

High Efficiency Cooling Units with Smart Energy Control



PRODUCT INFORMATION No. 03-2015

Indel Webasto marine has decided to ***merge the consolidated success of the cooling units*** program ***within the new born-exclusive technology of the Smart Energy Control device***, into a ***ready to install kit that can dramatically reduce the power consumption*** of your fridge.

That is the concept at the base of the “High efficiency Cooling Units”, offering 3 products in one set:

- Condensing unit, SECOP compressor based
- Evaporator, to be selected among 4 sizes of different models to match customer’s requirements
- Smart Energy Control device



Via the High Efficiency Cooling Units product line we would differentiate our proposal from competition remarkably, on an entry level product base like a standard cooling unit

A “pull effect” will be created in the market, associating the Smart Energy concept, relatively new, to a well established product line like our cooling units, into a mutual benefit situation

Sales will be supported with dedicated customer/end user installation instruction and guidelines, to easier the unit application



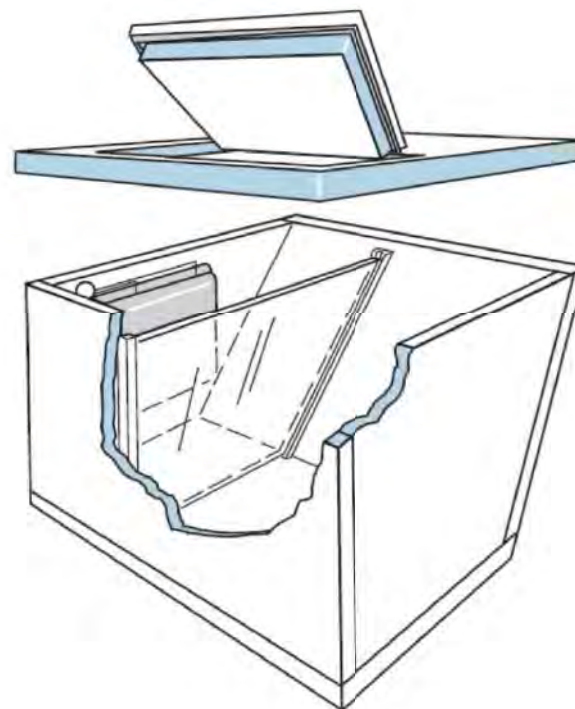
Refrigerating units we selected are air cooled compact cooling units with direct evaporator, available for fridge or freezer applications, in four different evaporator sizes:

Type	Max Volume (l)		Dimensions evaporator W x H x D (mm)	Dimensions compressor W x H x D (mm)	Secop compressor type
	Fridge	Freezer			
Air Cooled					
GE80S	80	26	350 x 250	280 x 160 x 175	BD35F
GE150S	150	50	386 x 361	280 x 160 x 175	BD35F
2010S	125	41	400 + 170 x 210	280 x 160 x 175	BD35F
2013S	400	133	1370 x 300	330 x 160 x 175	BD50F

* Temperatures range: for fridge use down to +2 °C; for freezer use down to -18 °C in accumulation mode and -12°C in modulation (economy) mode.

We recommend the following insulation:

Volume	Recommended Insulation thickness
FRIDGE up to 80L	3/5 cm
FRIDGE 80 to 125L	5 cm
FRIDGE from 125L	5/15 cm
FREEZER up to 40L	5 cm
FREEZER 40 to 50L	8 cm
FREEZER 50 to 135L	8/15 cm





High Efficiency Cooling Unit

- Available for fridge or freezer application
 - 4 different evaporators available
 - 12/24 V DC unit
 - integrated Smart Energy Control
- The lowest power consumption on the market
 - Unique compressor modulation logic
- Soft start function to minimize the battery drainage
 - Overcooling function to store cold energy in food and drinks
 - Reusable quick coupling gas connectors
- Easy to install with the "click-on" bracket system





High Efficiency Cooling Unit



isotherm
Smart Energy Control

isotherm

- GE 80S**
Compressor + evaporator (350x250mm)
+ Smart Energy Control
Capacity (L): fridge 80, freezer 26
- Compact 2010S**
Compressor + evaporator (400+170x210mm)
+ Smart Energy Control
Capacity (L): fridge 125, freezer 41
- Compact 2013S**
Compressor + evaporator (1370x300mm)
+ Smart Energy Control
Capacity (L): fridge 400, freezer 133
- GE 150S**
Compressor + evaporator (386x361mm)
+ Smart Energy Control
Capacity (L): fridge 150, freezer 50

3in1

On the package the model type would be identified by ticking the respective box



isotherm

High Efficiency Cooling Unit



4 different evaporators



Smart Energy Control



Optimized compressor operating logic



Lowest power consumption on the market

* based on 25°C outside temperature and on cruise 130 classic



Reusable quick couplings



"Click-on" bracket system



Available for fridge or freezer application



4 different evaporators' selection



12/24 V DC unit



Isotherm Smart Energy Control integrated



Unique compressor modulation logic



Soft start function to minimize battery drainage



Overcooling function to store cold energy in food and drinks



Reusable quick coupling gas connectors



Easy to install with the «click-on» bracket system



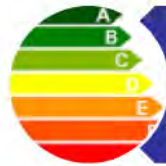
The lowest power consumption on the market

Part Numbers, Descriptions, Prices and Availability

Part Numbers	Description	Price
4G080BS1X0000	Refr. Unit GE80, 80L Flat Evaporator Small 350 x 250 mm, SEC	Pls contact IWM
4G150BS1X0000	Refr. Unit GE150, 150L Flat Evaporator Medium 386 x 361 mm, SEC	Pls contact IWM
42010BS1X0000	Refr. Unit Compact 125L L Evaporator 400+170x210 mm, SEC	Pls contact IWM
42013BS1X0000	Refr. Unit Compact 400L Flat Evaporator 1370x300 mm, SEC	Pls contact IWM

Part Numbers, Descriptions, Prices and Availability

Part Numbers	Box 1	Box 2 (evaporator)
4G080BS1X0000	44,5 x 30 x 30 cm	Included in Box 1
4G150BS1X0000	44,5 x 30 x 30 cm	40 x 40 x 16 cm
42010BS1X0000	44,5 x 30 x 30 cm	Included in Box 1
42013BS1X0000	44,5 x 30 x 30 cm	144 x 33 x 8 cm



Improved efficiency class



Compressor's modulation



Overcooling mode



Soft start function



Quick cooling function



Award-winning innovative solution



You have suffered too often from electrical power shortages and want to extend your electrical autonomy significantly? Use the existing double potential of your Isotherm fridge and take advantage of Isotherm Smart Energy Control.

Smart Energy Control is in fact available as a pure after market kit, feasible to be installed almost on every BD35F and BD50F fridge solution, either already installed on fridges at the factory.

- Simple kit, quick and easy to install
- Upgradability on Isotherm fridges with SECOP compressors models BD35F, and BD50F
- Up to 35% energy savings solely due to compressor efficiency gains
- Up to 50% energy savings with combined effect of cold energy surplus stored in food/drinks
- Boost mode for quick cooling
- Soft-start to avoid starting surges
- No need for eutectic plates



Sales tips!

Refer to Indel Webasto Marine technical services to get up-to-date information on the product Smart Energy Control within our range and related technical facts on how to install, test, tune and validate the application of a refrigerator with Smart Energy Control.

If required, on the range Cruise Classic and Cruise Elegance up to 130 liters, the Smart Energy Control can be applied directly on the product in our plant.

Continuously optimized compressor efficiency

The sophisticated, processor-based Isotherm Smart Energy Control technology achieves significant savings in terms of power consumption by continuously scanning a set of key environmental factors to determine, the optimum compressor speed which maximizes the performance/battery drain ratio (COP).

Smart storage and use of cold energy

Isotherm Smart Energy Control optimizes not only the efficiency of Secop compressor but also uses the cooling energy storage potential of food and drinks inside the fridge. A continuous monitoring of the cabinet air temperature through a dedicated air sensor allows a controlled over-cooling phase while preventing any freezing of the food.



Note: The system must be configured via mechanical switches to match the specifications of the refrigeration cabinet (size, usage as a fridge/freezer). Please refer to our Isotherm Smart Energy Control application guidelines or consult your Isotherm refrigeration specialist to optimize your installation.



Isotherm Smart Energy Control Kit:



Processor-based module to be connected to the Secop compressor.

Potentiometer to activate the Isotherm Smart Energy Control mode.



A dedicated air sensor continuously measures the cabinet air temperature inside the fridge.



External factors

- Cabinet air temperature
- Temperature set point
- Battery charge status
- Battery voltage

Configuration Parameters

- Cabinet size
- Offset values

Available potential of DC fridges

- Energy storage potential of loaded food/drinks
- Variable speed capability of DC compressors



Energy Savings

- Maximized performance/battery drain ratio (COP)
- Reuse of energy stored in food/drinks
- Speed modulation: Soft start up and boost mode

Can your fridge be upgraded?

Most Isotherm refrigeration products can be upgraded with Isotherm Smart Energy Control. Please contact your dealer to request application and installation guidelines.

Follow the installation manual included in the kit, for the perfect product fit !

Follow the YouTube tutorial videos for Smart Energy Control application !

Contact IWM to optimize your Smart Energy Control application !

Thank you for your attention