ENGINEERING
TOMORROW

Danfoss

Service Guide

Programming a Box Door Refrigeration and Fan Restart (I/O Control)
AK-SM 850 / AK-SM 880

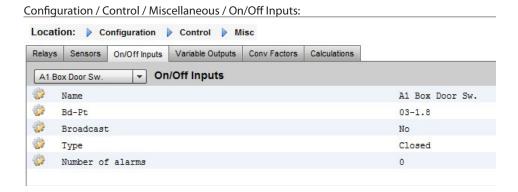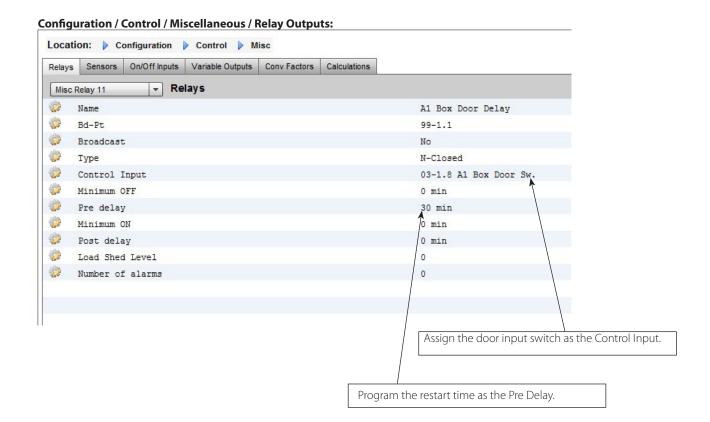ADAP-KOOL® Refrigeration Control System

Programming notes

- Assign the Box Door input to Misc On/Off Inputs
- Program a False Relay in Misc Relay Outputs to act as the door restart timer
- Setup a Calculation to replace the door input, program it as the Circuit Door Switch. An open door that exceeds the restart time will override the door input function.
- I/O comm error (offline) alarms for calculations or Misc ROs associated with dummy points will need to be Disabled in Configuration / Alarms / Offline / AK-CM.
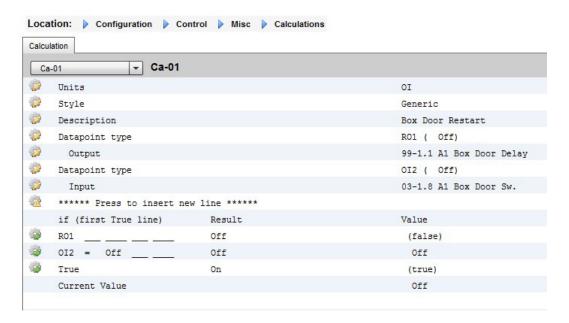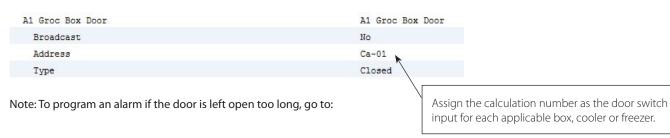
Screen shots:

Configuration / Control / Miscellaneous / On/Off Inputs:

Location: ▶ Configuration ▶ Control ▶ Misc	
Relays	Sensors	On/Off Inputs	Variable Outputs	Conv Factors	Calculations	

A1 Box Door Sw. ▾	**On/Off Inputs**
Name	A1 Box Door Sw.
Bd-Pt	03-1.8
Broadcast	No
Type	Closed
Number of alarms	0

Configuration / Control / Miscellaneous / Relay Outputs:

Location: ▶ Configuration ▶ Control ▶ Misc	
Relays	Sensors	On/Off Inputs	Variable Outputs	Conv Factors	Calculations	

Misc Relay 11 ▾	**Relays**
Name	A1 Box Door Delay
Bd-Pt	99-1.1
Broadcast	No
Type	N-Closed
Control Input	03-1.8 A1 Box Door Sw.
Minimum OFF	0 min
Pre delay	30 min
Minimum ON	0 min
Post delay	0 min
Load Shed Level	0
Number of alarms	0

Assign the door input switch as the Control Input.

Program the restart time as the Pre Delay.

Configuration / Control / Miscellaneous / Calculations:

Location: ► Configuration ► Control ► Misc ► Calculations	
Calculation	
Ca-01 ▼ **Ca-01**	
⚙ Units	OI
⚙ Style	Generic
⚙ Description	Box Door Restart
⚙ Datapoint type	RO1 (Off)
⚙ Output	99-1.1 A1 Box Door Delay
⚙ Datapoint type	OI2 (Off)
⚙ Input	03-1.8 A1 Box Door Sw.
⚠ ****** Press to insert new line ******	
if (first True line)　　　Result	Value
🔧 RO1 ___ ____ ___ ____　　　Off	(false)
🔧 OI2 = Off ___ ____　　　Off	Off
🔧 True　　　On	(true)
Current Value	Off

Configuration / Control / Refrigeration / Addresses / On-Off Inputs:

A1 Groc Box Door	A1 Groc Box Door
Broadcast	No
Address	Ca-01
Type	Closed

Note: To program an alarm if the door is left open too long, go to:

> Assign the calculation number as the door switch input for each applicable box, cooler or freezer.

Configuration / Miscellaneous / Alarms / On-Off Inputs: Select the actual box door switch input, press Enter, add an alarm.