Compatability and Replacement Information

AK-SM Legacy Equipment **Replacement Guide**

Below list defines Danfoss products compatible with AK-SC 255 and prior system managers that are not supported by AK-SM 800 and AK-SM 800A series. Because of the unique details of each replacement, more specific details are added below the table.

Legacy Component	Replacement Component(s)
DCU Case Controller	AK-CC 55 (AKV) or AK-XM Modules (EEPR)
AKC 164 Case Controller	AK-CC 55 (AKV or Solenoid) or AK-XM Modules (EEPR)
AKC 165 Subcooler Control	AK-CC 55
ECI IO Boards	AK-XM Modules
AKC 55 IO Boards	AK-XM Modules
RTC	AK-XM Modules
CBGate2	AK-XM Modules
ECI IO Gateway	AK-XM Modules

1. DCU Case Controller. Because the DCU had flexibility to control either an AKV valve for superheat control or EEPR for evap temp control, multiple replacement options need to be considered.
  a. For AKV superheat control, an AK-CC 55 single-coil case controller can be used. Additional requirements include switch from ECI temp sensors to AKS 11 temp sensors, and addition of a suction pressure transducer.
  b. For EEPR control, switch should be made to AK-XM208B (for SM 800) or AK-XM208C (for SM 800A). ECI temp sensors should be switched to AKS 11 sensors, or resistors added to existing TP1/TP2 sensors (TP1KIT for TP1 sensors, CTP kit for TP2 sensors)

2. AKC 164 Case Controller. Similar to the DCU, the AKC 164 had flexibility for EEV, solenoid, or EEPR control. Existing temp sensors can remain for any option below.
  a. For AKV superheat control, switch to AK-CC 55 single-coil case controller. Suction pressure transducer must be added.
  b. For solenoid control, an AK-CC 55 compact case controller can be used.
  c. For EEPR control, controller and valve must be replaced (KVQ style valve used has no direct replacements). Switch should either be made to mechanical EPR (with AK2 IO solenoid control), or stepper EEPR valve along with AK-XM 208B/C module.

3. AKC 165 Subcooler Control. Switch to AK-CC 55 single-coil case controller. Temp sensors can remain, but suction transducer must be added.

4. ECI IO Modules. Boards should be replaced with AK-XM Modules as noted below, and temp sensors must be considered as well:

ECI Temp Sensor	Replacement Option
TP1 Standard Temp Sensor	Add TP1 resistor kit or replace with AKS 11
TP1H High Temp Sensor	Replace with AKS 21
TP2 Standard Temp Sensor	Add CTP kit or replace with AKS 11
TP2 High Temp Sensor	Replace with AKS 21

ECI IO Board	AK-XM Module Alternative
SAI8	AK-XM 101A
SUI16	AK-XM 101A (x2)
SDI8	AK-XM 101A
SAO4	AK-XM 103A
SR8	AK-XM 204B

5. AKC 55 IO Boards. Boards should be replaced with AK-XM Modules as follows:

AKC 55 Board	AK-XM Module Alternative
SI8	AK-XM 101A
OI8	AK-XM 102B
RO8	AK-XM 204B
VO2	AK-XM 103A

6. RTC Rooftop Unit Control Board. This stand-along board for RTU control should be replaced by AK-XM Modules. Specifically, part #080Z2117 offers proper modules and instructions for conversion.

7. CBGate2 Lighting Interface Board. This cutler hammer interface board has no direct replacement options. Best alternative involving Danfoss components would be to consider AK-XM relay module wired to contactors of lighting panel for on/off control.

8.ECI IO Gateway. This gateway, used to allow ECI IO boards to communicate with an AK-SC 255, is not compatible with SM800(A) series units. Removal of gateway and replacement of ECI IO boards with AK2 modules is required.

Additional Notes:
1. All replacement options would require programming changes in system manager to accommodate
2. For any replacements involving AK-XM modules, a comm module must be used to tie AK-XM modules into system manager. Use AK-CM 101A (LON TP78) or AK-CM 101C (LON RS485)
3. With offering of combination 8AI/8RO AK-XM 205A/B module, can consider combining points from multiple ECI or AKC 55 IO boards for space/cost reduction
4. Communication type can vary with new devices that may require new/separate comm loops

Device	Comm Type
DCU	LON FTT10
AKC 164	LON TP78
AKC 165	LON TP78
AKC 55 IO Boards	LON TP78
RTC	LON TP78
CBGate2	LON FTT10
AK-CC 55	Modbus or LON RS485 (option card)
AK-XM Modules	LON TP78 or LON RS485

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