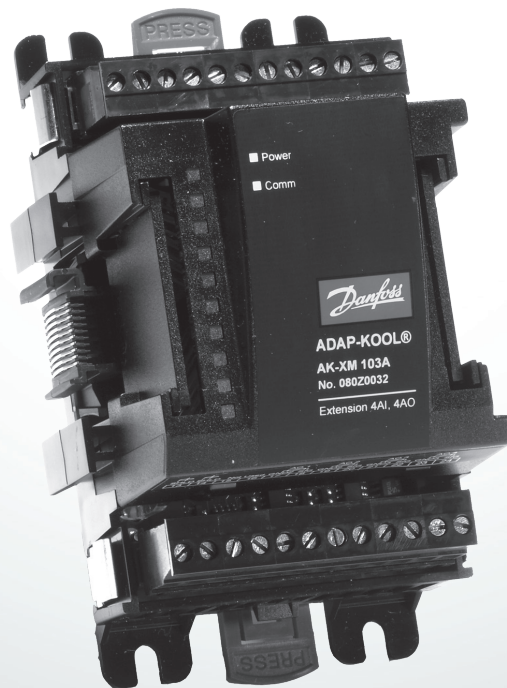


Technical Brochure

# Extension module 4AI + 4AO

## AK-XM 103A

ADAP-KOOL® Refrigeration control systems



## Introduction

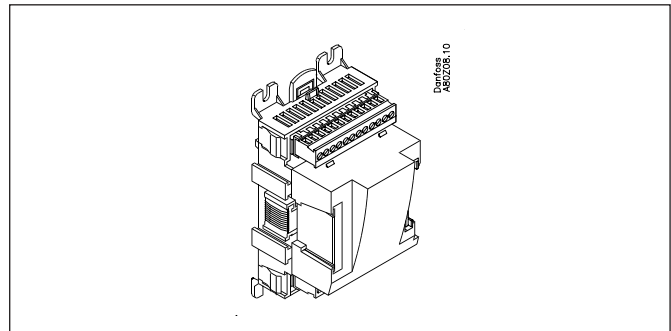
### Application

The extension module should be used with a controller in the same serial connection if there is not enough connections on the controller itself.

### Function

The module contains:

- 4 analog inputs for temperature sensors, pressure transmitters, voltage signals and contact signals.
- Four analogue outputs (0-10 V) for speed control of e.g. frequency converters



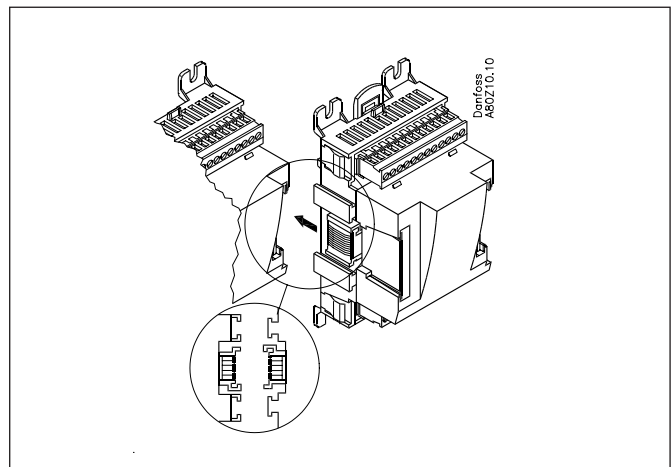
### Installation

- The module is connected to the plug from the previous module in the sequence.

### Supply voltage

The supply voltage to the module comes from the previous module in the row.

Supply voltage to a pressure transmitter can be taken from either the 5 V output or the 12 V output depending on transmitter type.



### Light-emitting diodes

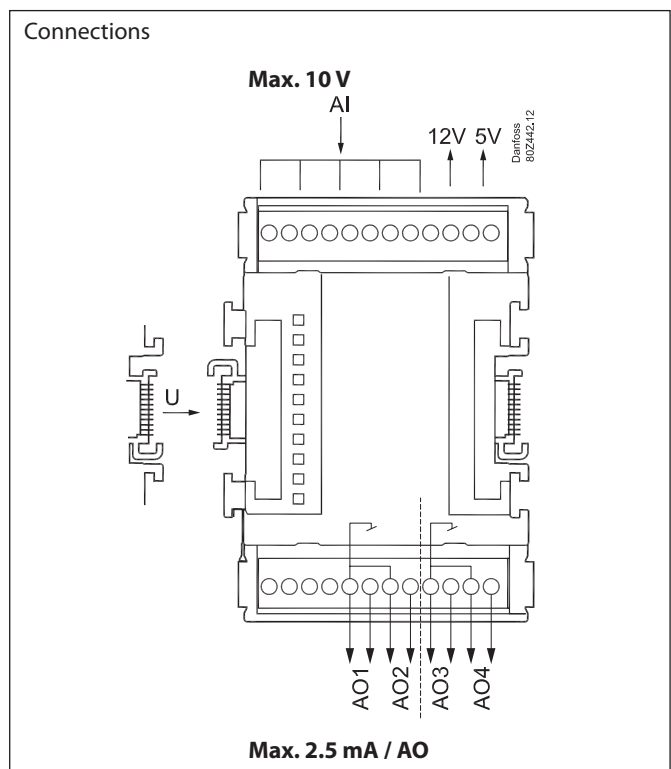
Only the two top LED's are used. They indicate the following:

- Voltage supply to the module
- Communication with the controller is active (red = error)

### Galvanic isolation

There are three groups, and the signals should not be mixed up:

- Inputs and 5V and 12V supplies for the signals connected to the inputs.
- Output 1 and 2
- Output 3 and 4



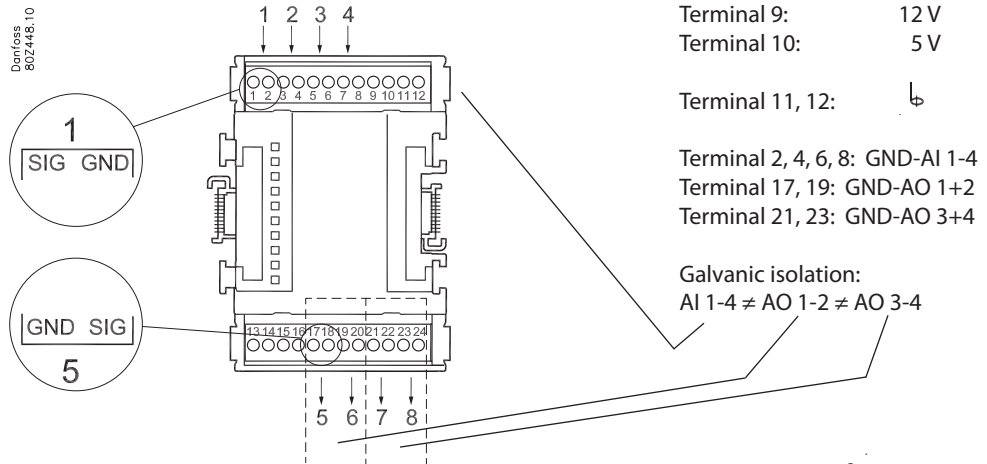
## Data

Supply voltage	Received from the AK controller, which the extension module is connected to	
Power consumption	2 VA	
Analog inputs	Pt 1000 ohm /0°C	Resolution: 0,1°C Accuracy: +/- 0,5°C
	Pressure transmitter type AKS 32R / AKS 32 (1-5 V)	Resolution 1 mV Accuracy +/- 20 mV
	Voltage signal 0-10 V	
	Contact function (On/Off)	On at R < 20 ohm Off at R > 2K ohm (Gold -plated contacts not necessary)
Analog outputs	Voltage signal	0-10 V
	Max. load	I < 2.5 mA R > 4 Kohm
Supply for pressure transmitters	5 V 12 V	Max. 25 mA Max. 100 mA
Galvanic isolation	3 groups	AI 1-4 AO 1-2 AO 3-4
Environment	During transport	-40 to 70°C
	During operation	-20 to 55°C , 0 to 95% RH (non condensing) No shock influences / vibrations
Enclosure	Material	PC / ABS
	Density	IP10 , VBG 4
	Mounting	For mounting on panel wall or DIN rail
Weight with screw terminals	Ca. 200 g	
Approvals	EU low voltage directive and EMC requirements are complied with	LVD tested according to EN 60730 EMC tested Immunity according to EN 61000-6-2 Emission according to EN 61000-6-3
	UL 916, c  US	UL file number: E357029
Dimensions		

## Ordering

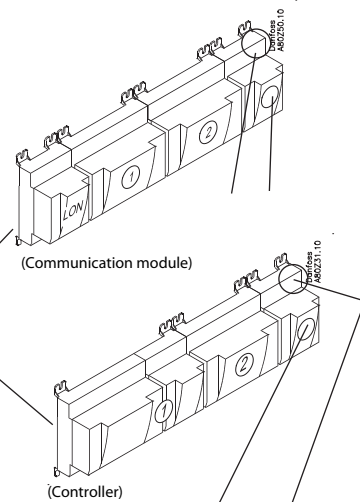
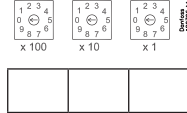
Type	Application	Function	Code no.
AK-XM 103A	Extension module for controller in the AK-series	<b>4 Analog inputs.</b> For sensors, pressure transmitters etc.	<b>4 Analog outputs</b> 0 -10 V d.c.  <b>080Z0032</b>

**Point**



AI	Signal	Signal type
<b>S (sensor)</b> Pt 1000 ohm/0°C 	S1 S2 Saux1 Saux2 SSA SdA	Pt 1000
<b>P (pressure)</b> AKS 32R  AKS 32 	POA POB PcA PcB	AKS 32R AKS 2050 MBS 8250 -1 - xx bar AKS 32 -1 - zz bar
<b>U (voltage)</b> 	...	0 - 5 V 0 - 10 V
<b>On/Off</b> 	Ext. Main switch Day/ Night Door	<b>Active at:</b> Closed / Open
<b>AO</b> 		0-10V

**Address**



Signal	Signal type / Active at	Module	Point	Terminals
			1 (AI 1)	1 - 2
			2 (AI 2)	3 - 4
			3 (AI 3)	5 - 6
			4 (AI 4)	7 - 8
			5 (AO 1)	17 - 18
			6 (AO 2)	19 - 20
			7 (AO 3)	21 - 22
			8 (AO 4)	23 - 24

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