

## FDEx2i

### ALL ENCOMPASSING TEMPERATURE CONTROLLER WITH BUILT-IN CONNECTIVITY AND TRACKING

#### DESCRIPTION

The FDEx2i provides accurate temperature control with advanced defrost and energy-saving abilities as well as the ability to monitor cooler sales and performance data on the online portal without the need for a member of staff to visit the cooler.

The FDEx2i delivers flexibility and complete management of the cooler to ensure operations can match store requirements with control of up to 3 outputs including compressor Variable Speed Control (depending on the model) and 3 input sensors of temperatures and door as well as over 100 configurable parameters and is HC compatible.

The FDEx2i provides remote monitoring, configuration and asset location via the online portal and/or phone application. Data from the FDEx2i can be used for sales/customer insights, including during power-down events, as well as health monitoring and early fault detection to reduce cooler downtime. Service personnel can also remotely configure and update the FDEx2i to always ensure precise control and operation. In the event of a theft or unauthorised movement, the controller functionality can be disabled until the cooler has been successfully located and recovered.

The FDEx2i is small, compact, and fully encompassing, including the GSM antenna allowing simple and discrete mounting anywhere in the cooler and can be connected to an external display for live temperature reading, status, alarms, and parameter configuration.

#### FEATURES

- GSM Connectivity Options for Secure Data Transmission to the Online Portal for Remote Monitoring and Configuration
- Internal Cellular Antenna
- Bluetooth Low Energy (BLE) for Remote Monitoring and Configuration of Status and Parameters via the Sollatek Smart Device App
- Connects to a BLE and Wi-Fi Camera for Stock and Purity Monitoring
- Proximity Marketing through iBeacon and Eddystone Beacons
- Geo-Location via Wi-Fi Sniffing, Cellular Triangulation or External GNSS (GPS) Module
- Electronic Temperature Controller for Coolers, Fridges, and Freezers
- Energy Saving via the Door Switch (Temperature Set-Back, Lights Off) and/or Fan Cycling
- Time and/or Temperature Controlled Defrost with Advanced Features
- Controls up to 3 Outputs including Compressor, Fans, Lights, and Heater
- Compressor Variable Speed Control (VSC) via Variable Frequency Control
- Two External Inputs for Temperature Probes and Door Switch
- Connects to an External Display for Live Status, Temperature, and Parameter Configuration



#### FEATURES



#### OPTIONS



#### Display Compatibility

The FDEx2i can be connected to a Sollatek display:

##### FDM3

(H) 14 mm

Available Soon



##### FDM4 / FDM4-S

(H) 30 mm



##### FDM5 / FDM5-S

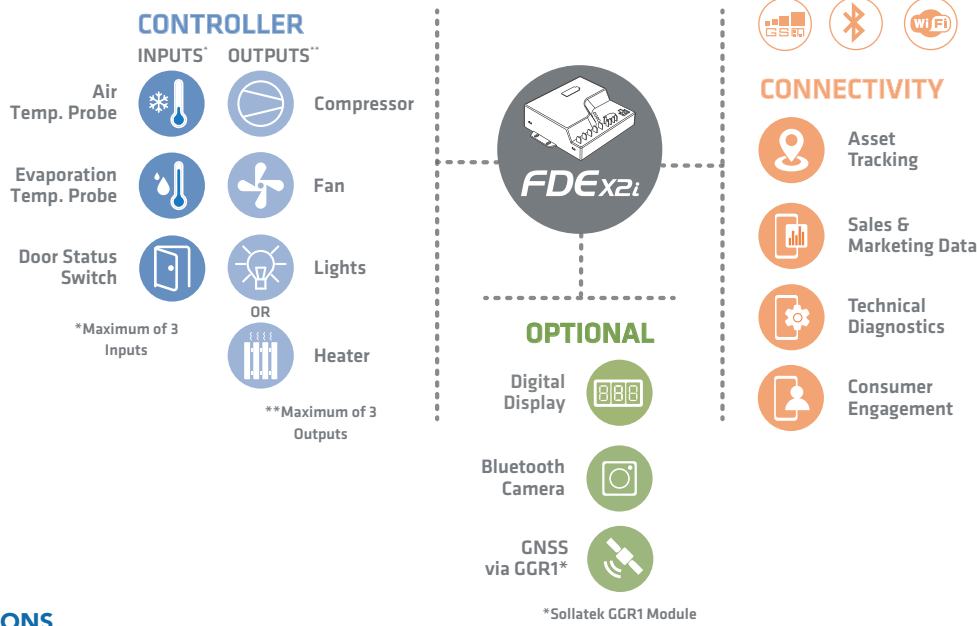
(H) 50 mm



## FEATURES (Cont.)

- Rechargeable Battery for Location, Temperature Measurements and Door Switch Openings Transmission when Mains is OFF
- Battery Overcharge and Battery Temperature Protection
- 1 Months of Battery Autonomy Depending on Set Transmission Interval
- Transmission Interval Customisable to Match Requirement
- On-Board Accelerometer for Movement Detection
- Embedded Flash Memory for Data or Image Storing between Transmissions
- Zero Voltage Crossing Switching for Long Relay Life
- Complete Voltage Protection (High/Low, Spike/Surge Protection)
- Intelligent Time Delays for Compressor OFF Periods including Brownouts
- TIMESAVE™ Function - Voltage Sensing Period before Reconnecting Supply after a Bad Voltage Disconnection
- 4 LEDs for Status Indication
- Programmable via SPP04 Programmer Device for Factory and In-The-Field Upgrades
- Hydrocarbon Refrigerants Compatible
- Encapsulated for Maximum Environmental Protection

## SYSTEM DIAGRAM



## SPECIFICATIONS

REFRIGERATION CONTROL <sup>1</sup>			
Temperature Control Method	Air or Evaporator		
Temperature Control Range	-40°C to +40°C (-40°F to +104°F)		
Temperature Blind Time	1 - 255 s		
Defrost Control	Timed, Active or Manual (via a display)		
Advanced Defrost Mode	Pre, Post and Post Defrost Recovery, Emergency Defrost		
Energy Saving	Temperature Set-back, Fan Cycling, Lights OFF		
Input Type (Max 3)	Temperature Sensors & Door Switch		
Temperature Probe Type	100 KΩ NTC ( $\beta_{25/50}$ : 3990 k)		
Output Control	Compressor, Lights, Evaporator Fan, Reverse Fan, Heater or Hot Gas Valve		
Model Variants (Max 3)	FDE12 Compressor only	FDE22 Compressor & 1 additional output (eg. Fan)	FDE32 Compressor & 2 additional output (eg. Fan, Light or Defrost)
	IEC 60730		UL 60730
Compressor Relay	16 A 250 V, 100K Cycles	Motor Load 115 VAC, 16 FLA, 72 LRA, 30K Cycles Motor Load 230 VAC, 10 FLA, 60 LRA, 30K Cycles	
Fan Relay <sup>2</sup>	5 A, 250 V, 50K Cycles	1.5 FLA, 9 LRA, 30K Cycles	
Aux <sup>2</sup>	5 A, 250 V, 50K Cycles	1.5 FLA, 9 LRA, 30K Cycles	
Maximum Total Current Rating	16 A	18 A	18 A
Intelligent Time Delay (Compressor Protection Delay)	0 - 600 s		
Refrigerant Compatibility	CO <sub>2</sub> & Hydrocarbon		

<sup>1</sup> There are a wide range of operational parameters and settings that can be customised to suit individual use cases.

<sup>2</sup> Can also be configured to drive a Fan, Heater, Lights or a Hot Gas Valve.



**SPECIFICATIONS (Cont.)**

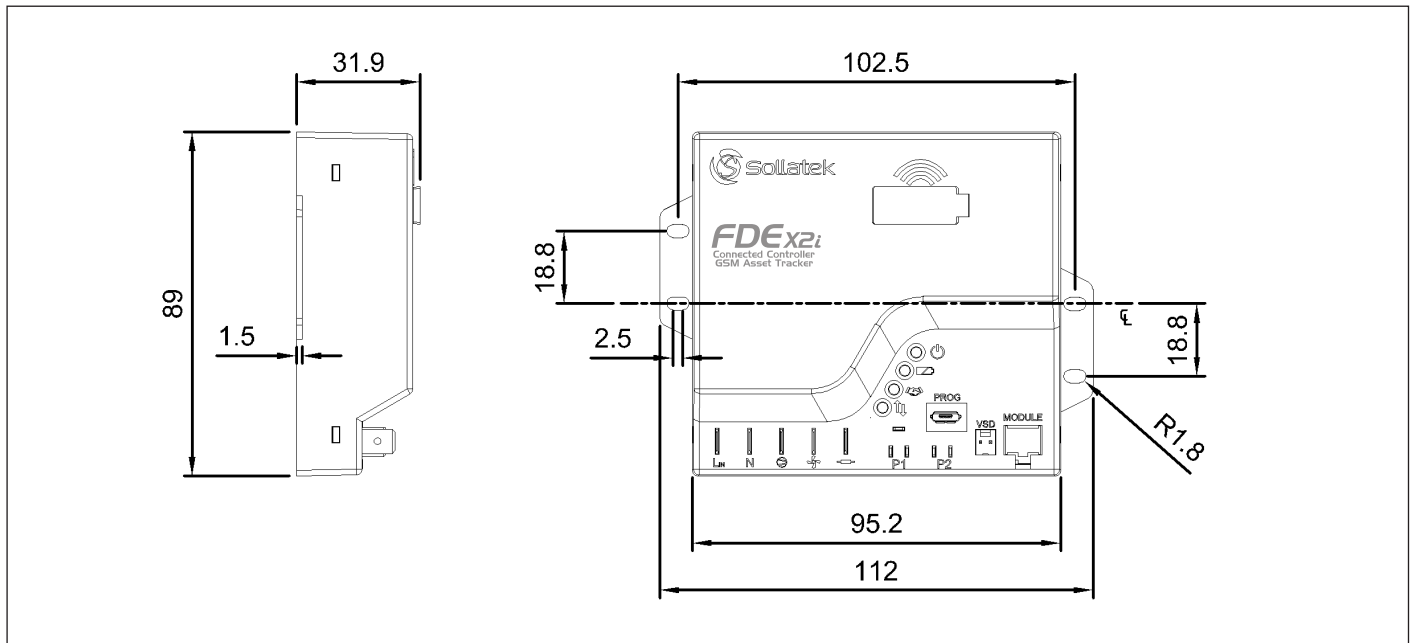
<b>POWER &amp; VOLTAGE PROTECTION</b>	
Nominal Voltage	115 V or 230 V
Withstand Voltage	Up to 415 V AC
Working Frequency	Auto-sense 45 - 60 Hz
Type of Protection	High / Low, Spike / Surge & Frequency
High / Low Voltage Blind Time	0 - 255 s
Surge Protection	6.5 kA, <10 ns, 160 J
Over Voltage Category	Category II
<b>CELLULAR CONNECTIVITY</b>	
Target Region	Global
Antenna	Internal
Type	2G <span style="float: right;">LTE</span>
Category	EDGE, GSM, GPRS <span style="float: right;">Cat-M1, Cat-NB1</span>
Frequency Band	850 / 900 / 1800 / 1900 <span style="float: right;">B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B28, B39</span>
<b>BLUETOOTH CONNECTIVITY</b>	
Type/version	BLE 5.4
RF Power Output	-20 dBm to +4 dBm
Frequency	2.4 GHz ISM
Connectivity	Eddystone, iBeacon & connection to the Sollatek Smart Device Application
Bluetooth Standard	IEEE 802.15.1
Memory Size	32 Mb for data/image storing between transmission
<b>WI-FI GEO-LOCATION</b>	
Frequency Range	2.4 GHz
Protocol	802.11 b/g/n
<b>ACCELEROMETER</b>	
Measurement Direction	3-axis
Measurement Scale	High Sensitivity ±2g
<b>BATTERY</b>	
Battery Type	Rechargeable Lithium Polymer
Nominal Voltage	3.7 V
Capacity	700 mAh
Typical Run Time	Approx. 1 months (depending on set transmission frequency)
<b>USER INTERFACE</b>	
LEDs	1 x Controller Status ; 1 x Battery Status ; 2 x GSM Status
Display (Optional)	Connects to the FDM3, FDM4 & FDM5 Display Range
<b>CONNECTOR / INTERFACE</b>	
Input Connector	1 pair of 0.11" (2.80 mm) Faston Tabs, 1 triple 0.11" (2.80 mm) Faston Tabs
Output Connector	Up to 5 x 0.25" (6.35 mm) Faston Tabs (depending on model)
External Device Connector	6-way (3x2) Female Connector Block
Data / Programming	Micro USB-B for Programming
Sim Card	Push-Push Micro SIM holder
<b>ENVIRONMENTAL</b>	
IP Rating	IP54 Electronics: IP65 (PCB encapsulated)
Operating Temperature	-10°C to +60°C (+14°F to +140°F)
Operating Humidity	<90% RH non-condensing
Shipping/Storage Temperature	-10°C to +45°C (14°F to +113°F)
Battery Charging Temperature	0°C to +45°C (32°F to +113°F)
<b>CERTIFICATION / STANDARDS</b>	
Product Certification	CE, IEC60730-1, IEC60730-2-9, EN60079-15, UL60730-1, UL60730-2-9, UL 60730-1, CSA 60730-1, FCC, UKCA
Flammability	UL94 V-0 @ 1.5 mm, GWFI: 960 °C, GWIT: 850 °C
EMC	Per EN 301 489-1, EN 301 489-7, EN 301 489-17
Pollution Degree	2
Disconnection Type	Type 1.B



**SPECIFICATIONS (Cont.)**

<b>MECHANICAL</b>		
Mounting	4 x M4 self-tapping pozidriv screws	
Unit Dimensions	112.0 x 89.0 x 31.9 mm	
Unit Weight	Approx. 210 g	
<b>PACKING</b>		
Carton Dimensions (L x W x H)	510 x 560 x 250 mm	
Carton Quantity	1 carton (100 units)	
Carton Weight	23.5 kg	
	<b>SEA</b>	<b>AIR</b>
Pallet Dimensions (L x W x H)	1200 x 1020 x 2150 mm	1200 x 1000 x 900 mm
Pallet Quantity	30 cartons (3000 units per pallet)	12 cartons (1200 units per pallet)
Pallet Weight	723.0 kg	300.0 kg

**DIMENSIONAL DRAWING**



PRODUCT CODE	DESCRIPTION
<b>Sollatek Portal</b>	
9235222S	FDE22-2BW 2xOP 2G+BLE+Batt+WiFi
9235322S	FDE32-2BW 3xOP 2G+BLE+Batt+WiFi
92353223	FDE32-2BW3 3xOP 2G+BLE+Batt+WiFi+3V3 SOI
9235324S	FDE32-4BW 3xOP 4G
92353243	FDE32-4BW3 3xOP 4G 3V3 Sol
92353224	FDE32-2BW4 3xOP 2G+BLE+Batt+W+3V3 w/o SIM
92353245	FDE32-4BW 3xOP 4GT
92353245A	FDE32-4BW 3xOP 4GT VSC
92353245V	FDE32-4BW 3xOP 4GT VSC
92353240V	FDE32-4BW 3xOP 4G VSC
<b>Non-Sollatek Portal</b>	
92352220	FDE22-2BW 2xOP 2G+BLE+Batt+WiFi
92353220	FDE32-2BW 3xOP 2G+BLE+Batt+WiFi
92353240	FDE32-4BW 3xOP 4G
92353240A	FDE32-4BW 3xOP 4G

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