AoFrio

SCS

The smarter IoT controller

- Advanced refrigeration controls
- Energy saving
- Smart connectivity
- Commercial performance
- Asset management
- Technical diagnostics
- Digital engagement

Specifications

Input voltage range	90-240Vac 50/60 Hz
IP rating	Front panel IP68 (back IPx5)
Max. power consumption	3.5W
Relay ratings	1x UL: 7.2FLA & 34.8LRA, IEC: 8A 1x UL: 3A, IEC: 3A 2 x 0.4A (triac solid state)
Low voltage output ratings	1 x 5Vdc 100mA 4 x 0-24Vdc, 1A per channel*
EMC protection	4000V (per EN61000-6-2)
Refrigerant compatibility	HFC, CO_2, Hydrocarbon (per IEC 60335-2-89)
Operating temperature range	IEC -20°C to +55°C (-4°F to +131°F) UL -20°C to +50°C (-4°F to +122°F)
Storage temperature range	-40°C to +80°C (-40°F to +176°F)
Weight	130g (4.6oz)
Approvals	CE cULus FC RoHS Bluetooth

Product models and variants

Model	Variant	Reference SKU[†]	HV outputs	LV outputs	Inputs	Realtime Clock
SCS 600	with display	SCSLC2001	4	4/5[‡]	4/5[‡]	✓
	no display	SCSLC2003	4	4/5[‡]	4/5[‡]	✓
SCS 500	with display	SCSLC2024	3	1	4	✓
	no display	SCSLC2023	3	1	4	✓

Features

Energy saving	3-level standby with automatic recovery, including temperature, lighting, and fan control
Connectivity	Bluetooth connected via AoFrio IoT System
Consumer engagement	Beacon connectivity using iBeacon and Eddystone
Defrost	Electrical, passive or hot gas bypass defrost with time or temperature based initiation
Alarms	Configurable alarms for door state, product and system temperatures, faults and more
Self-diagnosis	Sensors, compressor, lighting and fan failure detection with advanced system diagnostics
Configuration	Parameter setting via buttons or smartphone interface, permissions required

* External LVDC supply required for 24VDC outputs.

[†] Listed part numbers have green display and without trim. Other colors and configurations are available on request.

[‡] Depending on configuration. AD4 can be either input or output.

HV connections

HV	Name	Rating
C	Compressor	Switched 8A output
R	Relay	Switched 3A output
S2§	Switch 2	Switched 0.4A output
S1	Switch 1	Switched 0.4A output
P	Phase	90-240Vac input
N	Neutral	

LV connections

SELV	Name	Rating
AD1-3	Sensor inputs	Digital 0-5Vdc input Analog NTC input
AD4	Sensor input or switched output	Digital 0-5Vdc input Analog NTC input 5V 100mA output
AD5§	Sensor input	Digital 0-5Vdc input Analog NTC input
AD5§	PWM output	0-24Vdc, 1A output
LE1-3§	PWM output	0-24Vdc, 1A output each
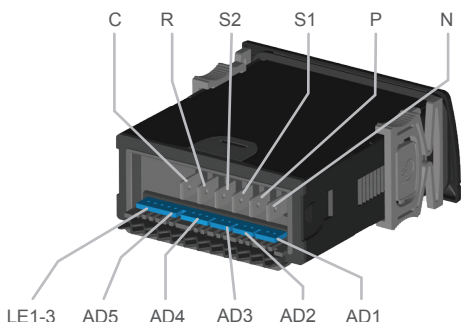
- Outputs S1 and S2§ can be used to switch fan motors and lights or as a signal line to control the speed of Wellington ECR evaporator and condenser fan motors in real time.

- Output R can be used to switch lights or defrost heater.

- Outputs LE1§, LE2§, and LE3§ are independently controlled PWM outputs for dimming LEDs powered from a separate DC power supply. They can be used to provide color tuning or multi-zone intensity control for LED lighting. LED power supply is not included.

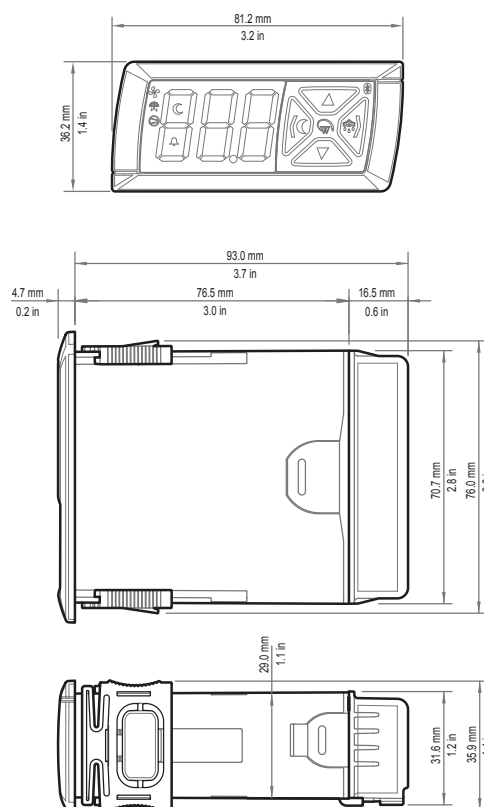§ Available on SCS600 only.

‖ Not available on "-A" variants.

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Dimensions

Supporting software

A Windows app is available for OEMs to allow inhouse management and configuration of firmware, parameters, and ownership associations.

Each parameter can be given a unique access level ensuring service personnel can only make allowed changes.

A suite of smartphone apps allows role-based secure access to the controller using an intuitive digital interface to:

- View locally-stored data, including temperature, door opening, power consumption‖, events and errors;

- Override sensor inputs and relay outputs for faster and more accurate diagnostics