

DELIVERED UNCONNECTED

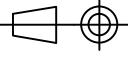


ELECTRICAL SWITCHBOARD (ELECTRICAL ENTREPRENEUR)

| No | Change | Date | By | Appr |
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| Name CONTROL CHART | | | | Weight kg | |
| Enervent Oy, enervent@enervent.com Tel +358 207 528 800, www.enervent.com Kipinätie 1, FIN-06150, Porvoo | | | | Unit Liggolo eWind E | Change - Sheet 1 |

| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
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| Air handling unit, component catalog | | | | | | | | |
| Designation | Name | Equipment | Technical data | Note | | | | |
| OP20 | Control panel | 1 pc standard delivery | eWind delivery, contains cabel | | | | | |
| TE01 | Fresh air temperature | Standard | NTC-10 | | | | | |
| TE05 | Supply air, after heat recovery | Standard | NTC-10 | | | | | |
| TE10 | Supply air temperature | Standard | NTC-10 | | | | | |
| RHT30 | Extraxt air; temperature and humidity | Standard | Sender | | | | | |
| TE32 | Exhaust air temperature | Standard | NTC-10 | | | | | |
| SU1 | Fresh air filter | Standard | Standard M5 | Alternatively F7 | | | | |
| SU30 | Extract air filter | Standard | Standard M5 | Alternatively F7 | | | | |
| LT075 | Rotating heat exchanger | Standard | | | | | | |
| M75+SC75 | HRW motor + control | Standard | EC motor, max effect 15 W | | | | | |
| TF10+M10+SC10 | Supply fan | Standard | EC motor | | | | | |
| PF30+M30+SC30 | Exhaust fan | Standard | EC motor | | | | | |
| SLP45 | Supply air reheater, electrical | E-models | | Effect acc. to Unit size | | | | |
| W45 | Supply air reheater, water | W-models | | Effect acc. to Unit size | | | | |
| TL45+SV45 | Valve actuator + 2-way control valve | W-models | Kvs-value acc. to Unit size | | | | | |
| TL50+SV50 | Valve actuator+ 3-way control valve | CG-models | Kvs-value acc. to Unit size | | | | | |
| CG50 | Supply air cooler | CG-models | | Effect acc. to Unit size | | | | |
| TE02 | Preheated outdoor air | Models with preheating | NTC-10 | | | | | |
| C02 | CO2-measurement | Optional equipment | 200-2000ppm, 0-10Vdc | | | | | |
| HS | Extra time, switch | Optional equipment | Pushbutton | | | | | |
| HZ | Emergency stop | | Normally open (NO) as standard | | | | | |
| FG01 | Fresh air dampers+Damper motor | Optional equipment | | | | | | |
| FG39 | Exhaust air dampers+Damper motor | Optional equipment | | | | | | |

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| | | | | Name COMPONENT CATALOGUE | Weight kg | |
| Enervent Oy, enervent@enervent.com Tel +358 207 528 800, www.enervent.com Kipinätie 1, FIN-06150, Porvoo | | | | Unit Liggolo eWind E | Change - | Sheet 1 |

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General description of functions, eWind automation

The Air Handling unit in operation

The operation mode of the air handling unit can be changed from the control panel, by external control, or by fieldbus.

Fieldbus:

Modbus–RTU fieldbus is standard for all eWind air handling units. The unit can also be connected to KNX–fieldbus by an external adapter (extra equipment). Measurements can be read and settings changed by fieldbus.

Fan control:

The fans operate at constant speed. The supply and extract fans have individual speed settings for all operating modes. Fan speed settings are made from the control panel.

Temperature control:

The measurement for supply air temperature (TE10) is kept at its setpoint value by cooling (if applicable), heat recovery and by additional heating of the supply air after heat recovery.

Humidity boost:

All eWind air handling units are equipped with a built in relative humidity sensor in the extract air. Users can activate the humidity boost. When activated, the eWind automation increases the fan speeds if the humidity limit is exceeded.

CO2–boost (optional equipment):

Activation of the CO2 boost is possible, if an internal or external CO2 sensor is installed (optional equipment). By activating the CO2 boosting function, the eWind automation increases the fan speeds if the CO2 level exceeds its setpoint.

General safety features and deactivations

In units where the fans constitutes a danger, the unit shuts down if the service hatch is opened.

Dampers:

The dampers are controlled by a damper relay. As long as the air handling unit is operating the potential free relay connection is closed.

Models with electrical heater

Air handling units equipped with more than 2 kW supply air electrical heaters have pressure differential monitoring of the supply air fan. The electrical heater is disabled if pressure differential over the supply air fan is missing.

Models with water heater

Freeze protection

When the unit is restarted, the TL45 modulating valve is opened by the eWind automation according to the outside air temperature. When the unit is in stop mode, valve TL45 is regulated by the measurement for return water temperature TE45 so that constant return water temperature can be maintained. If the return water temperature under operation–mode or stop–mode decreases below the alarm limit for return water temperature an A–alarm is activated and the air handling unit shuts down, valve TL45 remains in a fully open position and the circulation pump remains on.

Summer function

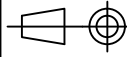
All pump controlling outputs are equipped with pump summer control. This starts the pump occasionally to prevent seizure of the pump

A–alarm:

In case of an A alarm the air handling unit shuts down and an alarm is indicated in the operating panel display, and the alarm relay activates (alarm relay is not included in models with cooling or preheating). The unit can be restarted when the reason for the alarm is fixed and the alarm acknowledged.

AB–alarm:

In case of AB alarm the air handling unit goes into fail–safe mode, meaning that the supply and extract air fans are operating at minimum power. The alarm is automatically acknowledged and the air handling unit restarted to standard operation mode when the reason for the alarm is fixed.

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