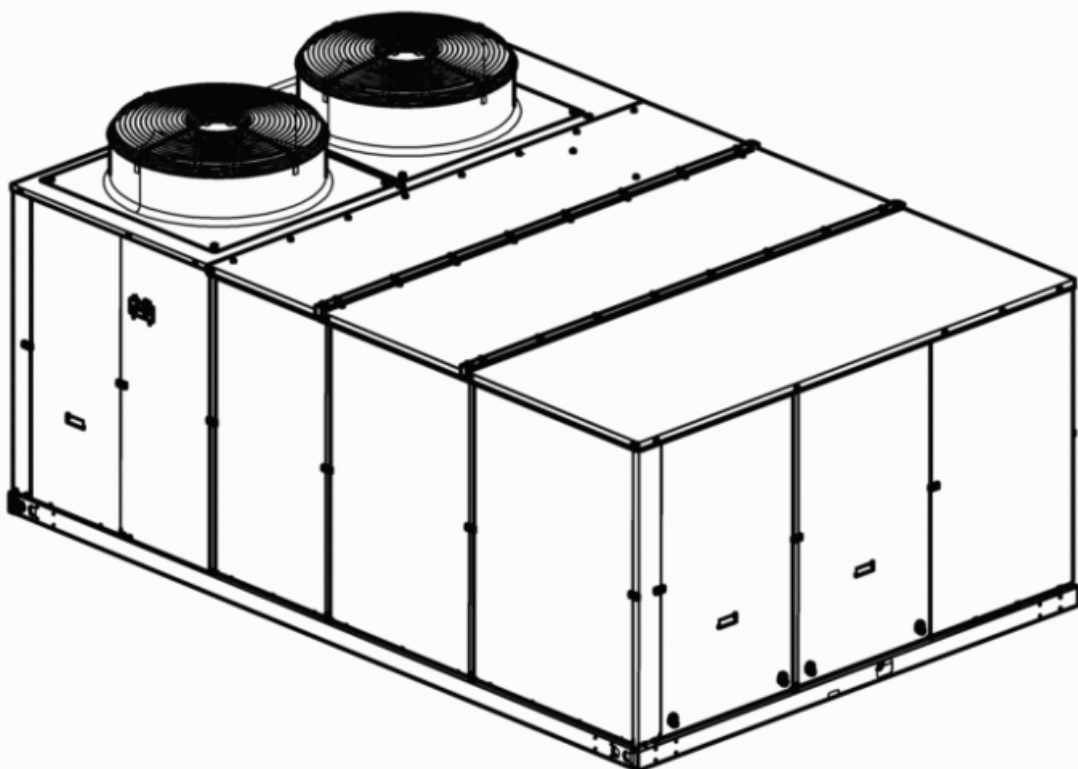




BY JOHNSON CONTROLS

Low ambient kit for ROOF TOP ACTIVA 045-090



Options and Accessories, Installation manual

Ref.: N-40333_EN 0810



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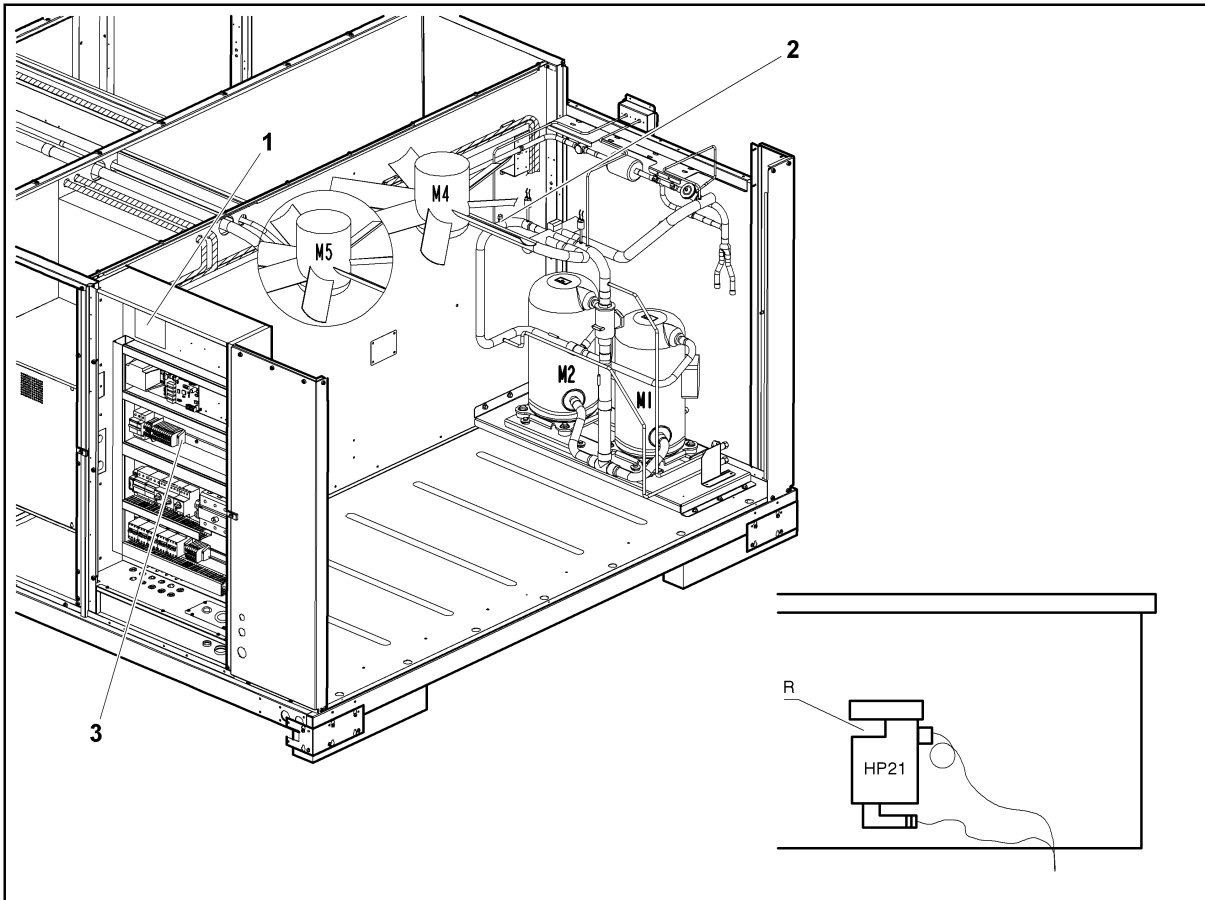
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**Low ambient kit for ROOF TOP ACTIVA
045-090**

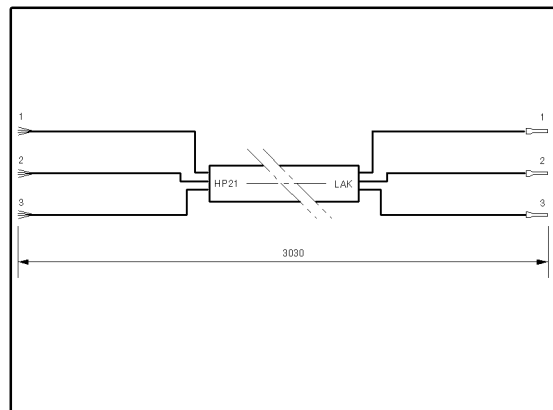
1.1 Components

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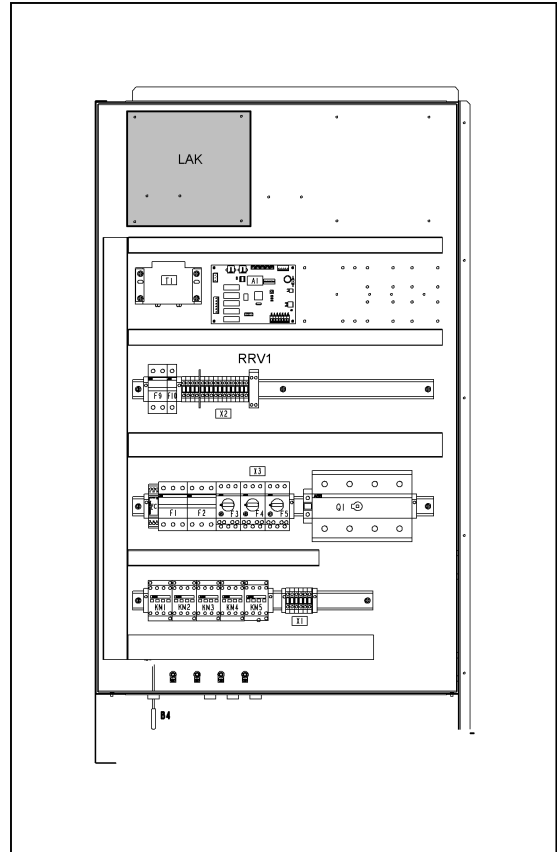


- 1. Three-phase regulator (LAK)
- 2. Circuit 1 pressure switch installation inlet (HP21)
- 3. 24 VAC Relay (RRV1)

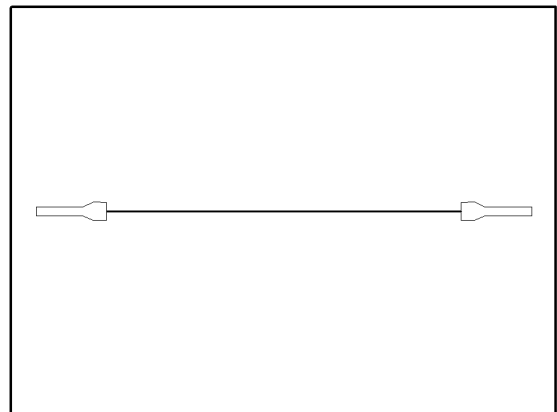
Pressure switch side		LAK side	
1.	HP21-1	1.	A
2.	HP21-2	2.	BO
3.	HP21-3	3.	C



1 Three-phase regulator (LAK).



1.2 Connection wiring



Wire no.	Colour	Cross-section (mm ²)	From	To	Length (mm)
1	White	1	X2-B	RRV1-A2	280
2	Red	1	X2-14	KM4-13	1120
3	Red	1	KM4-14	RRV1-A1	990
4	Brown	1	LAK-E	RRV1-14	970
5	Brown	1	LAK-F	RRV1-11	970

1.3 General Information

The condensation control accessory (Low ambient kit) is factory-fitted as an option.

The electronic module regulates the speed of the outside fan during the cold cycle to keep the condensing pressure constant with low outside temperature. There is no regulation during the winter cycle and the fans run fully.

The regulator is located in the electrical box and the pressure switch is on the side of the compressors.

1.4 Technical specifications

The accessory includes the following components:

- Three-phase speed regulator, ref. P255 (LAK).
- Pressure switch, set to 26 bar (HP21).
- 24 V AC terminal relay (RRV1) and auxiliary contact (KM4). For ARH and ARD only.
- Connection cables and wires.
- DIN guide, bolts, bushing and plastic ties.

1.5 Installation instructions

Disconnect the main power supply to the unit using switch Q1 (see the figures for details on assembly and electrical connections).

Install the condensation control system as described below:

- 1 Remove the access panels from:
 - a the electrical box,
 - b the top plate on the electrical box and
 - c compressors.
- 2 Fit the regulator at the upper left-hand side of the electrical box using the screws supplied. On models with a heat pump (ARH and ARD), fit the 24 V AC (RRV1) relay to the X2 terminal strip and auxiliary contact (KM4).
- 3 Fit and connect the F4 and KM4 power cables according to the attached wiring diagram *Wiring diagram*, see on page 6.
- 4 Fit the pressure switch (HP21) connection cable along the route indicated in Section *Components*, see on page 2. Secure with ties.
- 5 Fit the pressure switches to the upper rail using their support and screws, as indicated in Section *Components*, see on page 2.
- 6 Connect the cables to the side of the electrical box and the pressure switches, as indicated in the attached wiring diagram *Wiring diagram*, see on page 6.
- 7 Connect the pressure switch pressure input to the high pressure inlet and check for leaks. Connect the high pressure manometers on both circuits.
- 8 Refit the compressor access panel.
- 9 Testing operations:
 - a Adjust the potentiometers on the regulator (LAK) according to the attached wiring diagram *Wiring diagram*, see on page 6 and disconnect the thermal-magnetic breaker on compressor 1 and 2 (F1 and F2).
 - b Connect the unit's main power switch Q1.
 - c Enable cold stage 1 and check that contactors KM1, KM3 and KM4 enter. The M4 outside fan must be at a standstill.
 - d Connect thermal-magnetic breaker F1 and check that compressors 1 and 2 start up.
 - e Check that the revolutions of the outside fan begin to rise at an approximate pressure of 26 bar.
- 10 If the unit is fitted with a heat pump (ARH and ARD), enable heat stages 1 and check that the M4 outside fan turns fully. Then disable the stages.
- 11 Disconnect the pressure manometers and fit the access panels.



DANGER

- *Loose connection terminals produce overheating of cables and terminals.*
- *The unit is working incorrectly and there is a risk of fire. Check that the cables are firmly secured to their connection terminals.*

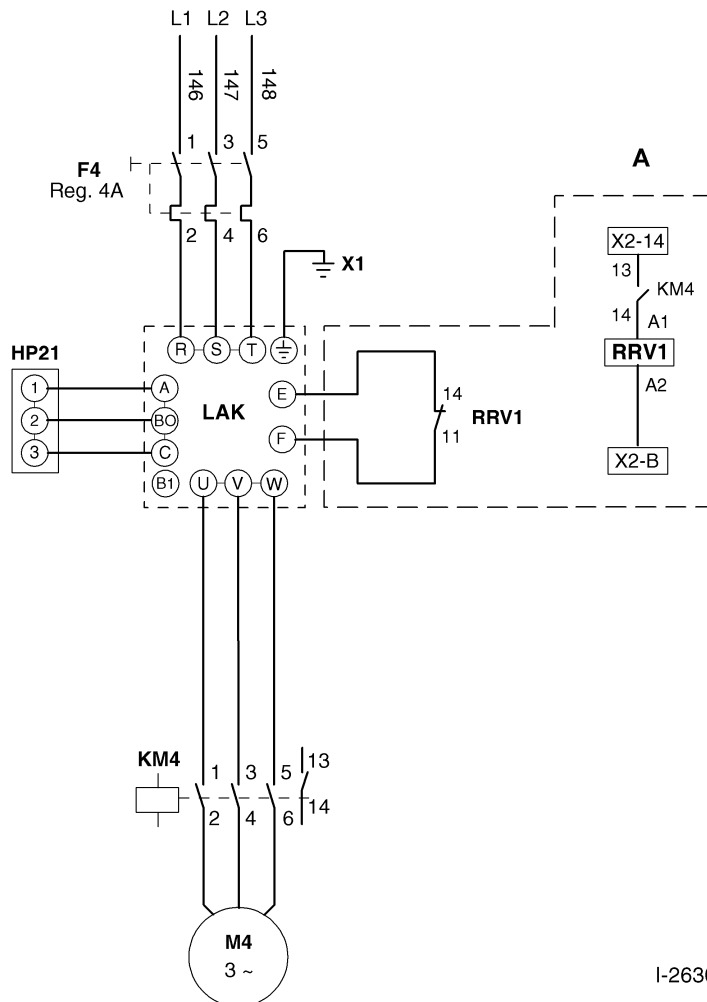
1.6 Operations

During the summer cycle, it regulates the speed of the outside fan to keep the condensing pressure constant with low outside temperature (-18 °C).

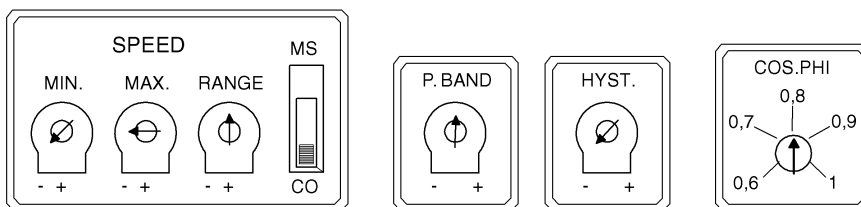
Pressure switch HP21 is factory-set to 26 bar. The setting can be adjusted using the pressure switch adjustment screw: turning it clockwise to increase the pressure and anti-clockwise to decrease it.

For models with heat pumps, inputs E and F are available on the control, which in the heat cycle remains closed through the cycle change relay (RRV1) contact and the auxiliary contact (KM4). Fan speed at a maximum.

1.7 Wiring diagram



I-2630b



A	Fit in ARH and ARD models
F4	Motor trip switch for M4 outside fan
HP21	Pressure switch
KM4	Contactora for M4 outside fan
LAK	Three-phase regulator (Reg. 26 bar)
M4	Outside fan 1
RRV1	Auxiliary cycle change relay

Data and measurements subject to changes without prior notice.