programmable Parameters

Item	Min	Max	Units
<b>Hardware Configuration</b>			
Number of Outputs	1	3	Number
Number of Temperature Probes	1	2	Number
Enable Door Switch	Yes/No		
<b>Relay#2 Configuration</b>			
Operation When Compressor is Cycling On	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation When Compressor is Cycling Off	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation During Deforst	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation When Door Switch is Open	Normal/Off		
Door Switch Open Duration	1	255	Secs
Door Switch Close Duration	1	255	Secs
<b>Relay#3 Configuration</b>			
Operation When Compressor is Cycling On	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation When Compressor is Cycling Off	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation During Deforst	On/Off/Cycling/Heater		
Cycling On Time	1	255	Mins
Cycling Off Time	1	255	Mins
Operation When Door Switch is Open	Normal/Off		
Door Switch Open Duration	1	255	Secs
Door Switch Close Duration	1	255	Secs
<b>Temperature Control</b>			
Temperature Blind Time	0	25	Secs
Primary Temperature Probe	Probe1 or Probe2		
Temperature Units	°C/°F		
Temperature Dial Type	Linear/Discrete		
Enable Potentiometer Off Position (Dial Marking 0)	Yes/No		
Dial Marking 0-12 (Cut-In Temp)	-28.0 (-18.4)	+25.0 (+77.0)	°C (°F)
Dial Marking 0-12 (Cut-Out Temp)	-28.0 (-18.4)	+25.0 (+77.0)	°C (°F)
<b>Delays and Timers</b>			
Compressor Relay - Off Protection Delay	0	500	Secs

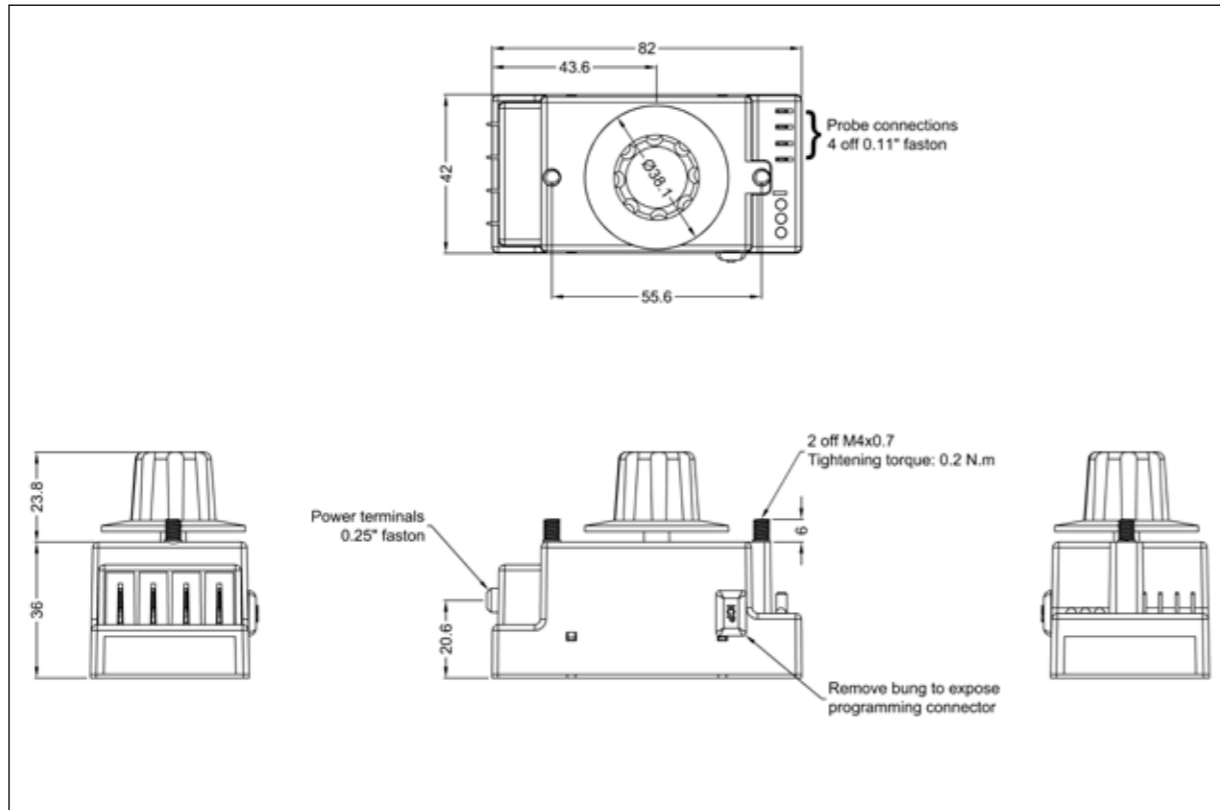
# FCA Programmable Parameters

Item	Min	Max	Units
<b>Defrost Function</b>			
Enable Defrost Function	Yes/No		
Defrost Temperature probe	Probe1 or Probe2		
Inhibit Defrost Until First Pull-down Event	Yes/No		
Inhibit Defrost Temperature	0 (+32)	+25 (+77)	°C (°F)
Defrost Inhibit Duration	1	255	Hours
Defrost Enable Temperature	Yes/No		
Absolute Temperature	-25 (-18.4)	+25 (+77)	°C (°F)
Degrees Above Cut-In	0 (0)	+20 (+36)	°C (°F)
Type of Defrost Start Time	Real/Accumulated/Continuous		
Defrost Start Time	1	255	Hours
Defrost Duration	1	255	Mins
Minimum Defrost Duration	1	255	Mins
Minimum Duration Between Defrost Cycles	1	255	Hours
Defrost Start Temperature	-25 (-18.4)	+25 (+77)	°C (°F)
Defrost End Temperature	-25 (-18.4)	+25 (+77)	°C (°F)
Enable Defrost When Probe#1 is Faulty	Yes/No		
Enable Defrost When Probe#2 is Faulty	Yes/No		
Enable Defrost Emergency Mode	Yes/No		
Emergency Mode Defrost Start Time	1	255	Hours
Emergency Mode Defrost End Time	1	255	Mins
<b>Voltage Protection</b>			
Enable Voltage Protection	Yes/No		
High Voltage Disconnect	150 (75)	300 (150)	Vac
High Voltage Reconnect	150 (75)	300 (150)	Vac
Low Voltage Disconnect	150 (75)	300 (150)	Vac
Low Voltage Reconnect	150 (75)	300 (150)	Vac
High Voltage Blind Time	0	25	Secs
Low Voltage Blind Time	0	25	Secs
<b>Door Switch Operation</b>			
Enable Door Switch Operation	Yes/No		
Operation When Door Switch is Open	Normal/Off		
Door Switch Open Persistence Duration	1	255	Secs
Door Switch Close Persistence Duration	1	255	Secs
<b>Heater Function</b>			
Heater Cut-in Temperature	-25 (-18.4)	+25 (+77)	°C (°F)
Heater Cut-out Temperature	-25 (-18.4)	+25 (+77)	°C (°F)
<b>Probe#1 Fault Detection</b>			
Enable Faulty Temperature Probe Detection	Yes/No		
Type Of Fault Detection	Active/Passive		
Probe Active Fault Detection	Compressor Off/Compressor Cycle		
Compressor Cycling On Time	1	255	Mins
Compressor Cycling Off Time	1	255	Mins
<b>Probe#2 Fault Detection</b>			
Enable Faulty Temperature Probe Detection	Yes/No		
Type Of Fault Detection	Active/Passive		
Probe Active Fault Detection	Compressor Off/Compressor Cycle		
Compressor Cycling On Time	1	255	Mins
Compressor Cycling Off Time	1	255	Mins

The above parameters can be programmed into the FCA using the SPP programmer as described on page 9

# FCA

## Mechanical drawings



## Other products in the Freo Range



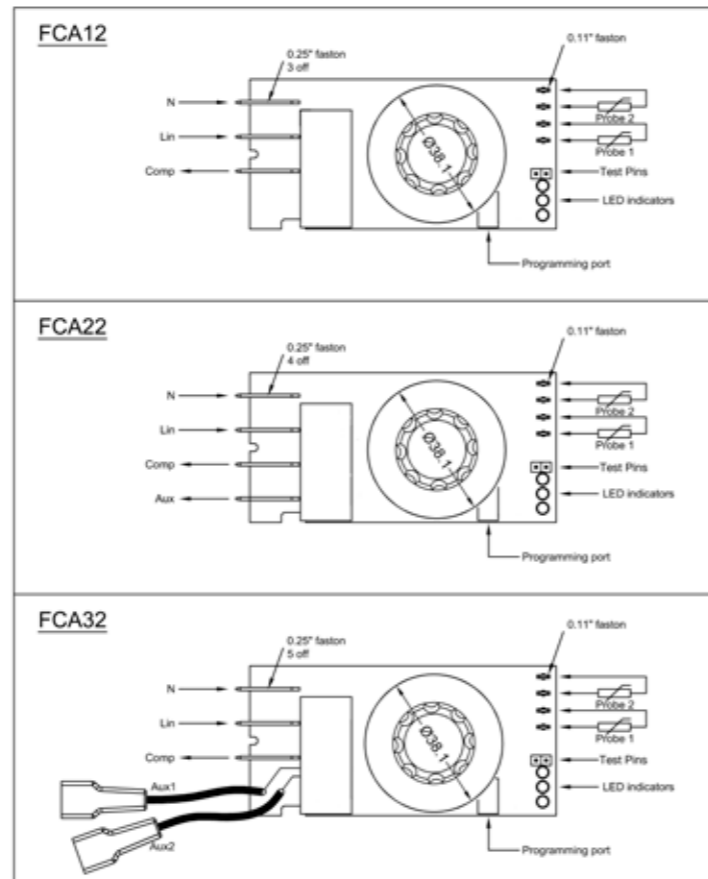
**Freocom FDM3** The FDM3 an LED digital display in standard DIN enclosure with four buttons and menu system for viewing and changing a wide range of parameters in your refrigeration system. This connects directly to an FCA, giving a user interface and alarm display for the temperature controller. The FDM3 is powered directly from the FCA.



**Freocom FCD** The FCD provides large format display (H:57mm) temperature control and voltage protection for all fridges, freezers, and coolers. With highly accurate temperature control and display, it provides a large, bright display visible from a distance of at least 20m.

# FCA

## Connections



**GMT** The Sollatek Global Mobile Tracker (GMT) provides essential, accurate and cost effective information to other companies and product vendors. It receive alarms from coolers and remotely diagnoses problems. It can also provide data collection and logging which in turn reduces service calls. Anticipates planned service visits. Also tracks cooler location and Geo-fencing.



**Freocom FSP** The Freo Stabilised Protector (FSP) provides voltage protection *and* stabilisation for all fridges, freezers, and coolers. The FSP regulates the mains supply voltage, keeping applications running during wide voltage fluctuations and protecting them from damage. This greatly improves compressor reliability.

Stock No	Description
92370310	Freocom FCA12 1xO-P 2xI-P 75-300V
92370320	Freocom FCA22 2xO-P 2xI-P 75-300V
92370330	Freocom FCA32 3xO-P 2xI-P 75-300V

# Sollatek's **expertise** extends **worldwide** through **local networks**



## *Global and Local*

With a customer base across the world and a local presence in more than 50 countries, Sollatek is able to provide support services wherever you are.



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#### **ISO9001: 2008 accredited company**

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