



Digireg®



Bypass



EC motor



ErP conform

VAV-CAV-COP
control types

Technické parametry

■ Cabinet

Modular chambers are built out of 50 mm thick galvanized sheet metal panels finished with RAL9002 (gray-white) external coating. Individual panels are lined with acoustic and thermal non-flammable mineral wool insulation. For easy service access modular chambers are fitted with either hinged service door or with a fully removable panel. Bottom of each modular chamber is supported by 130 mm high galvanized steel profiles.

Unit's insulation lining meets CSN EN 1886:

- Structural strength factor of D1
- Thermal bridge factor of TB2
- Thermal permeability factor of T3
- Filter to frame air leakage < .5% (F9)
- Overall cabinet tightness rated as L1

3

Individual chambers are connected together with M8 x 16 bolts and a special couplers. The bolts are not part of the delivery. Bolt connections for unit size up to XLH 20 is located on the outside, for unit size larger then XHL 20 bolt connection is on the inside.

■ Fans

Centrifugal backward-curve blades fans with impeller made out of composite materials. Each furnished fan is statically and dynamically balanced.

■ EC motors

EC motor is assembled directly on the fan impeller. The fan motor can be continuously controlled by an external signal 0 to 10V. The motor is equipped with its own built-in thermal protection. Motor efficiency class IE4, electric motor protection IP54.

■ AC motors

Base AC motor is assembled directly on the fan impeller. The fan motor can be continuously controlled by an external signal 0 to 10V by means of a frequency converter, which can be ordered as the unit accessory. The motor is equipped with its own built-in thermal protection. Motor efficiency class IE4, electric motor protection IP54.

■ Fixed plate heat exchanger

Aluminum built fixed plate or cross-flow heat exchanger separates fresh air stream from exhausted air. Fresh air inlet is equi-

pped with a by-pass damper used when recuperation is not needed.

■ RW Heat exchanger

Rotating Wheel heat exchanger can transfer heat or heat and humidity simultaneously. It is designed for ambient temperatures running between -20 °C to +55 °C. Wheel is coiled from layers of aluminum foil with standard layer span of 1,6 mm. Wheel's casing is supported by galvanized profiles.

Brush seal provides a tight seal between rotor and its casing. Where needed, labyrinth seal with air leakage rate less than 1.5 % can be used. The rotating wheel is driven by electric motor, worm transmission with pulley and belt. Power supply requirement: 1x 230V/50 Hz or 3x 230V/50 Hz. 0 to 10V continuous speed controller comes as an option.

■ Filters

Possible options are: pocket filters, panel filters, filters with active carbon or grease filters. G3 to F9 filter classification is available for pocket and panel filters. Additional option of HEPA/ULFA high efficiency filters is also available. Access to filters is provided through opening service access door.

■ Dampers

Fresh air intake opening and return air intake opening are both fitted with aluminum control dampers. The dampers meet class 2 tightness classification according to EN1751 and are ready for installation of power actuators. Air mixing or air circulation damper configuration are available upon request.

■ Heating and cooling provisions

Based on individual project requirements each unit can be fitted with a hot water coil or with an electric heat strip to provide for heating and with a chilled water coil or DX coil to provide for cooling. Heat pump system can provide both options, it provides primary source of heating and cooling with hot water coil or electric heat strip as a secondary source of heating. Coils are built out of copper tubes and aluminum sheets locked inside a solid galvanized frame.

Where a higher level of protection is needed optional anti-corrosion coating is available. Electric heat strip comes equipped with a safety thermostat which activates at 60 °C and emergency thermostat with manual reset which is activated at 120 °C.

■ Steam humidifier

Duovent XHL Modular unit can be fitted with a separate chamber dedicated to a steam humidifier. Steam humidifier and its controls are not part of our delivery. This optional steam humidifier chamber comes pre-piped with condensate drain line fitted with a drain trap. Steam humidifier option cannot be controlled by Digireg®, it needs to come with its own control system.

■ Noise silencers

The link noise silencers integrated within the unit are delivered in lengths of 600, 1000, 1200 and 1500 mm acc. to required noise reduction level.

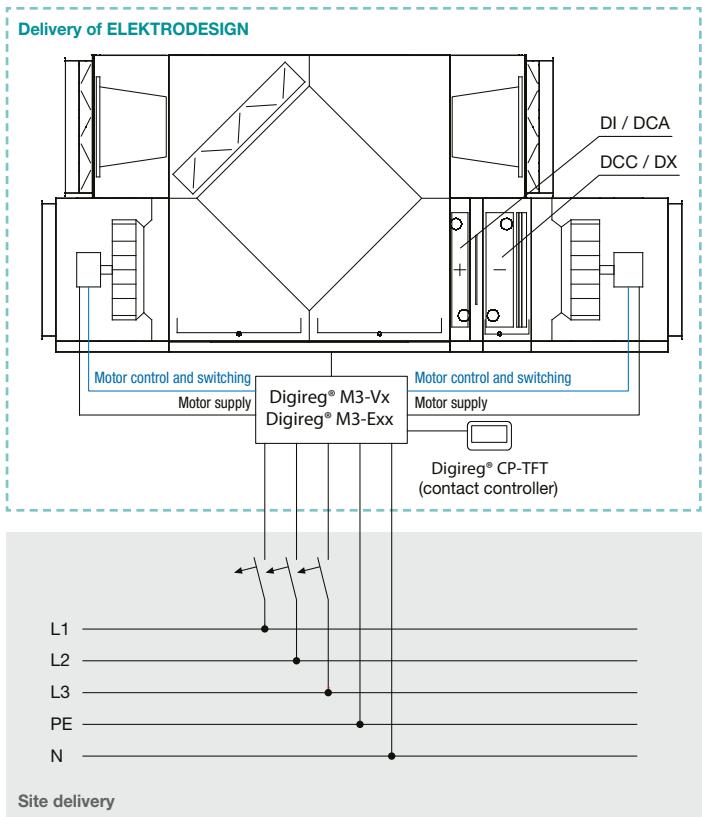
■ Power supply

Either 1x 250V/50 Hz or 3x 400V/50 Hz, depends on the type of unit. Control wires and power cables are installed running through plastic penetration inlets pre-drilled in panels and rubber penetration gromets with membrane running on the inside of unit. The unit delivery does not provide for unit's power breaker and power supply. Please note power connection schematics in the picture below.

Supplementing figures

I/C power supply logic schemes

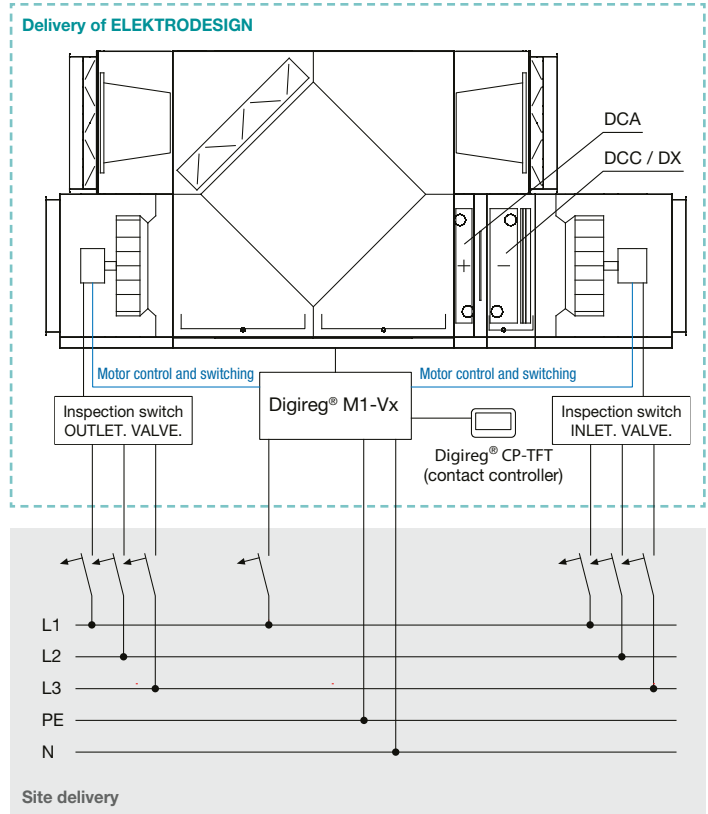
Variant for A/C units Modular XLH/XLHL of motor max. power to 2× 6 kW
**(6 kW – unit inlet section,
 6 kW – unit outlet section).**
 Max. power of electric heater in unit 72 kW
 (3× 400V/50 Hz).



Note: Design of the main breaker and inlet cable to the Digireg® I/C system is part of electric project (the project is not within supply scope of ELEKTRODESIGN ventilátory, s.r.o.). Information on total electric inlet power of A/C unit is part of the unit technical specification.

I/C power supply logic schemes

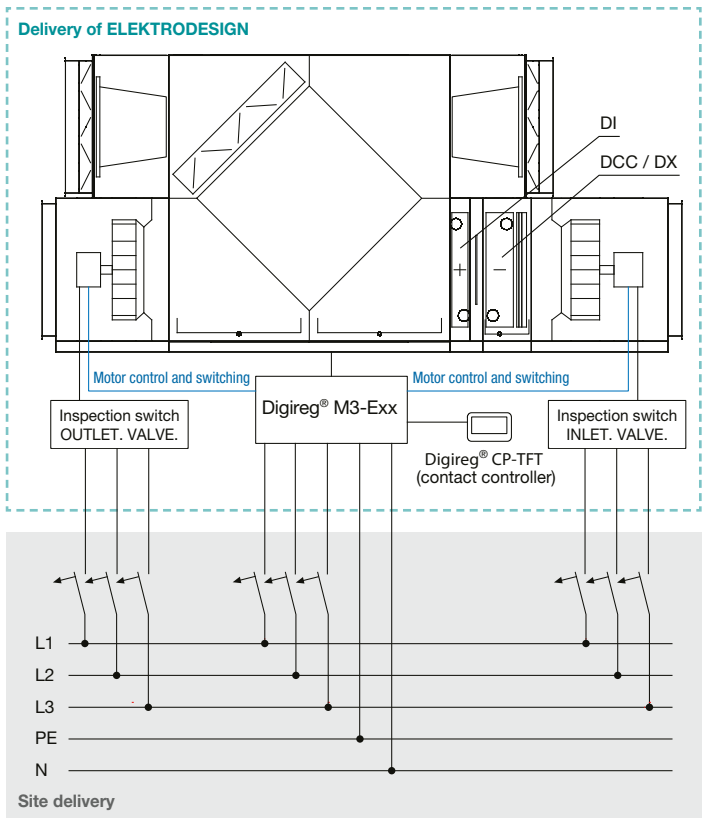
Variant for A/C units Modular XLH/XLHL with motor power above 2x 6 kW (6 kW and more – unit inlet section, 6 kW and more – unit outlet section). The diagram applies only to water heating units (not electric heating).



Note: Design of the main breaker and inlet cable to the Digireg® I/C system is part of electric project (the project is not within supply scope of ELEKTRODESIGN ventilatory, s.r.o.). Information on total electric inlet power of A/C unit is part of the unit technical specification.

I/C power supply logic schemes

Variant for A/C units Modular XLH/XLHL with motor power above 2x 6 kW (6 kW and more – unit inlet section, 6 kW and more – unit outlet section). The variant applies only for units with electric heating of max. power 72 kW.

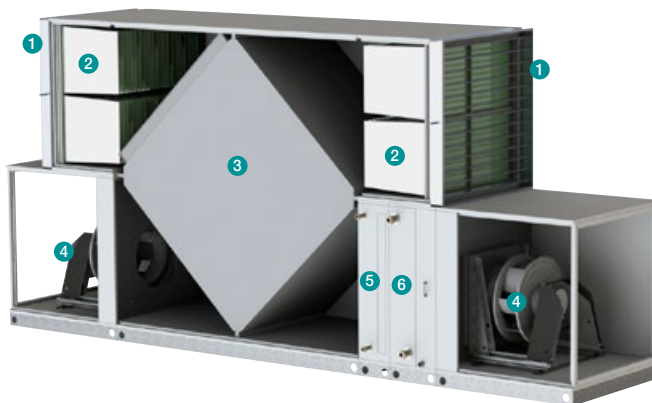


Note: Design of the main breaker and inlet cable to the Digireg® I/C system is part of electric project (the project is not within supply scope of ELEKTRODESIGN ventilatory, s.r.o.). Information on total electric inlet power of A/C unit is part of the unit technical specification.

Supplementing figures

Basic components of the unit

- 1 Supply air and return air damper
- 2 Supply air and return air filter rack designed for type G3 to F9 filter efficiency and HEPA filter.
- 3 Heat recovery module. Cross-flow or rotating wheel type of heat exchanger.
- 4 Supply air and exhaust air motors. EC motors or AC motors with frequency drive.
- 5 Hot water coil with a capillary tube for freeze protection/ Electric heat strip
- 6 Chill water coil or DX coil with water droplets eliminator and condensation pan.



Performance tables of units DUOVENT® MODULAR XLH/XLHL

Model	Nominal volumetric air flow [m³/h]
XLH 2, XLHL 2	2,000
XLH 2.5, XLHL 2.5	2,500
XLH 3.15, XLHL 3.15	3,150
XLH 4, XLHL 4	4,000
XLH 5, XLHL 5	5,000
XLH 6.3, XLHL 6.3	6,300
XLH 8, XLHL 8	8,000
XLH 10, XLHL 10	10,000
XLH 12.5, XLHL 12.5	12,500
XLH 16, XLHL 16	16,000
XLH 20, XLHL 20	20,000
XLH 25, XLHL 25	25,000
XLH 31.5, XLHL 31.5	31,500
XLH 40, XLHL 40	40,000
XLH 50, XLHL 50	50,000
XLH 63, XLHL 63	63,000
XLH 80, XLHL 80	80,000
XLH 100, XLHL 100	100,000

Minimum service space of units DUOVENT® MODULAR XLH/XLHL

Before the final unit assembly, it is necessary to assure that all unit access clearances are met and the unit's service doors are accessible.

- At the fan chamber min. 0,7times of chamber part width, but minimum 600 mm to enable sliding the aggregate out.
- At the filter chamber min. 600 mm for removal of filtering cassettes.
- At the exchanger chamber (heaters or coolers) min. 1,15times width of the chamber part to slide the exchanger out.
- At the eliminator chamber min 1,15times width of the chamber part to slide the exchanger out.
- At chamber with plate recuperation exchanger min. 1.15times of chamber part width to slide the plate exchanger out.
- At chambers fitted with doors min. 600 mm for maintenance access.
- Distance of combustible objects min. 200 mm from the unit.

3