YORK
BY JOHNSON CONTROLS

Indoor air quality enthalpy probe for Roof Top ACTIVA 017 / 175

Options and Accessories, Installation manual

Ref.: N-40436_EN 0913

CE

Johnson Controls

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Indoor air quality probe

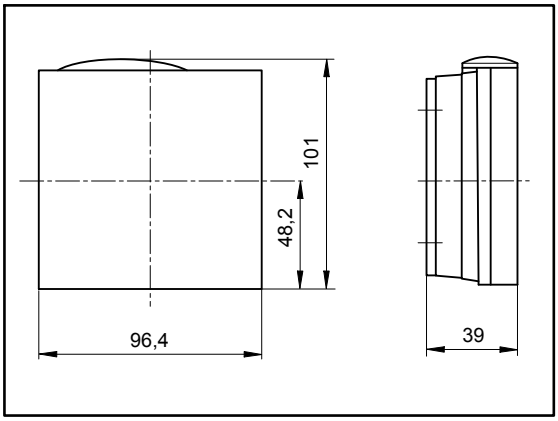
1.1 General information

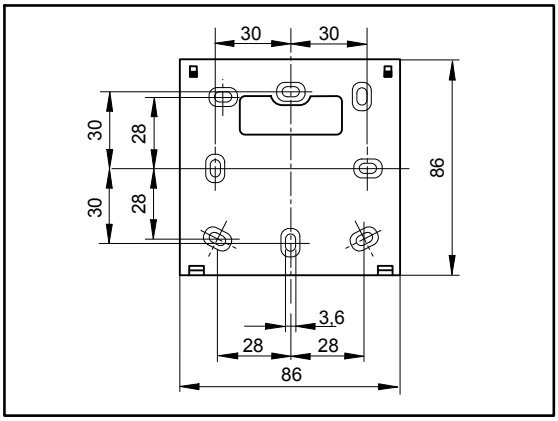
The probe measures the degree of pollution due to different reasons such as the level of room occupancy, tobacco, kitchen smoke, carbon monoxide, etc. When the pre-set limits are exceeded, the control acts on the economiser, adjusting the outdoor air damper.

This option requires the economiser for it to work properly.

1.2 General dimensions

Measurements in mm





1.3 Technical specifications

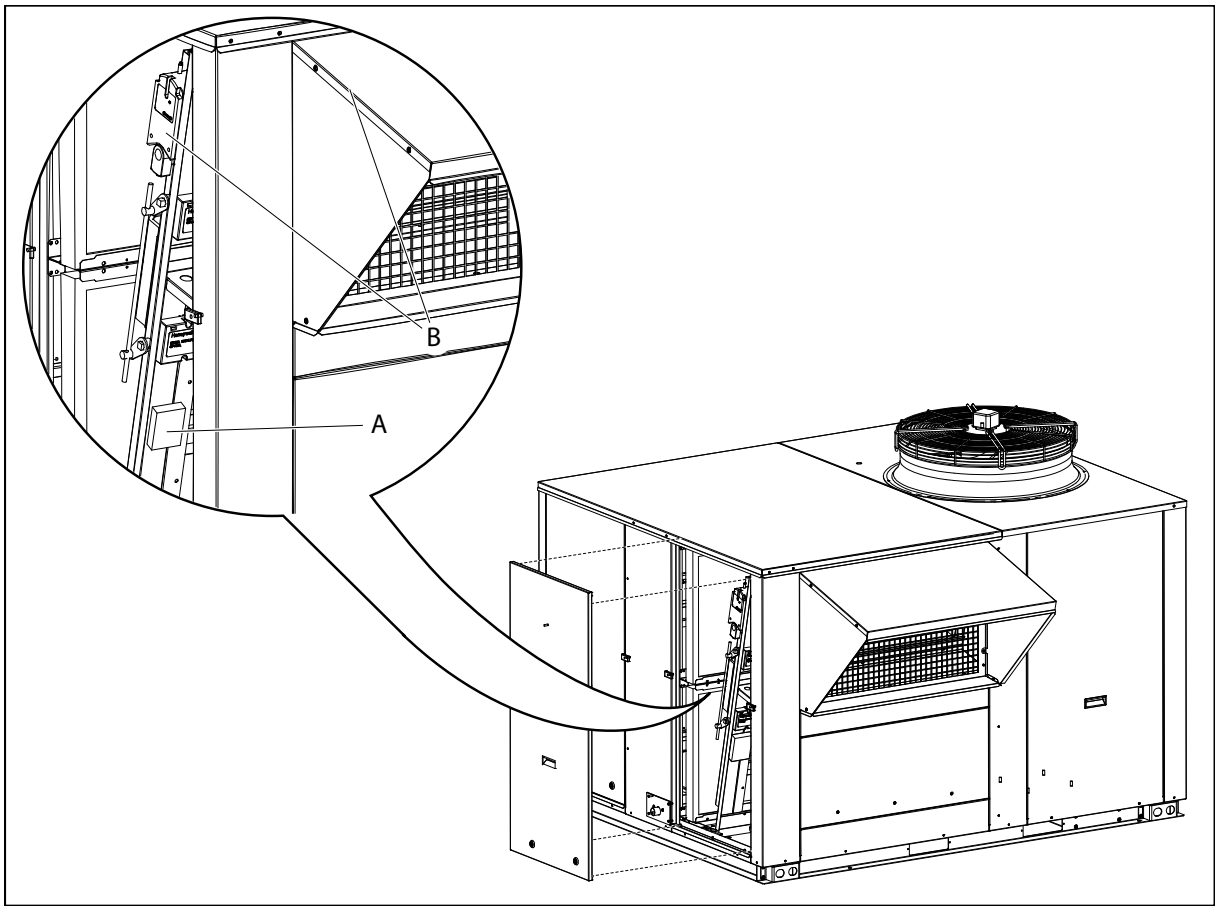
This accessory includes the following components:

- Air quality probe.
- 230 V AC to 5 V DC signal conversion board.
- Connection cable for probe fitting inside machines.

1.4 Assembly

Probe installed on the return side inside the machine

Models 017 / 040



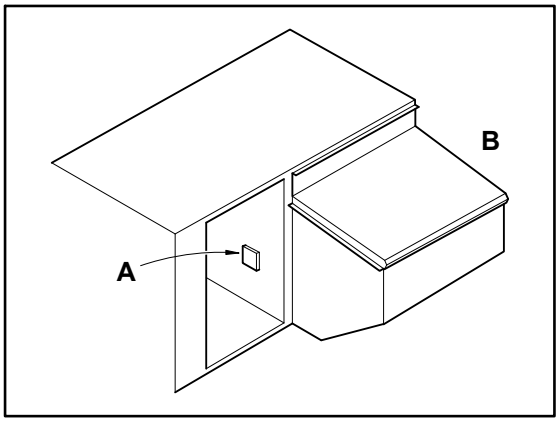
A. Indoor air quality probe.

B. Rain protection assembly and economiser (existing).

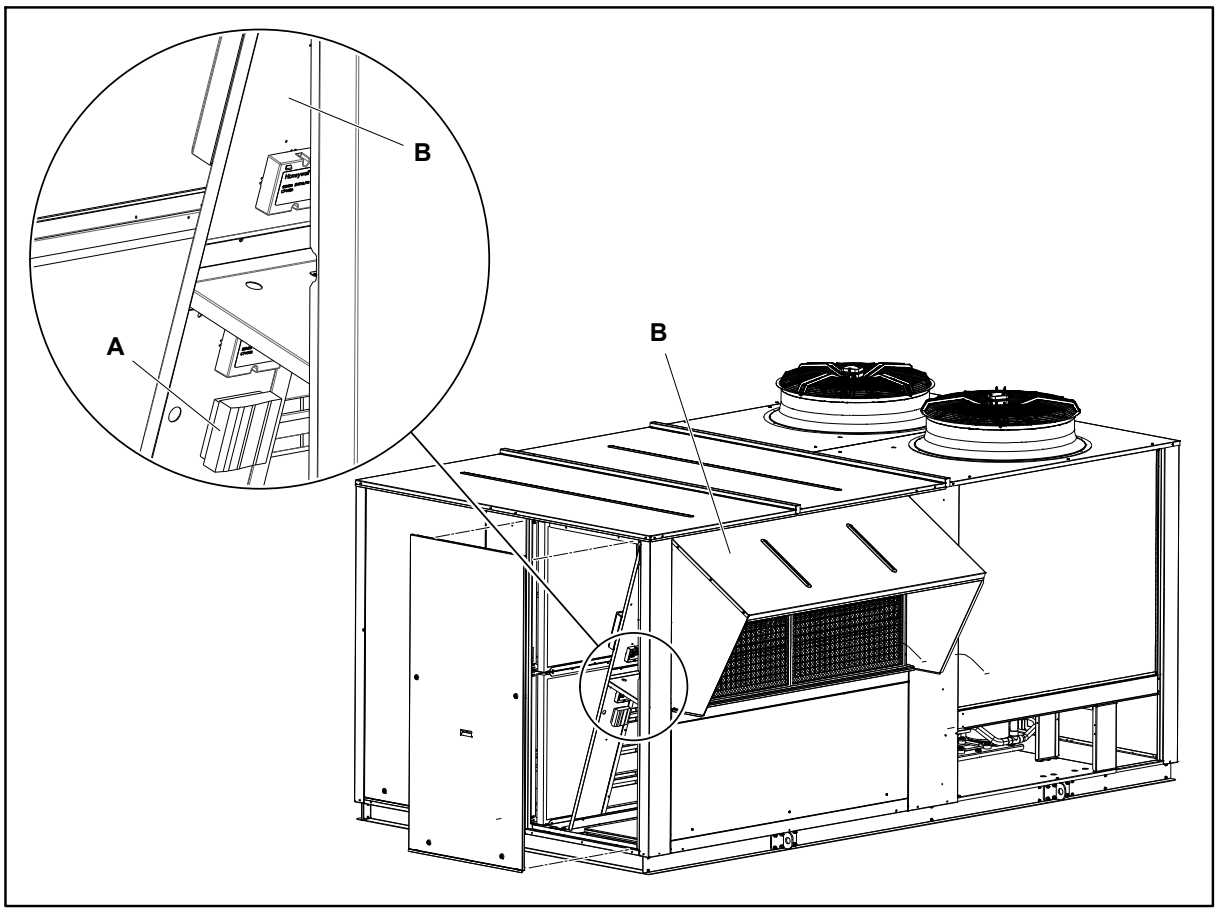
Models 045 / 090

A. Indoor air quality probe.

B. Rain protection assembly and economiser (existing).



Models 100 / 175



A. Indoor air quality probe.

B. Rain protection assembly and economiser (existing).

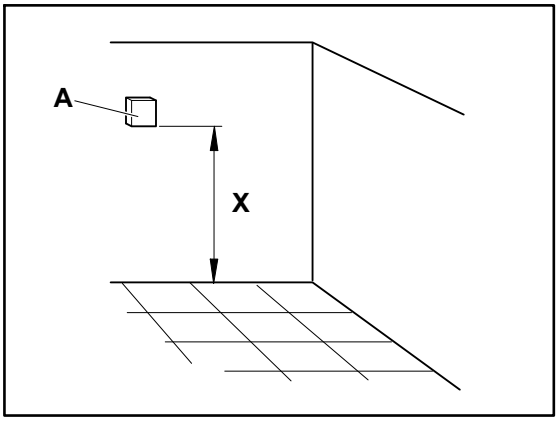
Probe installed in room

The place where the indoor air quality probe **-A-** is installed in the room must be representative of its air quality level.

It must be installed on a wall free of obstacles at a distance of 1,5 to 3 m from the floor.

Probes should not be installed behind curtains or shelving or in gaps or areas where people are permanently present (in this case, the minimum distance should be 1 to 2 metres).

X = 1.5 ÷ 3 m.



1.5 Operation

The air quality probe has a VOC (volatile organic compounds) sensor that compares their concentrations in the air with the setting selected on the probe. Where the value is higher than the setting, the probe triggers output Y1 using a relay.

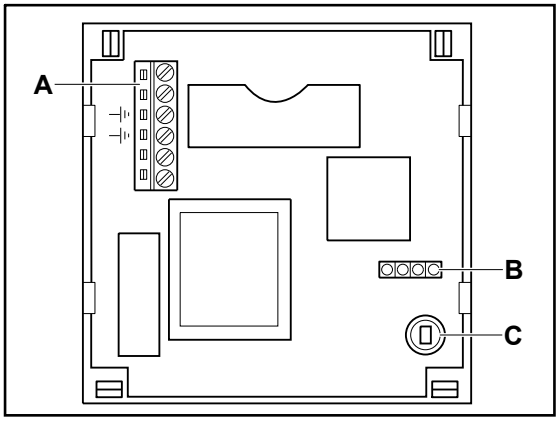
The 230 VAC output signal between Y1 and N is connected to the 230 V AC to 5 V DC conversion board. This board is fitted alongside the economiser control board. The 5V DC signal wire must be connected when J18 is connected on the economiser board.

Where the thermostat setting temperature of the room is met and there is an air quality request signal, the damper is opened to the programmed renewal minimum and the inside fan starts up. The damper then opens further, bearing in mind the maximum (30 °C) and minimum (12 °C) supply temperatures.

In the following cases:
- Disappearance of the air quality request signal,
- the thermostat makes a cold or heat request

The damper returns to the renewal minimum. Where there is no request from the thermostat and the inside fan is in automatic mode, the fan will stop and the dampers will close.

A. Connection terminals.
B. Air quality level selection.
C. VOC sensor.



Three air quality levels can be selected on the probe according to the jumper positions:

0: Normal, default position.
-: Acceptable.
+: Very good.

1.6 Installation

NOTE

- *The electrical connection for the probe will be different depending on the place where it is installed.*
- *Bear in mind the current regulations in the country where the equipment is to be installed.*

Disconnect the power supply to the unit using the main switch **-Q3-** (See Installation Manual).

Install the air quality probe on the return side of the economiser separator panel or inside the room.

Install the 230 V AC to 5 V DC signal conversion board next to the economiser board. Previously remove the plastic cover and secure the board using the plastic separators on the plate support.

Connect the 5 VDC signal wire when J18 is connected on the economiser board.

Probe installed on the return side inside the machine:

Connect the black and blue wires (386 and 387) of the economiser cable (inside the cable ducting on the electrical box side) to X1 terminals L and N, respectively. Then connect air quality probe terminals L and N.

Run the brown (Y1) and blue (N) wires from the probe to the signal conversion board.

Probe installed in room:

Install a 4 x 1 mm^2 cable (black, blue, brown and yellow-green) from the electrical box on the unit to the location where the probe is to be installed in the room.

Connect the black (L), blue (N), brown (Y1) and yellow-green (earth) wires to the X1 connector terminals and to the probe. Then connect wires 387 (N) and 386 (Y1) to the side of the electrical box (connector X1) and to the side of the signal conversion board.

Checking the correct working order of the probe:

Set the thermostat so that the room temperature is met.

Jumper terminals L and Y1 or make the probe detect smoke to check that the output relay is triggered. The damper should open very slowly.

CAUTION

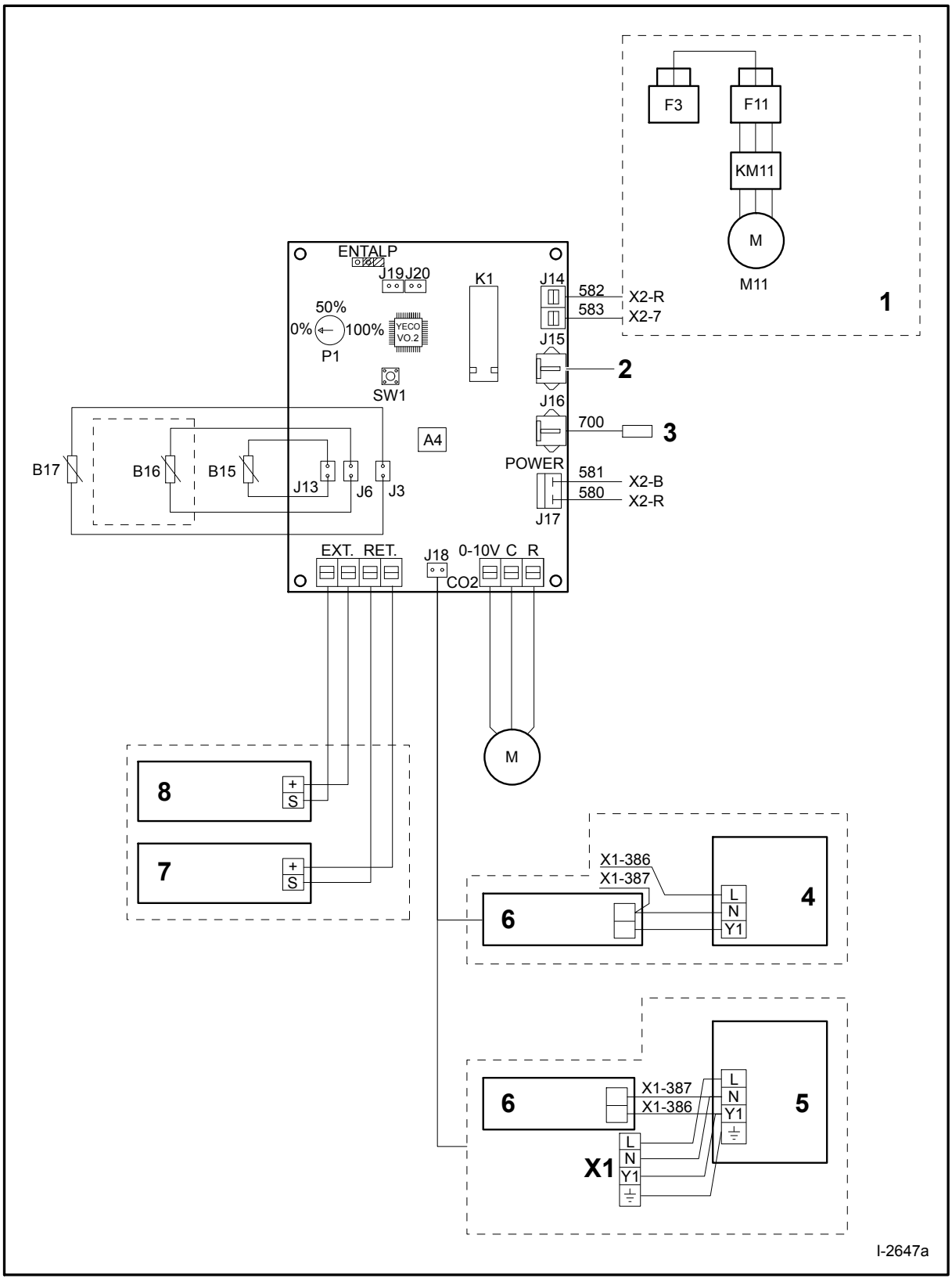
Loose connection terminals produce overheating of cables and terminals. The unit will work incorrectly and there is a risk of fire.

Check that the cables are firmly secured to their connection terminals.

CAUTION

Do not turn on the general switch on the unit or start the unit until all installation work has been completed.

1.7 Wiring diagram



1.	F11	Optional • Reg. 2.5 A (017 - 022) • Reg. 5.5 A (032 - 040) • Reg. 1.4 A (045 - 090)	• Reg. 3 A (075 - 090) • Reg. 3.2 A (100 - 125) • Reg. 4,7 A (150 - 175)
	KM11	A1 to X2-7 (Cable 583) A2 to X2-B	
	M11	Exhaust fan	
	X2-R	24 VAC Phase-R switching	
	X2-7	To A1 from KM11	
2.	Accessories		
3.	Accessories		
4.	Air quality probe, optional, fitted on return (inside machine)		
	L	Black	
	N	Blue	
	Y1	Brown	
5.	Air quality probe, optional, fitted on ambient (machine exterior)		
	L	Black	
	N	Blue	
	Y1	Brown	
	⏚	Yellow-Green	
6.	Air quality board (green)		
7.	Enthalpy probe C7400A return, optional		
	+	Red	
	S	White	
8.	Enthalpy probe C7400A outside, optional		
	+	Red	
	S	White	
B15	Return probe (black)		
B16	Supply probe, optional depending on model (yellow)		
B17	Indoor probe (white)		
M10	Damper		
	0-10 V	Grey	
	C	Black	
	R	Red	
X1	Cables to be installed on site (not supplied)		

Data and measurements subject to changes without prior notice.