



Features

- **Flexibility**
 - I-MAT frequency converters are equipped with a software which provide different operating modes in order to cover a wide range of applications.
- **Reliable**
 - The high efficiency heatsink with integrated fans allows to cool the frequency converter independently from the motor, to provide a higher reliability of the system.
- **Safety**
 - The shape of the I-MAT frequency converters allows to separate the signal terminals area, from the power terminals area, in this way the user can operate on the signals connections in safety conditions.
- **Easy to use**
 - The integrated control panel allows to program all the parameters directly on the frequency converters. Moreover it's possible to remove the control panel and remote it with a connection cable.
- **Cascade control mode**
 - The system flexibility allows, with an optional electronic card, to assemble more units making them communicate together. The system is capable to manage variable speed pumps (up to 6) and fixed speed pump (up to 5).

Construction

Variable speed system driven by frequency converter for the motor control in the water supply applications and in the production/ distribution of hot/cold water. I-MAT is an integrated control system which, applied to the motor, allows to manage a wide range of applications and operating modes. Classification scheme IE2

Applications

Frequency converter for automatic pump control suitable for:

- water supply
- water transport and distribution
- production and distribution of hot/cold water
- water treatment

For protection of the pump:

- against dry running;
- against operation with closed connection ports.
- Against overcurrent of the motor
- Against overvoltage and undervoltage of the power supply
- Against unbalance or missing supply phases.

Operating conditions

Input voltage: 3~380V-10% ÷ 3~480V+5%

Output voltage: 0 ÷ 100% of the input voltage

Input frequency: 50-60 Hz

Output frequency: up to 70 Hz

Protection: IP55

Max Ambient Temperature: 50°C

Altitude: no higher than 1000 m, inside a closed environment.

Construction

(Standard execution)

The system comprises of:

- Frequency converter.
- Removable control panel
- Power terminal board
- Signals terminal board
- Cable glands.

On request:

Motor adapter for the motor mounting of the frequency converter

Adapter for wall mounting

- Pressure and temperature transducer
- Main switch
- Line filter and output filter
- Modbus Kit
- Multi-pump board

Pump type

Type three-phase	Max. VFD output current	Typical motor power 400V
	(A)	(kW)
I-MAT 5,2 TT-A	5,2	0,55 ÷ 1,8
I-MAT 11,2 TT-B	11,2	2,2 ÷ 4
I-MAT 25,8 TT-C	25,8	5,5 ÷ 11
I-MAT 65,4 TT-D	65,4	15 ÷ 30 (37)*
I-MAT 119 TT-E	119	37 ÷ 55

* 2-pole 37 kW

Variable speed system
driven by frequency converter

Operating modes



Constant pressure mode

The system keeps the pressure constant when the quantity of water requested by the user changes. The user can choose the operating pressure according to his needs.



Proportional pressure modes

Proportional pressure reduces the pressure of the pump (and as a consequence, the operating frequency) proportionally with the water demand of the system.



Constant temperature mode

In this operating mode the system is used to keep the temperature at a constant value in a specified system point.



Constant flow mode

Constant flow mode grants that system change the speed of the pump in order to keep constant the flow which pass inside a flow meter.



Fixed speed mode

In this operating mode the system work as a fixed speed pump. The speed of the pump could be set by the user between a range of speeds, or controlled by an external signal.



Night mode

The night mode is an optional mode which allows to reduce the speed of the pump if the temperature in the system decreases below a set value, this operating mode can be used with all operating modes over described.

Control Panel



I-MAT is equipped with a control panel that allows to carry out the set-up of the system and to monitor all system parameters.

The control panel is inside a IP55 enclosure which is possible to rotate and install in remote positions.

It is possible use the control panel in remote positions by means a cable with M12 connectors (standard cable).

The LCD custom display gives an easy overview of the system situation and of the operating parameters.

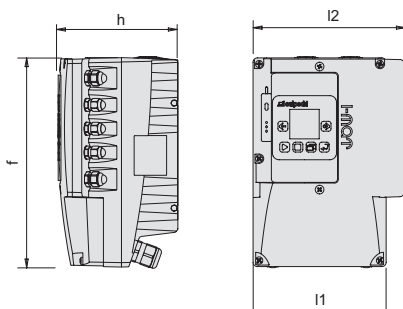
The icons on the top and below the display area explain in which way i-MAT is working and if there are some problems on the system.

The 2 scroll buttons are used to scroll the different operating parameters that i-MAT can show. At the same time you can use the 2 scroll buttons to move in the set up menu and to change the different options.

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The 4 set-up buttons are created to enter and to move on the set-up menus and to start and to stop the pump. The symbols help to understand the function of each button. With these 4 buttons and the 2 scroll buttons you can manage all the set-up and operating parameters without the use of another control panel or computers. The symbols help to make the function of each button clear. With these 4 buttons and the 2 scroll buttons you can manage all the set-up and operating parameters without the use of an other control panel or computer.

Dimensions and weights



Pump type	mm				kg
	h	f	l1	l2	
I-MAT 5,2 TT-A	165	263	170	190	5,8
I-MAT 11,2 TT-B	165	292	185	210	6,7
I-MAT 25,8 TT-C	207	336	255	281	13,5
I-MAT 65,4 TT-D	288	460	320	350	33
I-MAT 119 TT-E	336	700	424	455	59

Features

1 Control Panel

The integrated control panel gives the customer the possibility to set all the parameters of the frequency converter.

2 Main switch

The frequency converters have the possibility (optional) to install a main switch.

3 Optional modules

On the front side of the frequency converter are predisposed compartments for connecting the optional modules.

4 I/O connection area

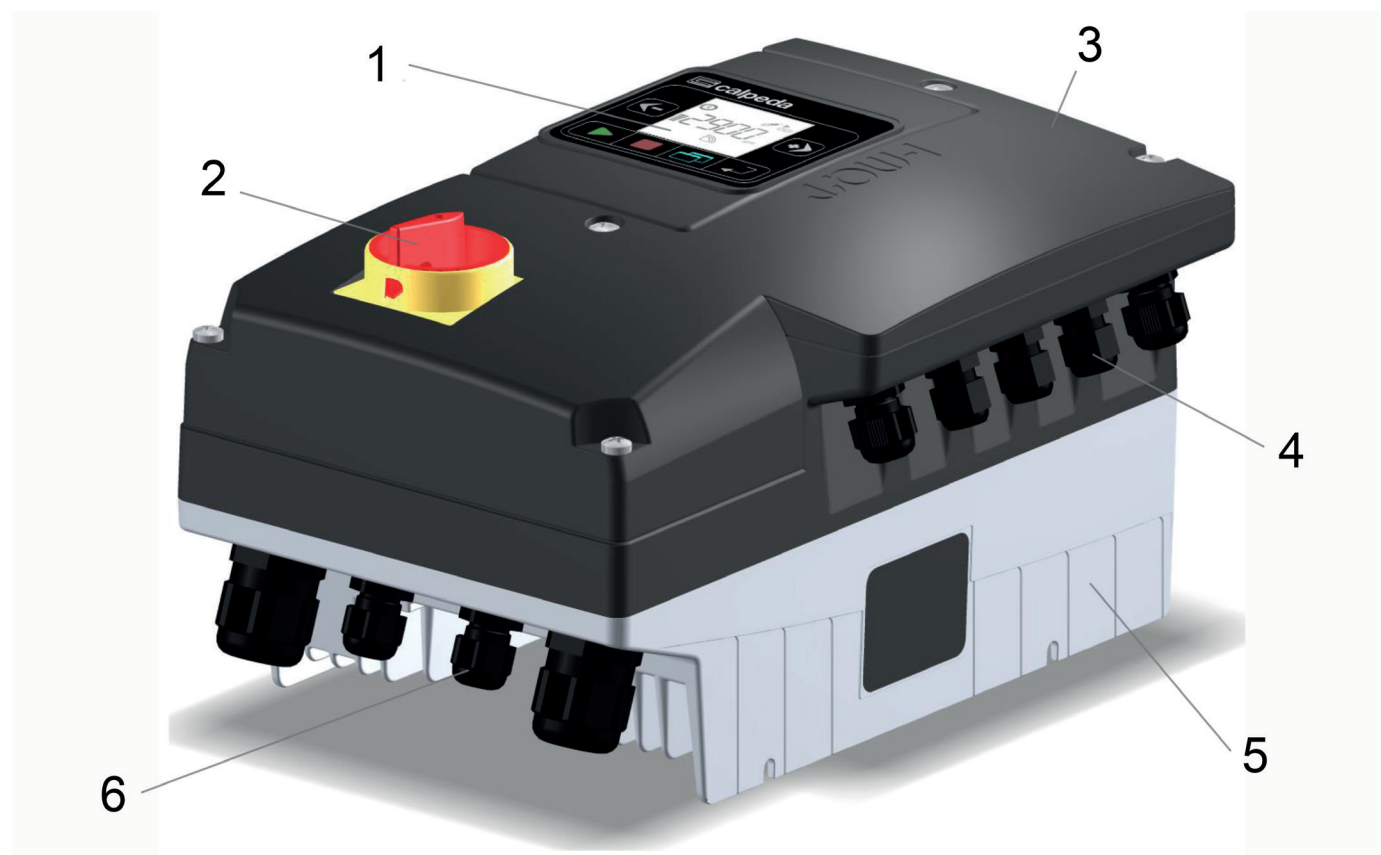
The connection area for the input/outputs is separated from the power connection area, this solution allows to connect external.

5 Power connection area

The connection area is protected by a safety cover.

6 Heatsink

The high efficiency heat sink cooled by fans guarantees a high reliability. The side connection system allows an easy connection with the motors.



Examples of installations

One pump installation scheme



MXH EI



NM EI

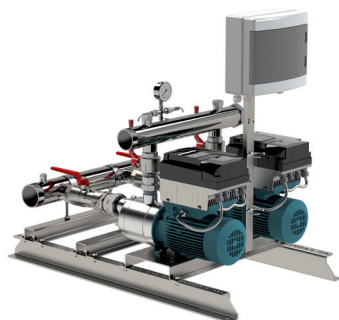


NR EI

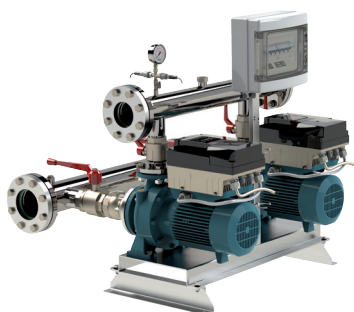


MXV EI

Two pumps installation scheme



2 MXH

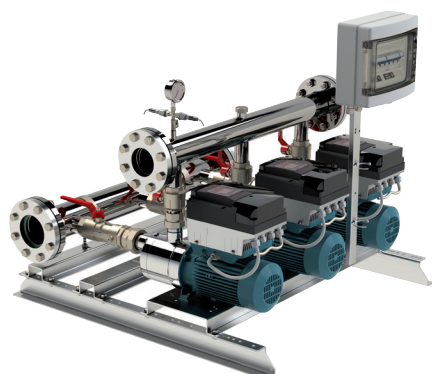


2 NM

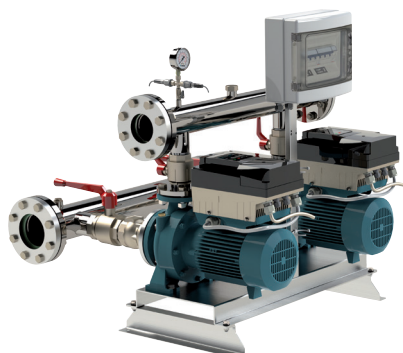


2 MXV

Three pumps installation scheme



3 MXH



3 NM



3 MXV