

Installation Guide

Electronic refrigeration control Type **ERC 213G**



080R9335

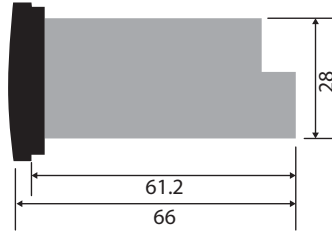


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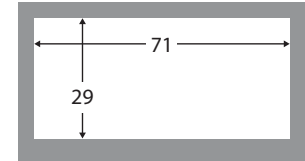


The **ERC 213G** is a smart controller designed for **air-dryer application** to remove the moisture that is inherent in the compressed air.

Dimensions (mm)



Rear mount (clip fixing)

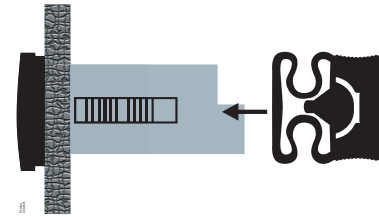


Drilling template

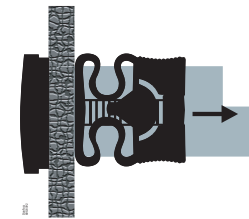
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Assembly

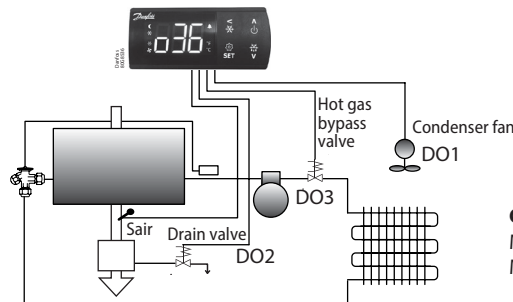
Mounting



Dismounting

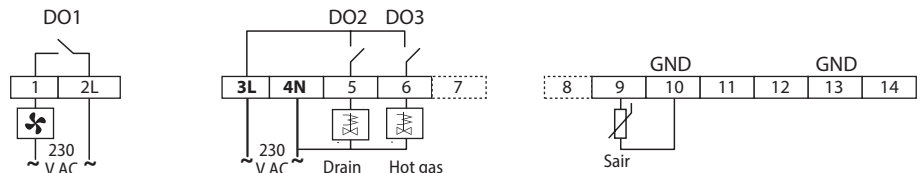


Wiring diagram



Connectors:

Max. torque for power connectors = 0.4 Nm
Max. torque for signal connectors = 0.2 Nm



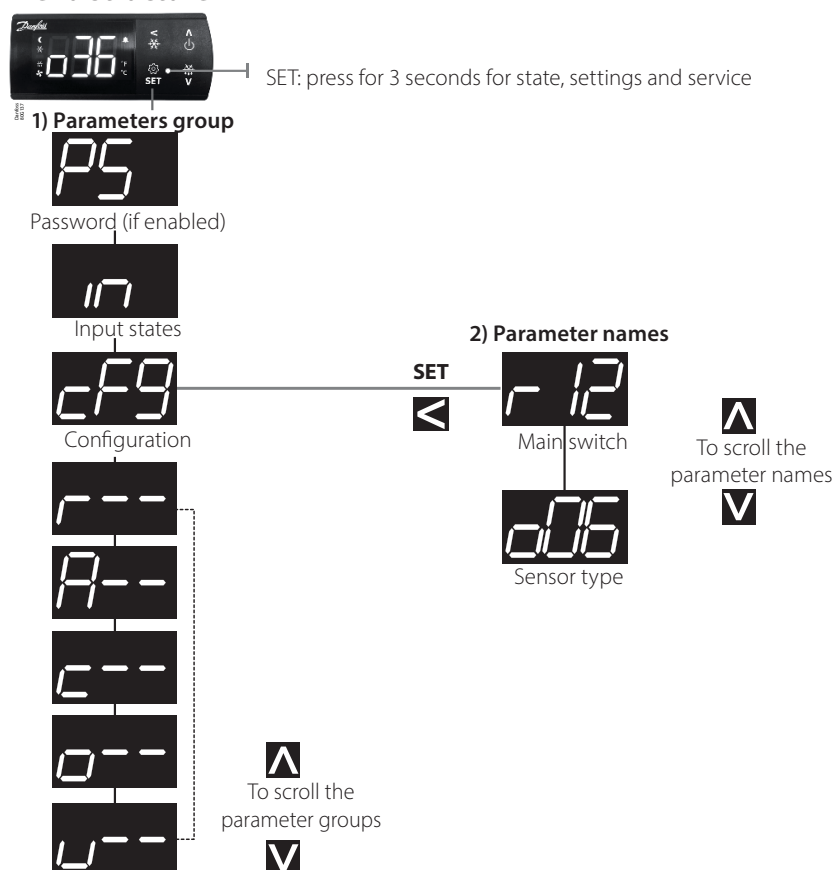
Note: 2L and 3L must be connected to the same phase.

User interface

Button function

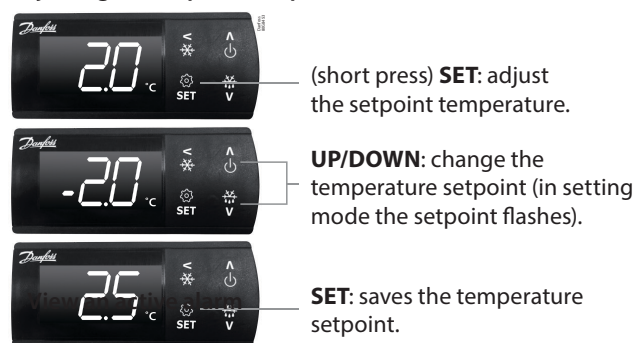
	Press and hold down on startup RESET FACTORY SETTINGS ("FAC" is displayed)	
	Press for one second: BACK	Press for one second: UP Press and hold down: ON/OFF
	Press for one second: TEMPERATURE SETPOINT/OK Press and hold down: MENU	Press for one second: DOWN

Menu structure

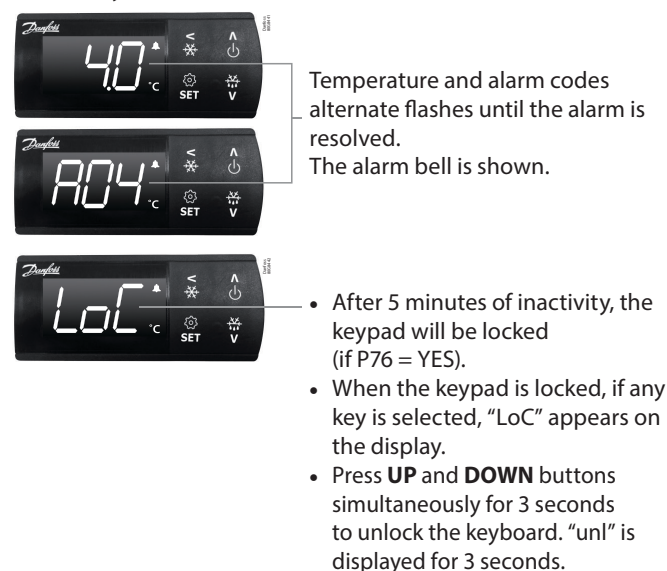


Basic functions

Adjusting the setpoint temperature



Unlock keyboard



Safety standards

Check the input voltage is correct before connecting the instrument.

Do not expose to water or damp: only use the regulator within the design operating limits, avoiding sudden temperature changes with high atmospheric humidity to prevent condensate forming.

Product disposal

The device (or product) must be disposed of in compliance with local waste disposal legislation.

EU design registration

002566703-0001

Technical Data

Features	Description
Power supply	230 V AC 50/60 Hz, galvanic isolated low voltage regulated power supply
Rated power	Less than 0.7 W
Inputs	Sensor inputs, Digital inputs, Programming key Connected to SELV limited energy <15 W
Types of sensors allowed	NTC 5000 Ohms at 25 °C (beta = 3,980 at 25/100 °C - EKS 211 for example) NTC 10000 Ohms at 25 °C (beta = 3,435 at 25/85 °C - EKS 221 for example) PTC 990 Ohms at 25 °C (EKS 111 for example) Pt1000 (AKS 11, AKS 12, AKS 21 for example)
Accuracy	Measuring range: -40 – 105 °C (-40 – 221 °F) Controller accuracy: +/-1 K below -35 °C +/-0.5 K between -35 – 25 °C, +/-1 K above 25 °C
Output	Relay DO1: 16 A, 16 (16) A, EN 60730-1 10 FLA / 60 LRA at 230 V, UL60730-1 Relay DO2: 8 A, 2 FLA / 12 LRA, UL60730-1 8 A, 2 (2 A), EN60730-1 Relay DO3: 3 A, 2 FLA / 12 LRA, UL60730-1 3 A, 2 (2 A), EN60730-1
Display	LED 3-figure display, decimal point and multifunction icons, °C + °F scale
Operating Conditions	-10 – 55 °C (14 – 131 °F), 90% Rh
Storage conditions	-40 – 70 °C (-40 – 158 °F), 90% Rh
Ingress Protection	Front: IP65 (with seal), Rear: IP00
Environmental data	Pollution degree 2, non-condensing
Resistance to heat and fire	UL94-V0
EMC category	Emission: IEC/EN 61000 6-3, Immunity: IEC/EN 61000 6-2
Purpose of control	Operating control for air dryer system
Construction of control	Electronic control for Incorporation for use in Class I and Class II appliances
Automatic action	Micro - disconnection on operation Type 1.B
Overvoltage category	II - 230 V supply version - (ENEC, UL recognized)
Temp. for ball pressure test	According to EN 60730-1, Annex G (EN 60730-1)
For SELV circuits	Input probes or Digital Input connected to SELV limited energy < 15W

Certificates, declarations, and approvals

Regulatory and Compliance	Directive / Document topic	Standards	Country - Marking
Electrical Safety (Incorporated Control for use in Class I or Class II equipment)	Low Voltage Directive: 2014/35/EU	EN IEC 60730-2-9:2019, EN IEC 60730-2-9:2019/A1:2019, EN IEC 60730-2-9:2019/A2:2020, EN 60730-1:2016, EN 60730-1:2016/A1:2019, EN 60730-1:2016/A2:2022	Europe - CE
Electrical Safety (control is validated to use as Incorporated)	Recognized Component	UL 60730-1 - 2009 - Revision 2014, UL 60730-2-9 : 2010, Revision : 2013	United States - cURus
Electrical Safety (control is validated to use as Incorporated)	Recognized Component	CSA E60730-1 :2013, CSA E60730-2-9 : 2001, Revision : 2008, AMD 1	Canada - cURus
Electrical Safety (Incorporated Control for use in Class I or Class II equipment)	-	GB 14536.1:2008, GB 14536.10:2008	China - CQC
Electrical Safety & Electromagnetic Compatibility	Supplier Declaration of Conformity (SDoC)	EN 60730-1:2016, EN 60730 2-9:2019, EN 610006-2:2005 & EN 61000-6-3:2007+A1:2011	Ukraine - UA
Electrical Safety	Certification of Conformity (CoC)	CU TR 004/2011	Eurasia - EAC
Electromagnetic Compatibility	EMC Directive: 2014/30/EU	EN 610006-2:2005 & EN 61000-6-3:2007+A1:2011	Europe - CE
RoHS	RoHS Directive: 2011/65/EU & 2015/863/EU	EN IEC 63000:2018	Europe - CE
Food Safety	Food Equipment	NSF/ANSI standard 2	United States
Approved for use in Flammable Refrigerants	Enclosed Break Device / sealed device nC (Relays)	Sealed Device "nC" IEC 600079-15:2017, Enclosed-Break device "dC" IEC 60079-1:2014, clause 15.5.3	Europe
Approved for use in Flammable Refrigerants	Enclosed Break Device (Relays)	Sealed device "nC" UL 60079-15 and CAN/CSA C22.2 No. 60079-15, Enclosed-Break device "dC" IEC 60079-1:2014, clause 15.5.3	US and Canada
Enclosure Material Flammable Class	-	UL 94, V-0	US
HACCP, Temperature Measuring probe in compliance with EN13485 Class I, when used with AKS 12 sensor	-	EN 13485:2001	Europe
Certification and Manufacturer Declarations on Conformity	CE, cURus, CQC, UA, EAC, NSF, RoHS		

Parameters

Parameter Name - ERC 213G	Code	Min	Max	Unit	Value
Configuration	cFg				
Main switch. -1=service, 0=OFF, 1=ON	r12	-1	1		1
Sensor type selection n5=NTC 5 K, n10=NTC 10 K, Ptc=PTC, Pt1=Pt1000	o06	n5	Pt1		n10
Reference	r--				
Temperature setpoint	r00	-100.0	200.0	°C/°F	2.0°C
Differential	r01	0.1	20.0	K	2.0
Min set point limitation	r02	-100.0	200.0	°C/°F	-35.0
Max set point limitation	r03	-100.0	200.0	°C/°F	50.0
Display offset (correction value in display temperature)	r04	-10.0	10.0	K	0.0
Display Unit (°C/°F)	r05	-C	-F		-C
Calibration of Sair (offset for air temperature calibration)	r09	-20.0	20.0	K	0.0
Alarm	A--				
Delay for temperature alarm (during normal conditions)	A03	0	240	min	30
High temperature alarm limit	A13	-100.0	200.0	°C/°F	8.0
Low temperature alarm limit	A14	-100.0	200.0	°C/°F	-30-0
Voltage protection enable	A72	no	yES		no
Minimum cut-in voltage	A73	0	270	V	0
Minimum cut-out voltage	A74	0	270	V	0
Maximum voltage	A75	0	270	V	270
Drain valve (DO2)	d--				
Drain valve activation interval	o94	0	30	min	2.0
Drain valve opening time	o95	0	30	sec	2.0
Seconds setting added to the minutes in o94	P54	0	59	sec	0.0
Cooling relay (DO3)	c--				
Minimum ON time	C01	0	30	min	0
Minimum OFF time	C02	0	30	min	2
Zero crossing selection	C70	no	yES		YES
Others	o--				
Delay of outputs at startup	o01	0	600	sec	5
Serial address	o03	0	247	no.	0
Password	o05	no	999	no.	
Display resolution 0.1=steps of 0.1°C, 0.5=steps of 0.5°C, 1.0=steps of 1.0 C	o15	0.1	1.0		0.1
Readouts	u--				
Controller Status S0=cooling ON, S2=wait for compressor ON time to elapse, S3=wait for compressor OFF time to elapse-restart time, S10=cooling stop, S11=cooling stopped by thermostat, S25=manual control of outputs, S32=delay of outputs at power up	u00	-	-	-	-
Sair	u01				
Present regulation reference	u02				
Relay 1 status / Manual override	u58	oFF	on		
Relay 3 status / Manual override	u59	oFF	on		
Relay 2 status / Manual override	u60	oFF	on		
Alarm status					
Sair air temperature sensor error	E29				
High temperature alarm	A01				
Low temperature alarm	A02				
High voltage alarm	A99				
Low voltage alarm	AA1				
Standby alarm	A45				

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