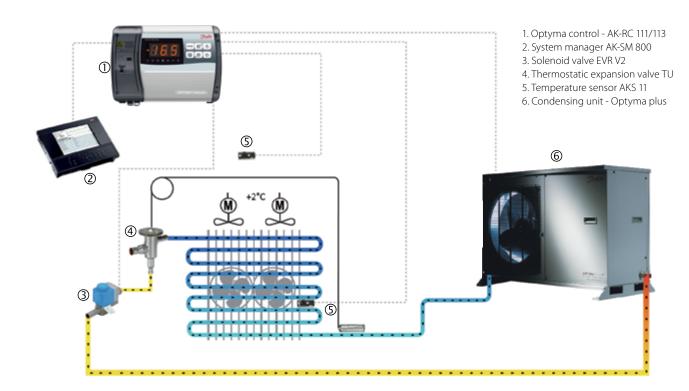
# Optyma™ Control, Single / Three-phase

The Optyma<sup>™</sup> Control is particularly suitable for the Optyma<sup>™</sup> and Optyma<sup>™</sup> **Plus** condensing units from Danfoss but is also compatible with other condensing units on the market.

The control features an attractive new design and simple flexible programming.

It offers both control and protection in a single unit, thanks to the unique built-in differential magnetothermic circuit breaker, which guarantees safety by cutting the general power supply.





### **Facts** . . . . .

#### **Benefits:**

- · Direct control of defrosting elements, evaporator fans, room light with outputs directly connectable to the various units
- Standard and ADAP-KOOL® compatible Modbus data communication

#### Display & programming:

- LED indicators and large display show system status
- User-friendly keypad
- Display resolution to 0.1 °C

#### **Protection:**

- Automatic fuse protect the refrigeration
- Stylish ABS housing with transparent cover for access to the automatic fuse, all with an IP65 protection rating so that panel can be used outside the room

# **Technical data and ordering**

## **Optyma**<sup>™</sup> **Control, Single phase**

## Electronic controller

Power supply						
Voltage		230 V~ ± 10% 50/60 Hz	230 V~ ± 10% 50/60 Hz			
Max power (only electronics)		~ 7 VA	~ 7 VA			
Rated current		16 A	16 A			
Climate conditions						
Working temperature		-5 – 50 ℃	-5 – 50 ℃			
Storage temperature		-10 − 70 °C	-10 − 70 °C			
Relative ambient humidity		Lower than 90% Hr	Lower than 90% Hr			
General characteristics						
Type of sensors that can be connect	ed	NTC 10K 1%	NTC 10K 1%			
Resolution		0.1 ℃	0.1 ℃			
Sensor read precision		± 0.5 °C	± 0.5 °C			
Read range		-45 – 99 °C	-45 – 99 °C			
Output characteristics						
Description	Installed relay	Card output characterstics	Note			
Compressor	(Relay 30A AC1)	10 A 250 V~ (AC3) (2HP) (100000 cicli)				
Defrost	(Relay 30A AC1)	16A 250 V~ (AC1)	The sum of contemporary absorptions of these			
-ans	(Relay 16A AC1)	2.7 A 250 V~ (AC3)	outputs has not to exceed 16 A			
Room light	(Relay 16A AC1)	16 A 250 V~ (AC1)	1071			
Aux 1 (free voltage contact)	(Relay 5A AC1)	5(3) A 250 V~				
Aux 2 (free voltage contact)	(Relay 5A AC1)	5(3) A 250 V~				
		Differential magnetothermic circuit break	Differential magnetothermic circuit breaker 16A			
General electrical protection		Id=300 mA				
		(Id=30 mA on request)				
		Disconnecting power 4.5 kA				
Dimension characteristics						
Dimensions		18.0 cm x 9.6 cm x 26.3 cm (HxPxL)	18.0 cm x 9.6 cm x 26.3 cm (HxPxL)			
Insulation and mechanical chara	cteristics					
Box protection rating		IP65	IP65			
Box material		ABS self-extinguishing	ABS self-extinguishing			
Type of insulation		Class II	Class II			

# Technical data and ordering

## Optyma<sup>™</sup> Control, three phase

#### **Tecnical Characteristics**

Technical characteristics	OPTYMATM Control (4 HP)	OPTYMATM Co	ontrol (7.5 HP)	
Box dimensions	400 x 300 x 135 mm	400 x 300 x 135 mm		
Weight	9 kg	101	ka	
Protection rating	IP 65		55	
Power supply (3F+N+T)	400 V AC ±10% 50/60Hz	400 V AC ±10% 50/60Hz		
Load type	3-phase 3-phase		ase	
Operating temperature	- 5 − 40 °C	- 5 – 4	40 °C	
Storage temperature	-25 − 55 °C	-25 – 55 °C		
Relative ambient humidity	from 30% to 95% RH w/out condensate	from 30% to 95% RH w/out condensate		
Altitude	< 1000 m	< 1000 m		
Main switch / general protection Interruption power	4 poles magnetothermic 16A "D" lcn=6kA / lcs=8kA / lcu=15kA		4 poles magnetothermic 25A "D"   lcn=6kA / lcs=8kA / lcu=15kA	
Compressor protection	Adjustable motor circuit breaker	Adjustable motor circuit breaker Adjustable motor circuit breaker		
Defrosting	Electrical	Electrical		
Status indicators	LED + display	LED + display		
Alarm signals	LED + buzzer	LED + buzzer		
Inputs				
Ambient probe	NTC 10K 1%	NTC 10K 1%		
Evaporator probe	NTC 10K 1%	NTC 10K 1%		
Door switch	Present	Present		
High/low pressure switch	Present	Present		
Kriwan® connection	Present	Present		
Compressor functioning mode selection	Pump-down / thermostat	Pump-down / thermostat		
Outputs				
Compressor	See motor circuit breaker thermal range relative to panel ID code	See motor circuit breaker thermal range relative to panel ID code		
Condenser fans output 1	800 W total	800 W total	(1 phase)	
Condenser fans output 2 (separated)	800 W total	000 W total	(1 phase)	
Evaporator fans	500 W (1 phase)	2000 W (1phase / 3 phases)		
Defrosting heaters	6000 W (AC1) eq. resistive load	9000 W (AC1) eq. resistive load		
Room light	800 W (AC1) resistive load	800 W (AC1) resistive load		
Solenoid valve	Present	Present		
Compressor oil heater	Present	Present		
Aux1	100 W	100 W		
Aux2	100 W	100 W		
Supervision system	Modbus	Modbus		

### **Ordering**

Туре	Description	Psc	Code no.
AK-RC 111	Optyma Control single-phase (2 HP) including two sensors	1	080Z3220
AK-RC 113	Optyma Control, three phase (4HP), including 2 sensors, $4.5-6.3~\mathrm{A}$	1	080Z3221
AK-RC 113	Optyma Control, three phase (4HP), including 2 sensors, 7 – 10 A	1	080Z3222
AK-RC 113	Optyma Control, three phase, (7.5HP), including 2 sensors, 11 – 16 A	1	080Z3226
AK- RC 113	Optyma Control, three phase, (7.5HP), including 2 sensors, 14 – 20 A	1	080Z3227

Sensor EKS 221 (spare part)- 084N3210