INSTRUCTIONS

Electronic Refrigeration

EKC 201, EKC 301

084R9697

EKC 201 $t_{amb.}$ = 0 - +55°C 12 V a.c./d.c./230 V a.c. 2.5 VA

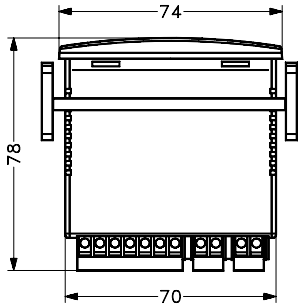


Fig. 1

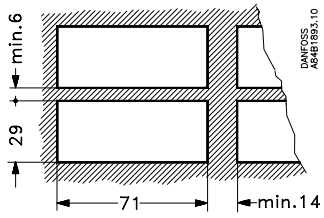


Fig. 2

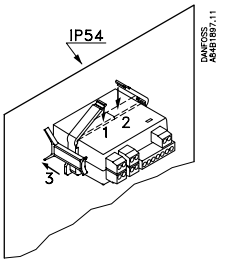
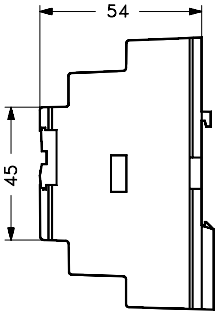


Fig. 3

EKC 301 $t_{amb.}$ = 0 - +55°C 230 V a.c. IP 20 5 VA



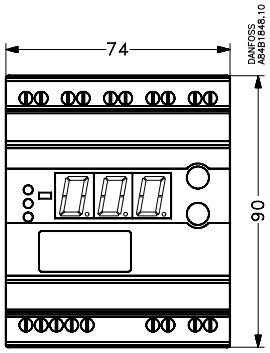


Fig.4

EKC 201, 12 V

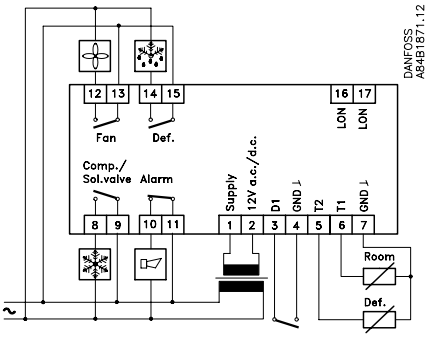


Fig. 5

EKC 201, 230 V

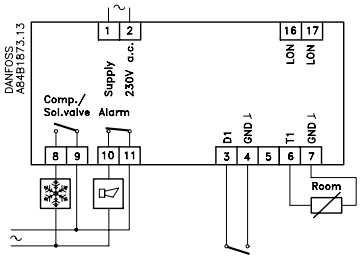


Fig. 6

EKC 301

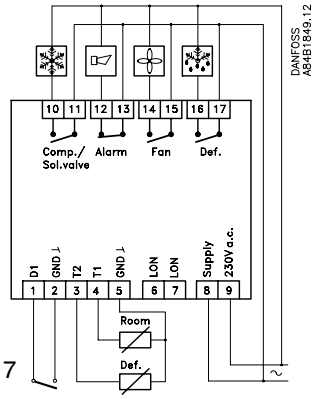
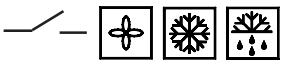


Fig. 7



10 V < U < 256 V
I_{max} (AC-1) = 6 A
I_{max} (AC-15) = 3 A

10 V < U < 256 V
I_{max} (AC-1) = 4 A
I_{max} (AC-15) = 1 A

T1 / (T2)

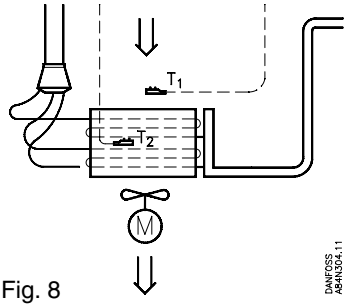
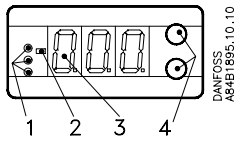


Fig. 8

Fig. 9



DANSK

Elektroniske regulatorer
EKC 201: Til indbygning i tavle.
EKC 301: Til montering på DIN-skinne.

Montering Se fig. 1-4 og fig. 8.

El-tilslutning
Se fig. 5-7 samt el-diagram på apparatet.
12 V regulatorerne skal tilsluttes separat transformer på min. 3 VA.

Betjening
(Se fig. 9).
1. Lysdiode
   = køling
   = afrimning
   = ventilator i gang
   Blinker langsomt ved indstilling
   Blinker hurtigt ved alarm
2. Minustegn.
3. Display.
   (Blinker når indstillingsværdien for rumtemperaturen vises).
4. Taster til programmering og indstilling
   (se programmeringsvejledning).

Programmering og indstilling
Se programmeringsvejledningen og indstillinger.
Tryk på øverste tast i 2 s.
Tryk på nederste tast i 2 s.
Tryk på begge taster samtidigt.

ENGLISH

Electronic controllers
EKC 201: For panel mounting
EKC 301: For DIN-rail mounting

Installation See figs. 1-4 and fig. 8.

Electrical connection
See figs 5-7 and electrical diagram on unit.
The 12 V controllers must be connected separately: transformer of min. 3 VA.

Operation
(See fig. 9).
1. Light emitting diode
   = refrigeration
   = defrost
   = fan running
   Flashes slowly at setting
   Flashes fast at alarm
2. Minus sign
3. Display
   (Flashes when setting value for room temp. is displayed).
4. Keys for programming and setting
   (see programming instructions).

Programming and setting
see programming instructions and settings.
Press upper key for 2 s.
Press lower key for 2 s.
Press both keys at the same time.

DEUTSCH

Elektronische Regler
EKC 201: Für den Schalttafeleinbau.
EKC 301: Für die Montage auf DIN-Schiene.

Montage Siehe Abb. 1 - 4 und Abb. 8.

Elektrischer Anschluß
Siehe Abb. 5-7 sowie Schaltplan am Regler.
12 V-Regler müssen an separaten Trafo von min. 3 VA angeschlossen werden.

Bedienung
(Siehe Abb. 9).
1. Leuchtdiode
   = Kühlung
   = Abtauung
   = Lüfter läuft
   Blinkt langsam bei Einstellung
   Blinkt schnell bei Alarm
2. Minuszeichen
3. Display
   (Blinkt, wenn der Einstellwert der Raumtemperatur angezeigt wird).
4. Tasten zur Programmierung und Einstellung. (Siehe Programmierungsanleitung).

Programmierung und Einstellung
Siehe Programmierungsanleitung und Einstellungen.
Obere Taste für 2 s betätigen.
Untere Taste für 2 s betätigen.
Beide Tasten gleichzeitig betätigen.

FRANCAIS

Régulateurs électroniques
EKC 201 : pour montage sur tableau
EKC 301 : pour montage sur rail DIN

Montage
Voir fig. de 1 à 4 et fig. 8.

Connexion électrique
Voir fig. 5-7 ainsi que le diagramme électrique sur l'appareil.
Les régulateurs de 12 V doivent se brancher sur un transformateur séparé d'au moins 3 VA.

Utilisation
(Voir fig. 9).
1. Diode lumineuse
   = refroidissement
   = dégivrage
   = ventilateur en fonction
   Clignotement lent pendant le réglage
   Clignotement rapide en cas d'alarme
2. Signe moins (-).
3. Affichage.
   (Clignote quand la température de réglage est atteinte).
4. Touches pour programmation et réglage (voir instructions de programmation).

Programmation et réglage
Consulter les instructions de programmation et les réglages.
Presser sur la touche supérieure pendant 2 sec.
Presser sur la touche inférieure pendant 2 sec.
Presser sur les deux touches en même temps.

ESPAÑOL

Controlador electrónico
EKC 201: Para montaje en panel
EKC 301: Para montaje en rail DIN

Instalación Ver fig. 1-4 y fig. 8.

Conexionado eléctrico
Ver fig. 5-7 y diagrama electrico de la unidad.
Los controladores de 12 V se deben conectar por separado: transformador minimo de 3VA.

Operación
(Ver fig. 9).
1. LED Diodo luminoso
   = refrigeración
   = desescarche
   = marcha de ventiladores
   Parpadea ligeramente al ajustarse
   Parpadea rapidamente en estado de alarma
2. Signo menos
3. Pantalla
   (Parpadea cuando se realiza el ajuste de la temperatura).
4. Botones de programación y ajustes
   (ver instrucciones de programación).

Programación y ajustes
Ver instrucciones de programación y ajustes.
Pulsar el boton superior durante dos segundos
Pulsar el boton inferior durante dos segundos
Pulsar los dos botones a la vez

ITALIANO

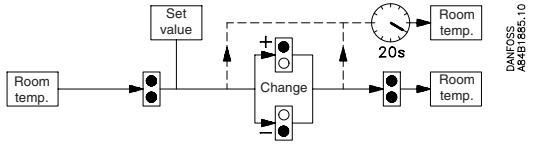
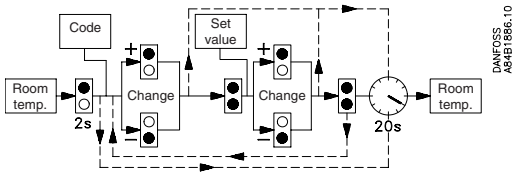
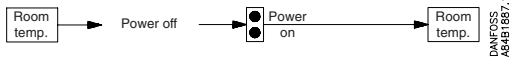
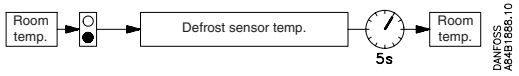
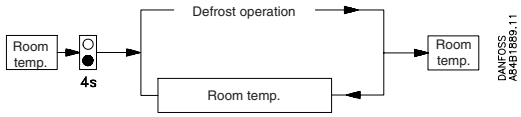
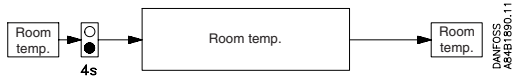
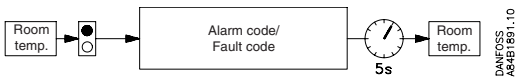
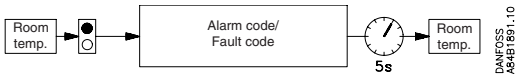
Controllore elettronico
EKC 201: per montaggio su pannello
EKC 301: per montaggio su barra DIN
Installazione Vd. Fig. 1-4 e fig. 8.

Connessioni elettriche
Vedi fig. 5-7 e gli schemi elettrici
I regolatori 12 V devono essere collegati ad un trasformatore singolo da 3VA.

Funzionamento
(vd Fig. 9).
1. Led luminoso
   = refrigerazione
   = sbrinamento
   = ventilatore
   Il led lampeggia lentamente durante l'impostazione parametri
   Il led lampeggia velocemente durante un allarme
2. Segno meno
3. Display
   (lampeggia durante l'impostazione temp. ambiente).
4. Tasti per programmare e tarare (vedi le istruzioni di programmazione)

Programmare e tarare
Vedi le istruzioni di programmazione
Premi il tasto superiore per 2 secondi
Premi il tasto inferiore per 2 secondi
Premi entrambi i tasti allo stesso tempo

Quick Guide

What to do	Initial controller setup	Operating the two pushbuttons Display readout What the controller does automatically	Resulting controller setup
Read or change room temp. setting	Normal operation Room temp. 1		Normal operation Room temp. 2
Read or change parameter codes and settings	Normal operation (or alarm) Unknown codes and settings		Normal operation (or alarm) Known codes and settings
Re-establish all factory settings	Unknown settings		All parameter settings = factory settings
Read defrost sensor temp.	Normal operation or alarm		Normal operation
Manually start of a defrost operation	Normal operation		Normal operation
Manually stop of a defrost operation	Defrost operation		Normal operation
Reset alarm relay	Alarm relay activated		Alarm relay not activated
Read codes cause of alarm mode	Alarm relay not activated		Alarm

[1]) The compressor relay closes when the room temperature exceeds the setting value and differential.

[2]) Alarm is released and sensor failure is indicated, if the room temperature reaches 5°C or more outside the setting range –60° to +50°C.

[3]) The frequency is measured after approx. three days and nights operation after start of the plant (72 cyclings) otherwise:
ON-time = c03 x 20: 100 minutes
OFF-time interval 20 minus ON-time per minute

[4]) Function possibilities with SPST contact, connected to the terminals 3 and 4 are the following:
Door alarm: If SPST is cut out, alarm signalling starts and the fan is stopped, cf. A04 or F03.
Defrost: If SPST is cut in, defrost starts.
(However, if d03 is not OFF, defrost will during contact break down start with the programmed time intervalles).
Bus: With installed communication card, the position of the SPST contacts will be registered in the BUS system.

Controller application setting parameters

Setting and read-off parameters	Parameter codes	Controller application no. 1	2	3	4	Min. value	Max. value	Factory setting	Actual setting
Temperature controller, Temperature						-60°C	50°C	3°C	
Thermostat									
Differential[1])	r01					0.1 K	20 K	2 K	
Max. limitation of set temperature	r02					-59°C	50°C	50°C	
Min. limitation of set temperature	r03					-60°C	49°C	-60°C	
Adjustment of temperature indication	r04					20 K	20 K	0.0 K	
Temperature unit (°C/°F)	r05							°C	
Alarm									
Upper deviation (above temp. setting + differential [2])	A01					0 K	50 K	10 K	
Lower deviation (below temp. setting [2])	A02					50 K	0 K	10 K	
Temperature alarm delay	A03					0 min	90 min	30 min	
Door alarm delay	A04					0 min	90 min	60 min	
Compressor									
Min. ON-time	c01					0 min	15 min	0 min	
Min. OFF-time	c02					0 min	15 min	0 min	
Cut-in frequency on sensor fault [3])	c03					0 %	100 %	0 %	
Compressor stop at open door (yes/no)	c04							no	
Defrost									
Defrost method (EL/GAS)	d01							EL	
Defrost stop temperature	d02					0°C	25°C	6°C	
Interval between defrost starts	d03					OFF	48 hour	8 hour	
Max. defrost duration	d04					0 min	180 min	45 min	
Defrost time delay (after power up)	d05					0 min	60 min	0 min	
Drip-off time	d06					0 min	20 min	0 min	
Fan start delay after defrost	d07					0 min	20 min	1 min	
Fan start temperature	d08					-15°C	0°C	-5°C	
Fan cut-in during defrost (yes/no)	d09							no	
Defrost sensor (yes/no)	d10							yes	
Temperature alarm delay after defrost	d11					0 min	199 min	90 min	
Delay of display view after defrost stop	d12					0 min	15 min	1 min	
Fan									
Fan stop on compressor cut-out (yes/no)	F01							no	
Fan stop delay	F02					0 min	30 min	0 min	
Fan stop at open door (yes/no)	F03							yes	
Miscellaneous									
Delay of output signal after start-up	o01					0 s	600 s	5 s	
Digital input signals [4]) (0 = not used, 1 = door alarm, 2 = defrost, 3 = bus)	o02							0	
Access code	o05					OFF	100	OFF	
Used sensor type (Pt / PTC)	o06							Pt/PTC	
Real time clock (if fitted)									
Six start times for defrost All can be cut out by setting on OFF	t01→ t06					0	23	OFF	
Hour setting	t07					0 hour	23 hour	0 hour	
Minute setting	t08					0 min	59 min	0 min	

Fault code display		Alarm code display		Status code display	
E 1	Fault in controller	A 1	High temperature alarm	S 2	ON-time
E 2	Disconnected room sensor	A 2	Low temperature alarm	S 3	OFF-time
E 3	Short-circuited room sensor	A 4	Door alarm	S 4	Drip-off time
E 4	Disconnected defrost sensor				
E 5	Short-circuited defrost sensor				
E 6	Change battery				