

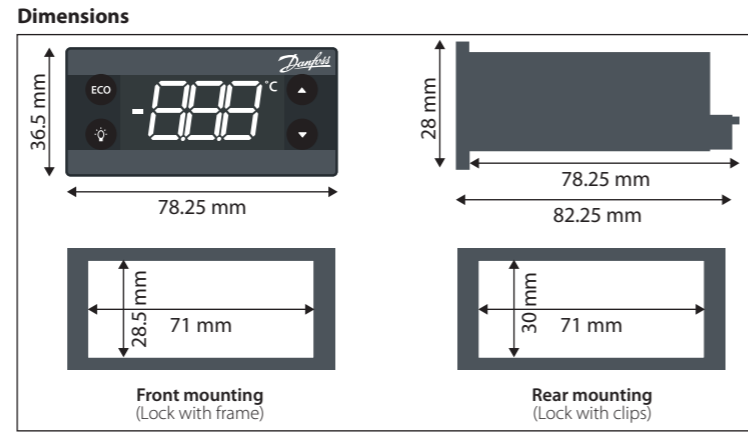
Installation Guide
ERC 112
Bottle Cooler Controller



Technical specification

Power Supply	100 – 240 V AC Switch mode power supply. Average 0.7 W	
Input	5 inputs: 4 analogue (digital), 1 digital; user specific assignment • Air / Evaporator / Condenser • Door sensor: all types, user specific • Light sensor: Danfoss ECO light sensor • Motion sensor	
Output	"DO1" (Compressor relay)	UL60730 120 V AC: 16 A resistive / FLA 16/LRA 72 240 V AC: 10 A resistive / FLA 10 / LRA 60 16(16) A
	"DO4"	8 A resistive, FLA 2 / LRA 12, TV-1 8 A resistive, 2(2) A
	"DO5"	FLA 2 / LRA 12, TV-1 8 A resistive, 2(2) A
	"DO6"	FLA 2 / LRA 12, TV-1 8 A resistive, 2(2) A Max 10 A total "DO4-6"
Probes	• Danfoss NTC sensors and Danfoss ECO accessories • Danfoss PT1000 ohm / 0°C	
Connectors	• Modular connector system for OEM customers, with optional output screw terminal adapter • Input connector type: Rast2 5 Edge connectors • Output connector type: RAST 5 standard	
Programming	Programming with Danfoss KoolProg, KoolKey and KoolDock	
Assembly	3 types for all controls: front mounting; brackets; fully integrated solution (requires OEM specific design of mounting hole)	

Display	LED display, 3 digit, decimal point and multi functionality icons; °C / °F scale	
Keypad	4 buttons (integrated IP65 design), 2 left, 2 right; user programmable	
Operating Conditions	0 °C – 55 °C, 93% rH	
Storage Conditions	-40 °C – 85 °C, 93% rH	
Range of Measurement	-40 °C – 85 °C	
Protection	Front: IP65 Rear: water and dust protection corresponds to IP31, accessibility of connectors limit rear part rating to IP00	
Environmental	Pollution degree II, non-condensing	
Resistance to heat & fire	Category D (UL94-V0)	
EMC category	Category I	
Operating Cycles	Compressor relay: more than 175.000 at full load (16 A (16 A))	
Approvals	<ul style="list-style-type: none"> • R290 / R600a end-use applications employing in accordance to EN / IEC 60335-2-24, annex CC and EN / IEC 60335-2-89, annex BB • Glow wire according to EN / IEC 60335-1 / IEC / EN 60730 • UL60730 • NSF • CQC • EAC • Ukraine 	• These approvals are only valid when using the accessories approved



Functional description of used sensors

Control temperature sensor
The control sensor must always be connected and is used for controlling the cut-in and cut-out of the compressor according to the set-point. The sensor is also used for the displayed temperature. Most common placement is in the return air to the evaporator.

Evaporator sensor
The evaporator sensor is only used for de-icing of the evaporator and has no control purpose. Place the sensor where the ice melts last. Please be aware of that sharp fins can damage the cable.

Condenser temperature sensor
The condenser sensor is used to protect the compressor against high pressure when the condenser is blocked or the condenser fan fails. Place the sensor at the liquid side of the condenser. Use a metal bracket or metal tape to ensure good thermal conductivity. Be sure that the cable does not pass hot spots at the compressor or condenser that exceeds 80 °C.



ERC front and button functionality

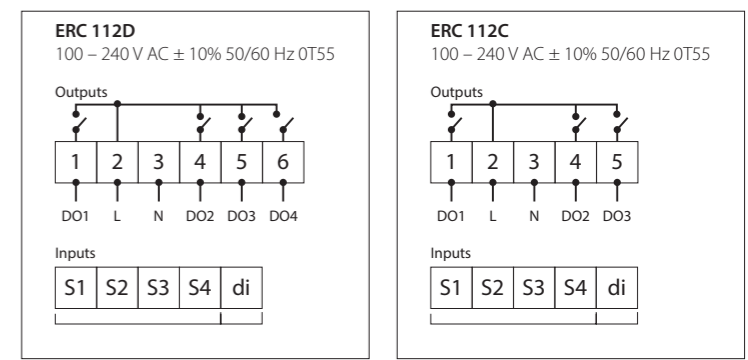
Configurable functionality

Button	Basic function	Not operating	ON/OFF	Increase setpoint	Decrease setpoint	Toggle defrost	Toggle light
1 press	OK						
1 press and hold							
2 press	BACK						
2 press and hold							
3 press	UP						
3 press and hold							
4 press	DOWN						
4 press and hold							

Configurable functionality

Button	Toggle ECO	Toggle pull-down	Increase display intensity	Decrease display intensity	Toggle °C or °F	Enter holiday	Toggle winter/summer	Info menu
1 press								
1 press and hold								
2 press								
2 press and hold								
3 press								
3 press and hold								
4 press								
4 press and hold								

Wiring diagram



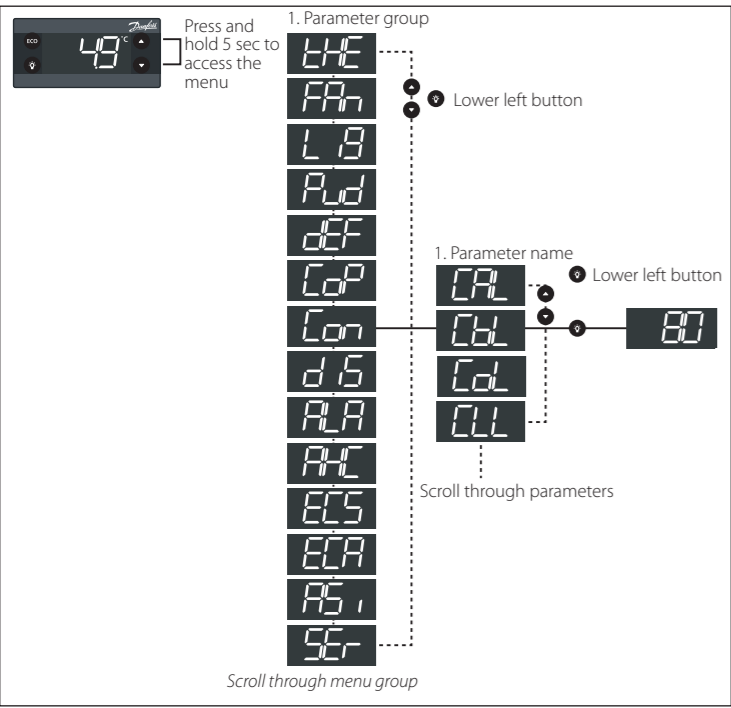
Configuration of outputs

Relay outputs	Compress.	Defrost	Fan	Light	Alarm	Heating application
DO1 (o1C)						
DO2 (o2C)						
DO3 (o3C)						
DO4 (o4C)						

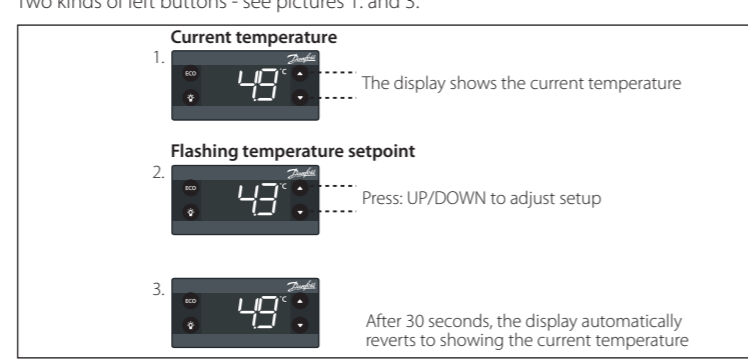
Configuration of inputs

Input/sensor	Cabinet sensor	Evapor. sensor	Condens. sensor	Door sensor	Light sensor	Movem. sensor	Comm.
S1							
S2							
S3							
S4							
di							

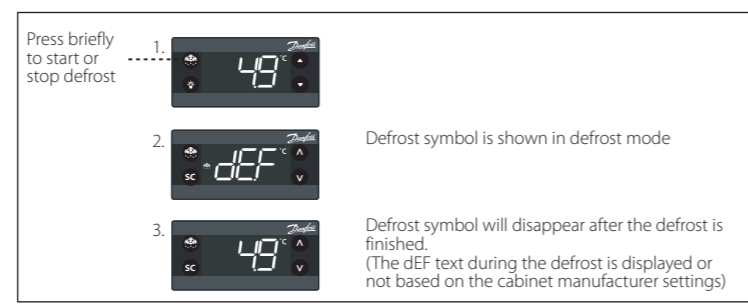
Menu structure



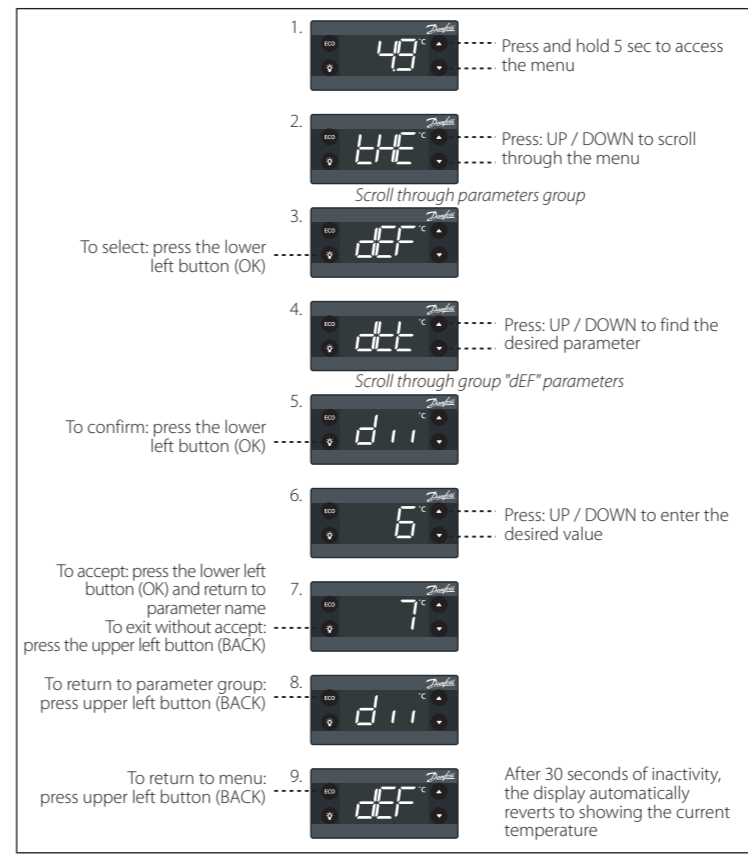
Operation Changing the setpoint:



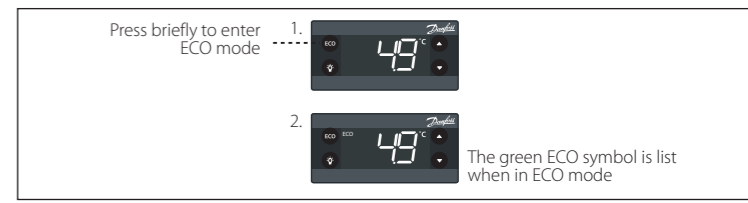
Activating manual defrost



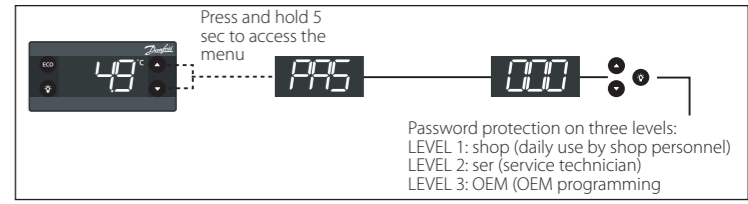
Example of changing a parameter



Turning ON/OFF the ECO function



Password protection



Acknowledging alarm

