

Danfoss EKC531B Pack & Inverter Fan Condenser Basic Controller Set-up v.10

For Factory Defaults: - Power-up the controller whilst pressing both Buttons

Issue 3	All Default Parameters NOT Requiring Adjustment
27 th May 2006	Must be set according to Pack Requirements
E Spencer	Must be set ONLY AS STATED

EKC 531B Pack Controller				
Info	Function	Parameter	Default	Setting
Suction	Suction Neutral Zone	r01	00.6	LT 0.4 – HT 0.6 bar
	Suction Transducer Calibration	r04	000	-1 to +1 bar
	Start /Stop or Main Switch	r12	On	On = 1
	Setpoint	r23	03.5	LT 0.7/0.9 – HT 2.7/3.0 bar
Discharge	Setpoint	r28	15.0	11.0 bar
	Discharge Transducer Calibration	r32	00.0	-2 to +2 bar
	Fixed reference to r28	r33	001	SET to 1
Capacity	Min ON time for relays	c01	000	0 min.
	Anti-short cycle between starts	c07	000	2/6 min.
	Selection of Cyclic Steps for Relays	c08	001	SET to 2
	Regulation Parameter for + Zone bar	c10	00.4	0.4 / 0.5 bar
	Regulation Parameter for Suction + Zone Min	c11	05.0	LT 1.0 / HT 2.0 min
	Regulation Parameter for + + Zone Min	c12	00.5	LT 0.5 / HT 1.0 min
	Regulation Parameter for - Zone bar	c13	00.3	0.3
	Regulation Parameter for - Zone Min	c14	00.5	0.5
	Regulation Parameter for - - Zone Min	c15	00.3	0.3
	Number of Compressors	c16	000	(See note 1)
	0-10vdc for Inverter Output	c29	OFF	9

Condenser Control				
Capacity	Amplification Factor Xp for Condenser Control.	n04	3.0	2.0 bar
	Integration time Tn for Condenser Control.	n05	120	30
Alarm	Delay time for PC Alarms (as Default)	A03	30	30 min.
	Suction Low Alarm Limit	A11	00.5	LT 0.0 – HT 1.0 bar
	Digital Input 1 Alarm or Compressor 9	A27	OFF	SET to OFF if not used or 120 secs for Comp 9
	Digital Input 2 Alarm or Compressor 10	A28	OFF	SET to OFF if not used or 120 secs for Comp 10
	Digital Input 3 Alarm,	A29	OFF	SET to OFF
	Discharge Pressure Alarm Limit	A30	60.0	SET to 21.0 bar
	Alarm for Pack Housing Temperature	A32	OFF	SET to OFF
Miscellaneous	Controller Address for use by M1	o03	0	Value from 1 to 240
	Suction Transducer Minimum Value	o20	-1	-1 bar
	Suction Transducer Maximum Value	o21	+12	+12 bar
	Digital Input 4 Alarm	o22	0	SET to 2
	Refrigerant R404a	o30	0	SET to 19
	Digital Input 5 Alarm	o37	0	SET to 2
	Discharge Transducer Minimum Value	o47	-1	-1 bar
Discharge Transducer Maximum Value	o48	+34	+34 bar	

Note 1.			
Number of Compressors	Set c16 to	Number of Compressors	Set c16 to
1	1	6	10
2	2	7	11
3	3	8	12
4	4	9	13
5	9	10	14

Test			
o18	0 = No Override	1 to 10 = Compressor Relays 1 to 10	11 to 18 = Condenser Steps DC 1.25v in steps of 1.25v

Additional Settings for Suction Pressure Control if further adjustment is required



Function

Capacity regulation

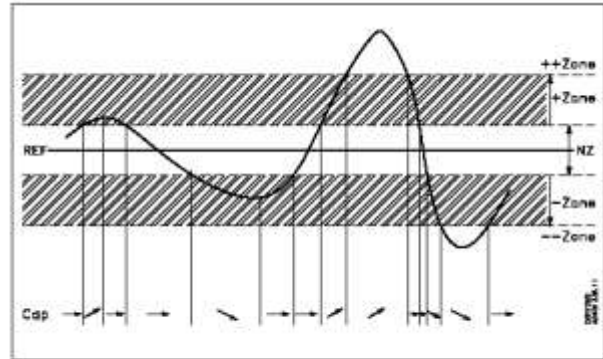
The cut-in capacity is controlled by signals from the connected pressure transmitter and the set reference. Outside the reference a neutral zone is set where the capacity will neither be cut in nor out.

Outside the neutral zone (in the hatched areas named +zone and -zone) the capacity will be cut in or out if the regulation registers a change of pressure "away" from the neutral zone. Cutin and cutout will take place with the set time delays.

If the pressure however "approaches" the neutral zone, the controller will make no changes of the cut-in capacity.

If regulation takes place outside the hatched area (named ++zone and --zone), changes of the cut-in capacity will occur somewhat faster than if it were in the hatched area.

Cutin of steps can be defined for either sequential or cyclic operation.



Info	Function	Parameter	Default	Setting
Capacity	Regulation Parameter for + Zone bar	c10	00.4	0.4 bar
	Regulation Parameter for + Zone Min	c11	05.0	1.0 min
	Regulation Parameter for + + Zone Min	c12	00.5	0.5 min
	Regulation Parameter for - Zone bar	c13	00.3	0.3 bar
	Regulation Parameter for - Zone Min	c14	00.5	0.5 min
	Regulation Parameter for - - Zone Min	c15	00.3	0.3 min

Operating status	
The controller goes through some regulating situations where it is just waiting for the next point of the regulation. To make these "why is nothing happening" situations visible, you can see an operating status on the display. Push briefly (1s) the upper button. If there is a status code, it will be shown on the display. The individual status codes have the following meanings	EKC state (0 = regulation)
S2: When the relay is operated, it must be activated for min. x minutes (cf. c01)	2
S5: Renewed cutin of the same relay must not take place more often than every x minutes (cf. c07)	5
S8: The next relay must not cut in until x minutes have elapsed (cf. c11-c12)	8
S9: The next relay must not cut out until x minutes have elapsed (cf. c14-c15)	9
S10: Regulation stopped with the internal og external start/stop	10
S25: Manual control of outputs via function "c18"	25
Alarm messages	Alarms "Destinations"
A2: Low P0	- - - Low P0 alarm
A11: No refrigerant has been selected (cf. c30)	- - - No RFG Sel
A17: High Pc	- - - Hi Pc alarm
A19 - 26: Compressor fault. Interrupted signal on input "Comp 1" /2/3/4/5/6/7/8	- - - Comp_ fault
A27: High temperature alarm for sensor "Housing"	- - - Housing temp
A28 - 32: External alarm. Interrupted signal on input "DI1" /2/3/4/5	- - - DI_Alarm
A34 - 37: Fan failure. Interrupted signal on input "Cond 1" /2/3/4 (EKC 531A)	- - - Fan_ fault
A45: Regulation stopped with setting or with external switch	A45 Stand by
E1: Error in the controller	Ctrl. fault
E2: Control signal outside the range (short-circuited/interrupted)	Out of range

Timer Settings (Mins)				
		Range	Setting	Time
T2	Low Liquid Level	1 Hour	50%	30 Min