

Data Sheet

Pack controller Type **AK-PC 782B**

One controller for the entire CO₂ booster pack.



The flexible AK-PC 782B pack controller delivers highest efficiency.

AK-PC 782B is a powerful and flexible controller that provides precise regulation, improved efficiency, and enhanced user friendliness for pack control in transcritical CO₂ booster packs.

The controller flexibility and efficiency makes it the obvious choice for all sizes of packs in all climates.

Features

- One controller for the entire CO₂ booster pack
- Robust algorithms warrant safe initial start up and reliable operation
- Easy first-time use with wizard-like set-up
- Scalable to control large booster packs with up to 22 compressors
- Supports variable speed, digital scroll, CRII, Stream and unloader compressors
- Speed control of up to 2 compressors per suction group
- Best fit step control handles mixed compressor sizes
- Control of oil separator and oil receiver
- Liquid injection into suction line option
- Gas cooler capacity control of up to 8 fans
- Gas cooler temperature optimisation with regard to ambient temperature
- Optimal high pressure control
- Improved energy efficiency with Danfoss Multi Ejector™
- Receiver pressure management with four 4 control modes
- Parallel compressor control with model based Smart IT start
- Setpoint management ensuring safe and reliable operation
- Heat recovery management for tap water and space heating
- Support for external Air Conditioning unit KPI and COP calculation to compare and benchmark system efficiency
- General purpose functions with Quick Application Selection for independent control functions
- Local and remote alarm management with readable text descriptions
- Built in LAN with IP communication
- Suction pressure optimisation of for the most heavily loaded refrigeration area
- Injection ON: stop case regulation in case of serious compressor alarms in the rack

Product specification

Technical data

Table 1: Technical data

Features	Description	
Supply voltage	24 V DC / AC \pm 20%	
Power consumption	8 V A	
Analogue inputs	Pt 1000 ohm / 0 °C	Dissolution: 0.1 °C Accuracy: \pm 0.5 °C
	Pressure transmitter type AKS 32R / AKS 2050 / AKS 32 (1 – 5 V)	Dissolution 1 mV Accuracy \pm 10 mV Max. connection of 5 pressure transmitters on one module
	Contact function (ON / OFF)	On at R < 20 ohm Off at R > 2K ohm (Gold plated contacts not necessary)
ON / OFF supply voltage inputs	Low voltage 0 / 80 V AC / DC	OFF : U < 2 V ON: U > 10 V
	High voltage 0 / 260 V AC	OFF : U < 24 V ON: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
	U	Min. 24 V - Max. 230 V Low and high voltage must not be connected to the same output group
Solid state outputs	Can be used for loads that are frequently cut in and out e.g. unloaders, solenoid valve	Max. 240 V AC, Min. 48 V AC - Max. 0.5 A
		Leak < 1 mA
		Max. 1 AKV
Ambient temperature	During transport	-40 – 70 °C
	During operation	-20 – 55 °C 0 – 95% RH (non condensing) - No shock influences / vibrations
Enclosure	Material	PC / ABS
	Enclosure	IP10, VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100- / 200- / controller series	Approx. 200 g / 500 g / 600 g

Ordering

Table 2: Ordering - AK-PC 782B

Type	Language	Code no.
AK-PC 782B	English, German, French, Italian, Spanish, Portuguese, Russian, Chinese ⁽¹⁾ , Dutch, Danish, Finnish, Polish, Czech	080Z0202

⁽¹⁾ Chinese is not available in MMI display. It is available only in PC via ST-500 (Service Tool).

Table 3: Ordering Accessory - Extension modules and survey for inputs and outputs

Type	Analog inputs	ON / OFF outputs		ON / OFF supply voltage (DI signal)		Analog out-puts	Stepper out-puts	Module with switches	Code no.
	For sensors, pressure transmitters	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	0 – 10 V DC	For valves with step control	For override of relay out-puts	
Controller	11	4	4	–	–	–	–	–	–
AK-XM 101A	8	–	–	–	–	–	–	–	080Z0007
AK-XM 102A	–	–	–	8	–	–	–	–	080Z0008
AK-XM 102B	–	–	–	–	8	–	–	–	080Z0013
AK-XM 103A	4	–	–	–	–	4	–	–	080Z0032
AK-XM 204A	–	8	–	–	–	–	–	–	080Z0011
AK-XM 204B	–	8	–	–	–	–	–	x	080Z0018
AK-XM 205A	8	8	–	–	–	–	–	–	080Z0010
AK-XM 205B	8	8	–	–	–	–	–	x	080Z0017
AK-XM 208C	8	–	–	–	–	–	4	–	080Z0023

Table 4: Software

Type	Description	Code no.
AK-ST 500	Software for operation of AK controllers	080Z0161

Table 5: Remote display

Type	Description	Code no.
EKA 163B	Display unit	084B8574
EKA 164B	Display unit with operation buttons	084B8575
MMIGRS2	Graphic display with operation	080G0294

Table 6: Miscellaneous

Type	Description	Code no.
AK-CM 102	Communication modules for controllers where modules cannot be connected continuously	080Z0064

Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 7: Certificates, declarations, and approvals

File name	Document type	Document topic	Approval authority
RU Д-DK.ГA02.B.05523	Electrical - Safety Certificate	EMC/LVE	EAC
080R1221.01	Manufacturer Declaration	China RoHS	China
080R1228.1	Manufacturers Declaration	RoHS	Danfoss
080R1206.03	EU Declaration	EMCD/LVD/RoHS	Danfoss

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