

ecos205, 206: DDC controllers for air volume

How energy efficiency is improved

Demand-led control for air volume using efficient control strategies.
CO₂-dependent control to optimise room conditioning with minimal energy costs.

Areas of application

Can be used for variable air volume control in single rooms. Supports additional functions such as:

- Fan control
- Electric reheater
- 2- and 4-pipe plants, heating/cooling
- Frost protection function
- Room lighting control

Features

- Compact DDC volume flow controller
- Location-independent static differential pressure pick-up
- Battery-buffered RAM for parameters, clock and calendar functions

Technical description

- 24 V~ voltage supply
- 8 inputs
- 6 outputs

Products

| Type | Description |
|------------|---------------------------|
| EYE205F002 | DDC air volume controller |
| EYE206F002 | DDC air volume controller |



T10666

Technical data

Electrical supply

| | |
|-------------------|----------------------|
| Power supply | 24 V~ ±20%, 50/60 Hz |
| Power consumption | 10 VA ¹⁾ |

Permitted ambient conditions

| | |
|--|-----------------|
| Operating temperature | 0...45 °C |
| Humidity | < 85% rh |
| | No condensation |
| Operating pressure p _{stat} ³⁾ | ±3 kPa |

Installation

| | |
|-------------|----------------|
| Weight (kg) | 0.4 |
| Dimensions | 178 x 103 x 42 |

Inputs

| | |
|--|-----------------------------------|
| for operating unit | EYB2.., EY-RU2.. |
| for temperature sensor | Ni1000 |
| for command variable | 0...10 V (R _j = 10 kΩ) |
| for control contact | On/off |
| Static pressure difference ²⁾ | |
| Pressure range | 0...250 Pa |
| Linearity | Typ. 2% FS |
| Reproducibility | Typ. 0.2% FS |
| Membranes | Silicone rubber LSR |
| Positional requirements | ±0.51% FS |
| Zero point stability | < 0.2% FS |

Outputs

| | |
|-------------------------|----------------------------|
| Triac switching outputs | 0-I-II (24 V~, 1 A) |
| Relay switching outputs | Make contact (250 V~, 2 A) |
| Analogue | 0...10 V (load ≥ 1 kΩ) |

1) Transformer size: see page 2.

2) Due to technical plant considerations, the minimum pressure difference for V_{min} should not exceed 2 Pa.

3) The zero point should be recalibrated if the permissible operating pressure is exceeded.

4) If it is mandatory to comply with the industrial standard (EN 61000-6-2), the connecting cables for the digital inputs (DI), analogue inputs and outputs (AI/AO) and the counter inputs (CI) must not be longer than 30 m.

5) Equipment with radio interference Class A.

Standards, guidelines and directives

| | |
|---------------------------|--|
| Degree of protection | IP 10 (EN 60529) |
| Protection class | II (EN 60730-1) |
| Conformity to: | |
| EMC Directive 2004/108/EC | EN 61000-6-1, EN 61000-6-2 ⁴⁾ |
| | EN 61000-6-4 ⁵⁾ |
| | EN 55022 Class A |
| Software class A | EN 60730-1 Annexe H |
| Low Voltage Directive | |
| 2006/95/EC | EN 60730-1, EN 60730-2-9 |

Additional information

| | |
|----------------------|---|
| Fitting instructions | MV505467 |
| Material declaration | MD 94.205 |
| Wiring diagram | A06470 ; A06471 |
| Dimension drawing | M11383 |

EYE205

| | |
|---|---|
| 1 | 1 |
| 1 | 2 |
| 1 | 1 |
| 2 | 3 |
| 1 | 1 |
| - | - |
| - | - |
| - | - |
| - | - |
| - | - |
| - | - |

EYE206

EYE205

| | |
|---|---|
| 2 | 3 |
| - | 1 |
| 1 | 2 |

EYE206

Transformer size

Since the form factor of the current consumed by ecos deviates largely from the sinus function, it is advisable to include a performance reserve for small transformers.

Since small transformers differ from one another, you should proceed as follows if you are unsure of the transformer's behaviour and there are no other details available:-

- For 1 ecos: choose a transformer of at least 25 VA
- For 2 ecos: choose a transformer of at least 40 VA
- For 3 ecos: choose a transformer of at least 50 VA
- For 6 ecos: choose a transformer of at least 75 VA
- For 10 ecos: choose a transformer of at least 100 VA
- For each further ecos: add 10 VA.

Engineering notes

If connected to 230 V~, the unit must be made touch-proof.
Communication cabling must be undertaken correctly and must meet the requirements of standards EN 50174-1, -2 and -3.

Communication cabling must remain separate from other cabling that carries power.

No account has been taken of special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 and 2 and similar standards. Local regulations on installation, application, access, access authorisations, accident prevention, safety, dismantling and disposal must be observed. Compliance is also required with installation standards EN 50178, 50310, 50110, 50274, 61140 and similar.

The following conditions must be met:
Cross-section of conductors:

min. 0.8 mm², max. 2.5 mm², Cu conductors in compliance with the standards and national installation regulations

This is class A equipment. It may cause radio interference in residential premises; in this case, the operator may be requested to implement appropriate measures.

For further information, consult the fitting instructions.

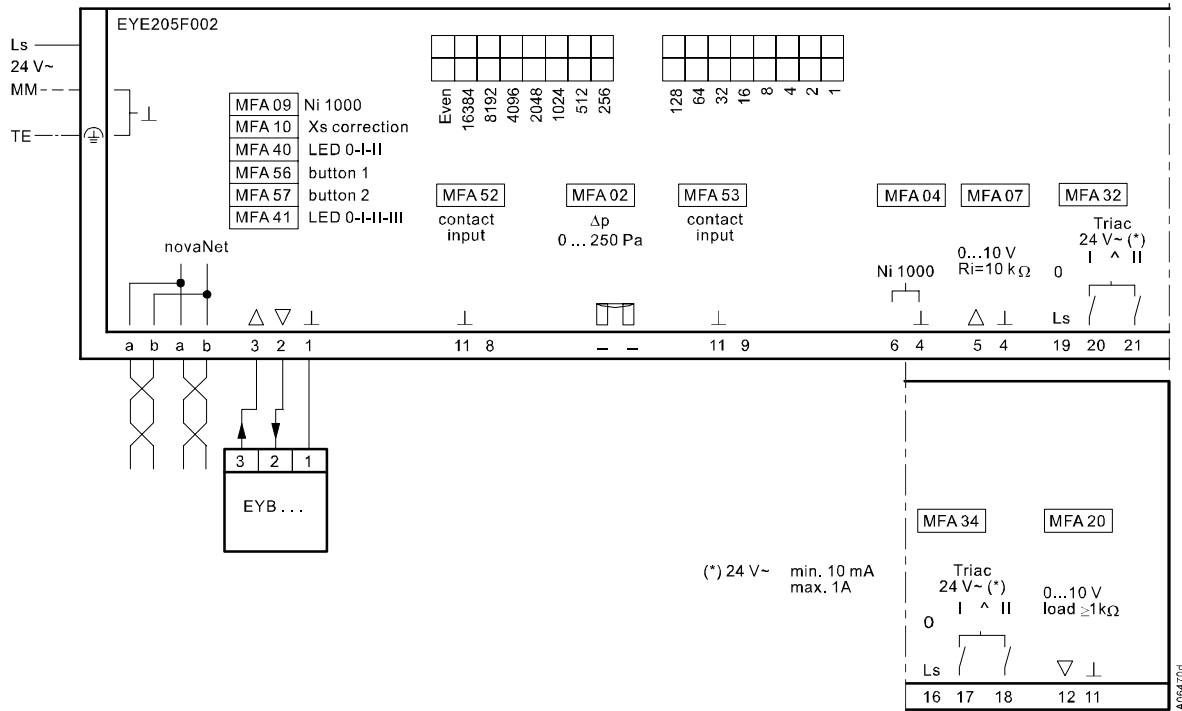
| MFA | Address type | EYE 205 | | EYE 206 | |
|-----|---|---------|-----------|---------|-----------|
| | | HDB | Terminals | HDB | Terminals |
| 02 | Pressure difference measurement | * | - | * | - |
| 04 | Temperature measurement, Ni1000 (measuring range: -10...95 °C) | * | 4-6 | * | 4-6 |
| 05 | Temperature measurement, Ni1000 (measuring range: -10...95 °C) | - | - | * | 4-7 |
| 07 | Analogue measurement, 0...10 V= | * | 4-5 | * | 4-5 |
| 09 | Temperature measurement, Ni1000 (operating unit) (measuring range: -10...95 °C) | * | 3-2-1 | * | 3-2-1 |
| 10 | Potentiometer measurement (operating unit)(basic setting: ± 2°) | * | 3-2-1 | * | 3-2-1 |
| 20 | Analogue output 0 (2)...10 V= | * | 11-12 | * | 11-12 |
| 21 | Analogue output 0 (2)...10 V= | - | - | * | 11-13 |
| 32 | Digital output 0-I-II (Triacs 24 V~, 1A) | * | 19-20-21 | * | 19-20-21 |
| 33 | Digital output 0-I-II (Triacs 24 V~, 1A) | - | - | * | 22-23-24 |
| 34 | Digital output 0-I II (Triacs 24 V~, 1A) | * | 16-17-18 | * | 16-17-18 |
| 35 | Relay output (250 V~, 2A) | - | - | * | 14-15 |
| 40 | Operating feedback, MFA 56 (0-I-II) | * | internal | * | internal |
| 41 | Operating feedback, MFA 57-1 (0-I-II-III) | * | internal | * | internal |
| 42 | Rotating circuit from MFA 56 0-I-II-0... | * | internal | * | internal |
| 43 | Rotating circuit from MFA 57 0-II-II-I-0... | * | internal | * | internal |
| 52 | Contact input | * | 11-8 | * | 11-8 |
| 53 | Contact input | * | 11-9 | * | 11-9 |
| 54 | Contact input | - | - | * | 11-10 |
| 56 | Contact input, key 0-I-II (operating unit) | - | 3-2-1 | - | 3-2-1 |
| 57 | Contact input, key 0-I-II-III (operating unit) | - | 3-2-1 | - | 3-2-1 |

Dimension drawing

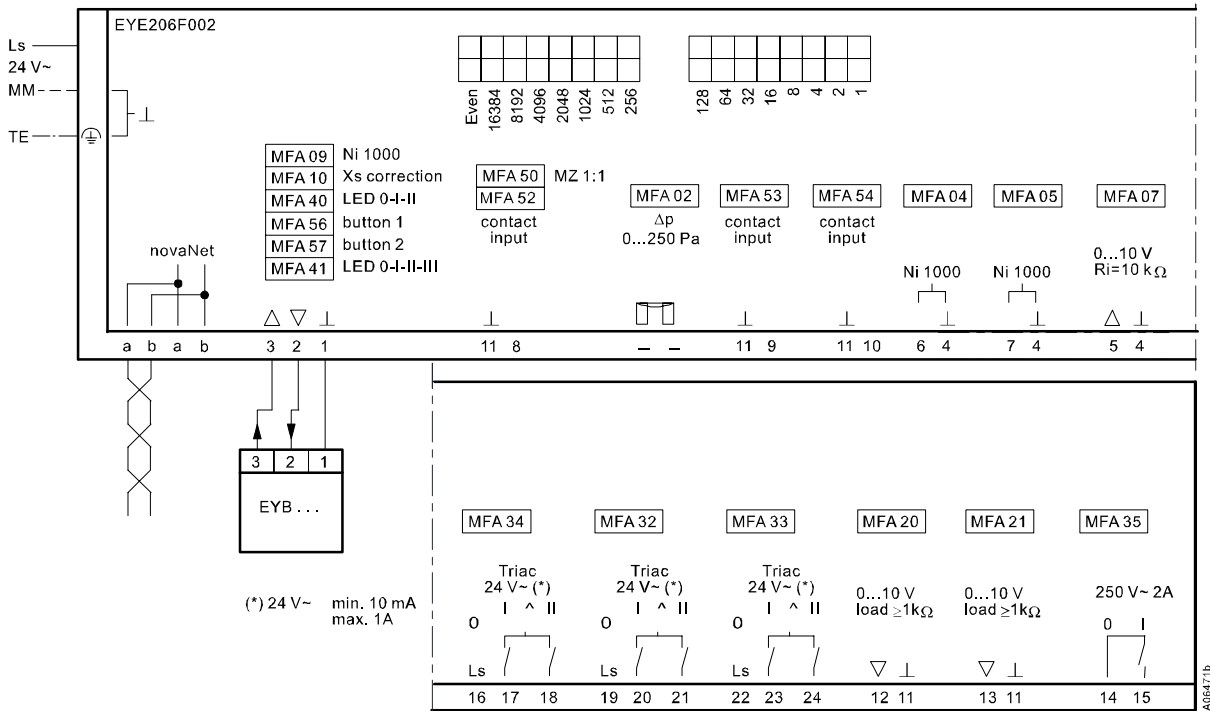
∅: Connections for interior hose diameter 3.5 ...6 mm

Wiring diagram

EYE205

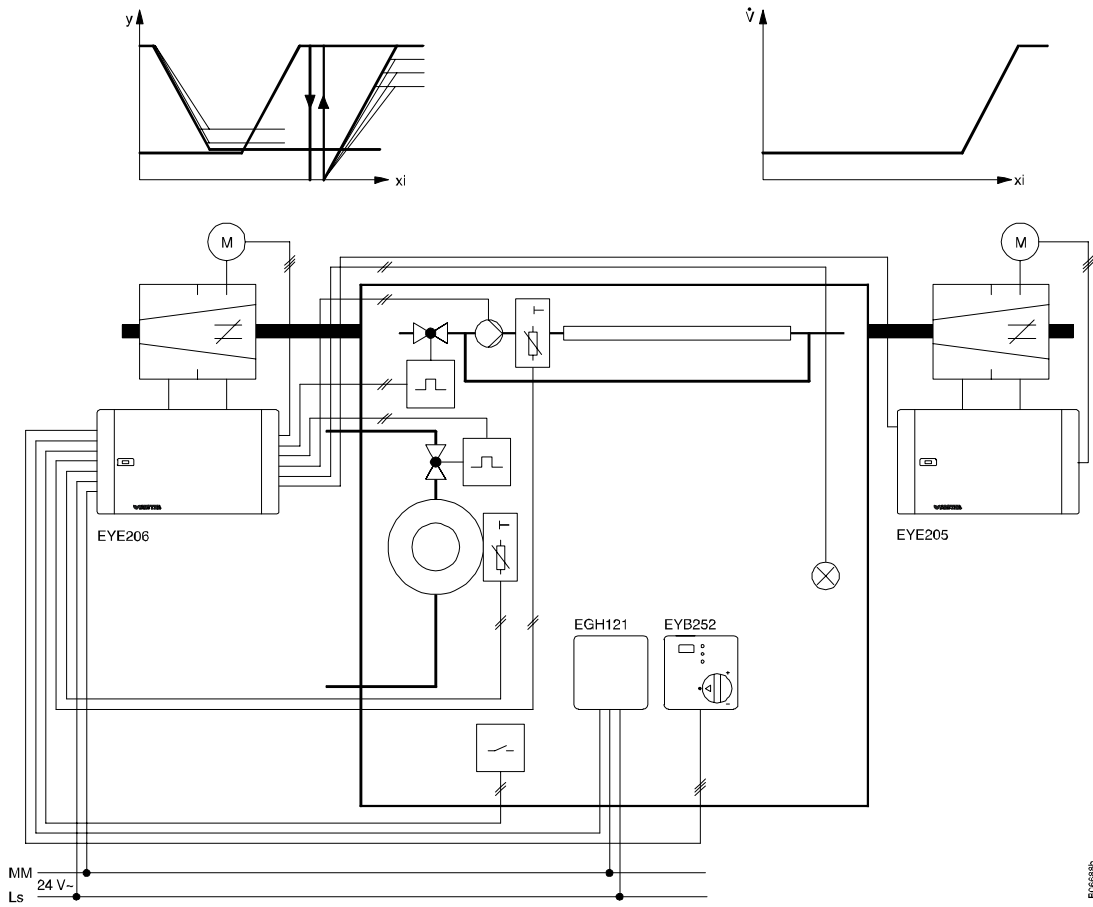


EYE206



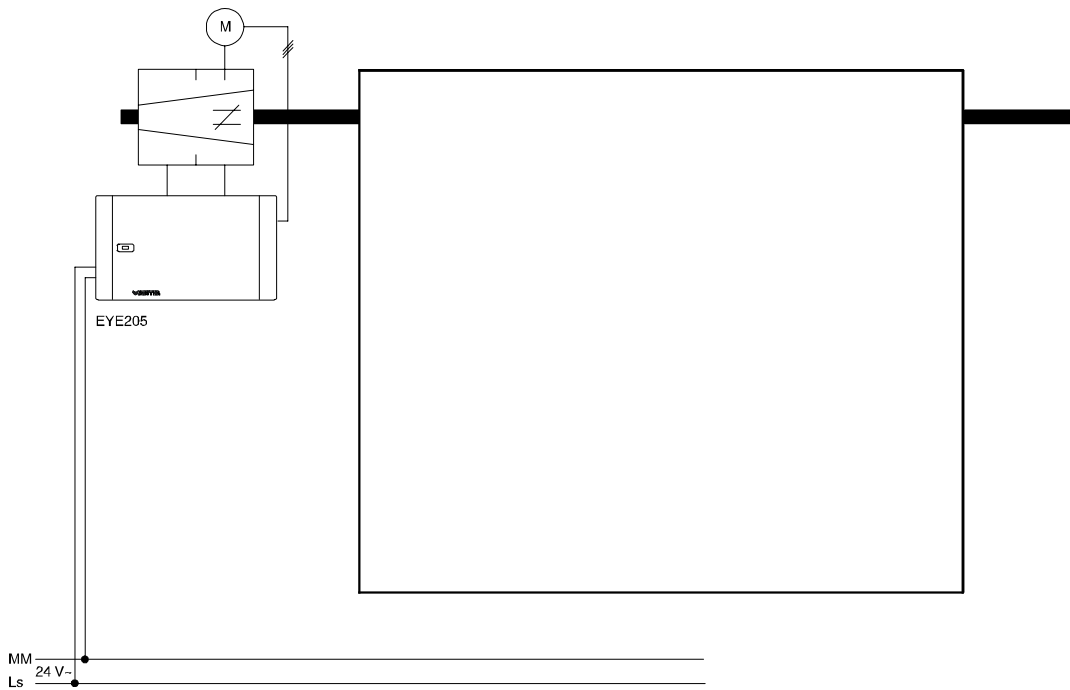
Applications

Chilled beams with constant water quantity, VVS radiator heater with window comfort, dew-point monitoring



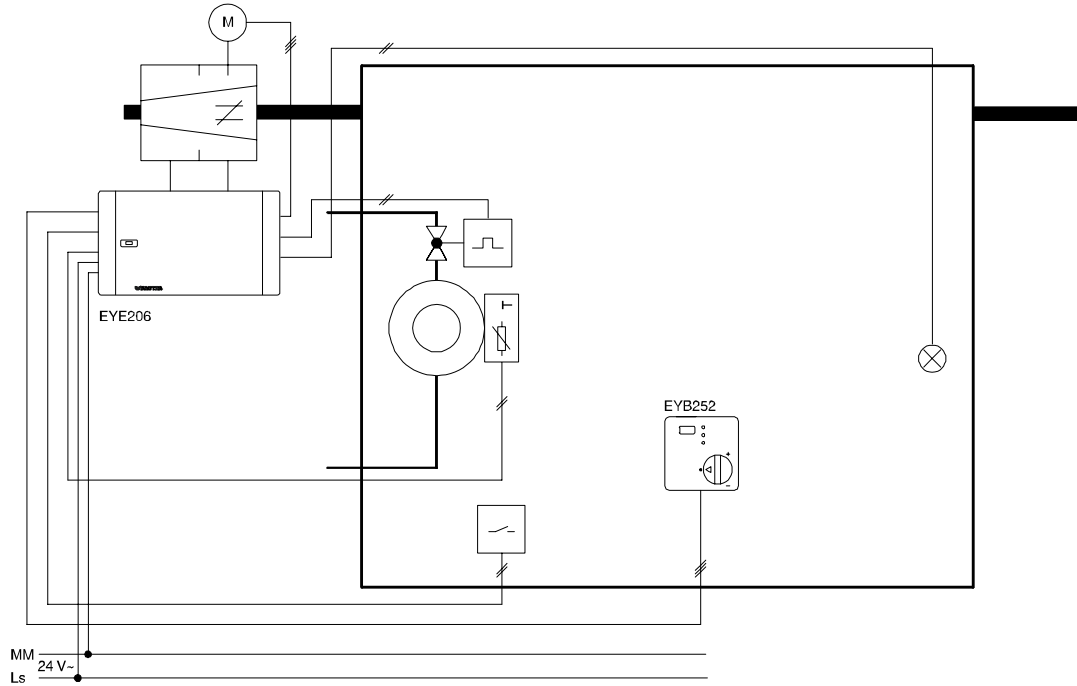
B016680b

VVS fixed-value control



B016680b

VVS fixed-value, follow-on control with radiator heater and window comfort monitoring



VVS fixed-value, follow-on control SA/OA with radiator heater and window comfort monitoring, with OPEN characteristic shift

