

## Oil/Air Cooler Units Standard series - Accessories

In many industrial applications the Oil/Air coolers require accessories, either controlling or protecting the cooler and the hydraulic system.

The accessories can be mounted on most of the models of Hydac coolers and they are available in the commonly required sizes and range of settings.

The cooler can be ordered with the required accessories already integrated; most of them are also available separately and can be added later to the cooler, generally with a mounting kit.

The catalogue is divided in three sections:

- A general description of each accessory and its function
- A more detailed part describing the technical features and how they are mounted to the coolers
- A table indicating on which coolers each accessory is possible to mount.



*Date of creation: 09.05.07*

**HYDAC SA – COOLING SYSTEMS**  
Zona Industriale 3  
Via Sceresa  
6805 Mezzovico  
Switzerland

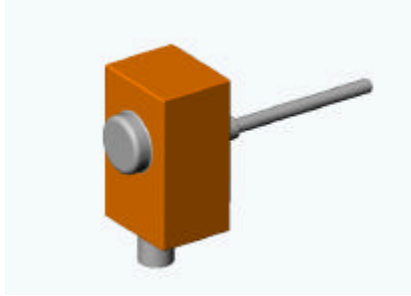
Tel. + 41 91 935 57 09  
Fax.+ 41 91 935 57 01  
[www.hydac.ch](http://www.hydac.ch)  
E-Mail: [info.coolingsystems@hydac.ch](mailto:info.coolingsystems@hydac.ch)

# 1. PRODUCT DESCRIPTIONS

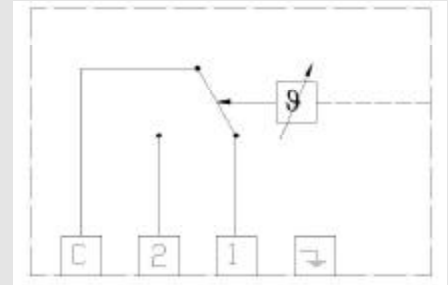
## TR/AITR - THERMOSTAT ADJUSTABLE

This unit is an electrical switch, opening or closing the circuit at the selected temperature. It can be mounted in one of the cooling element free ports, depending on the model or mounted in the oil tank of the hydraulic circuit. TR is the pure thermostat; AITR is the full kit

TR



AITR



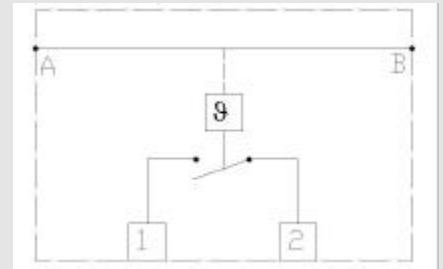
## TF/AITF – THERMOSTAT FIXED

This unit is an electrical switch, closing the circuit at a certain fixed temperature (normally open). It can be mounted in one of the cooling element free ports, depending on the model. TF is the pure thermostat; AITF is the full kit including the adaptors, depending on the model of cooler. **Now also available with integrated O-ring to ensure appropriate sealing.**

TF



AITF



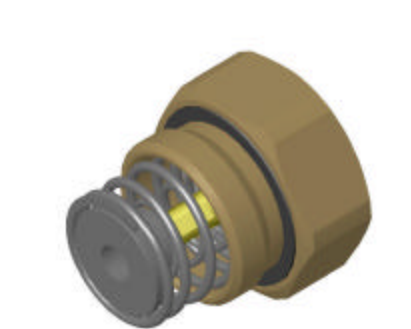
## IBT – INTEGRATED BYPASS THERMO

It lets the oil pass through the cooling element only above a certain temperature.

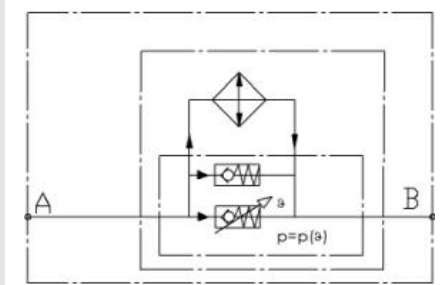
**Warning:**

**This valve is added to a cooling element in conjunction with a flow channel that is braised into the original construction. (It needs one special cooling element )**

IBT



IBT



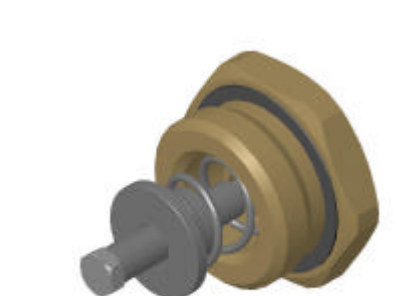
## IBP - INTEGRATED BYPASS PRESSURE

Allows the oil to bypass the cooling element when the pressure exceeds a certain value.

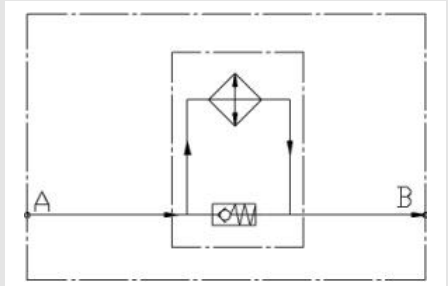
**Warning:**

**This valve is added to a cooling element in conjunction with a flow channel that is braised into the original construction. (It needs one special cooling element )**

IBP



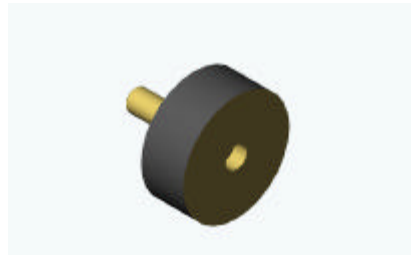
IBP



### GP – VIBRATION ABSORBERS

These are rubber elements, that are mounted between the cooler and the base; they absorb the vibrations.

### GP



### FEET

OK-ELD models do not have feet fitted as standard. These are available for this series as an options.

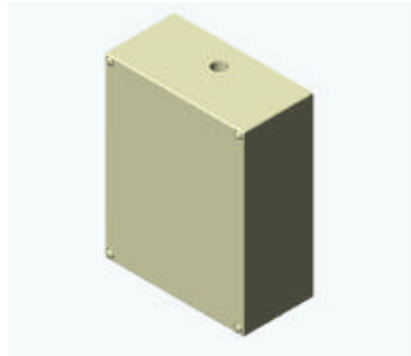
### FEET



### ELECTRICAL BOX

It controls the cooler, switching on/off the three-phase motor depending on the oil temperature (the signal has to come from an external thermostat applied to the oil circuit) and mainly prevents the motor from the overload: a thermal switch interrupts the circuit when the electrical current exceeds the selected value.

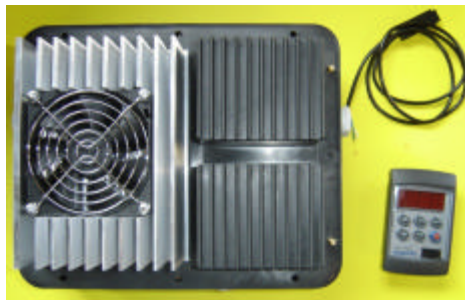
### ELECTRICAL BOX



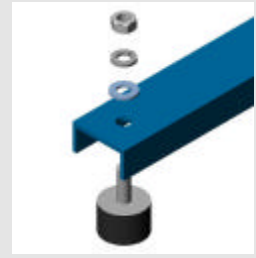
### EXTERNAL ELECTRIC INVERTER

It controls the cooler, by acting on the engine with the results of modulating the fan-speed, therefore changing air speed and modulating cooling power. The advantage is to have low noise when not full power is required. The advantage is to have a constant temperature in the outlet oil. At 50 Hz it is possible to over boost the engine at 60 Hz for small actuation time.

### EXTERNAL INVERTER BOX



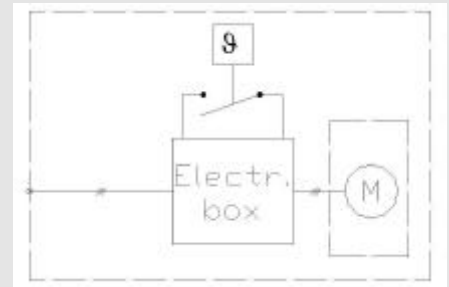
### GP - MOUNTING KIT



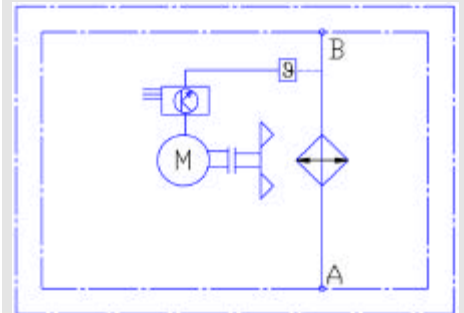
### FEET - MOUNTING KIT



### ELECTRICAL BOX - MOUNTING KIT



### DIAGRAM COOLER + EXT INVERTER



## 2. AVAILABILITY ON THE DIFFERENT COOLER TYPES

	OK EL1	OK-EL2-11	OKA EL4-11	OKAF EL4-11	SC 1-4	SCA 1-4 SCAF 1-4	OK-ELD 1-6	OK-ELH 2-5	OK-ELH 6-11	OK-P 8-12	OK-ELC 1-7
AITR		X	X	X	X	X	X	X	X*****	X	X
AITF		X			X		X	X	X		X
IBT		X	X	X	X	X	X**	X	X	X	X**
IBP		X	X	X	X	X	X**	X	X	X	X**
GP	X	X	X	X	X	X	X*	X*	X	X	X****
FEET	standard	standard	standard	standard	standard	standard	X	X	standard	standard	standard
ELECT.BOX		X	X	X	X	X					
EXT. INVERTER			X***	X***							

\*: only if feet are mounted

\*\* : not available for ELD1, ELC1

\*\*\*: only from EL-8 to EL-11

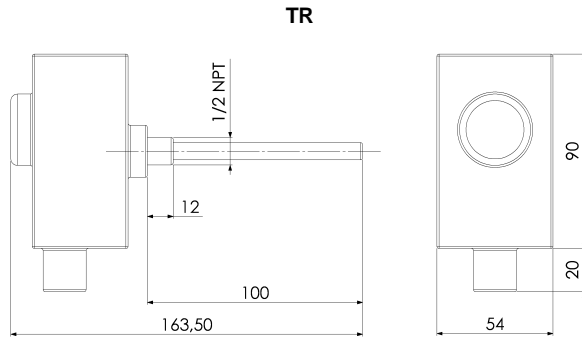
\*\*\*\*: available also for ELC0

\*\*\*\*\*: not valid for ELH8

### 3. TECHNICAL DETAILS

#### 1.1 TR/AITR

Temperature range	0-90 +/-3°C
Switching differential	4-8°C
Storage Temperature	-15°C / +55°C
Contacts	Ag 1000/1000
Contacts capacity C1/C2	10(2.5)A 250 V / 6(2.5)A 250 V
Hydraulic connection thread	M 22 x 1.5
Max. head temperature	80°C
Max. bulb temperature	125 °C
Rate of T° change	1 K/min
Degree of protection	IP 40
Tracking resistance	PTI 250(KB250)
Max. hydr. pressure	10 bar



MODEL TYPE (also order example):

**AITR / OK-EL6**

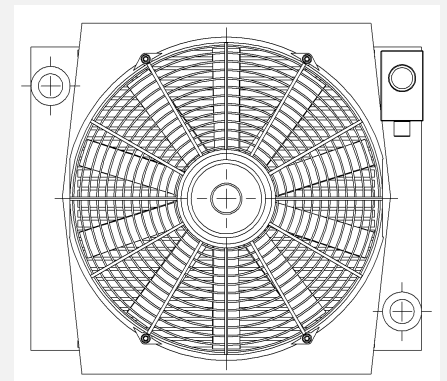
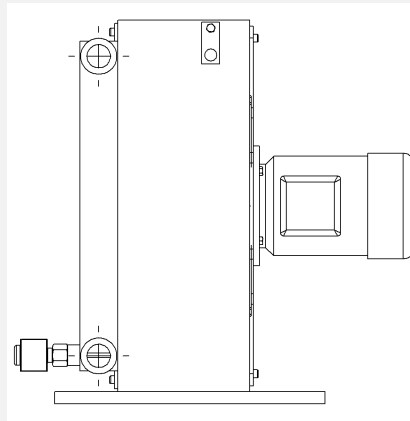
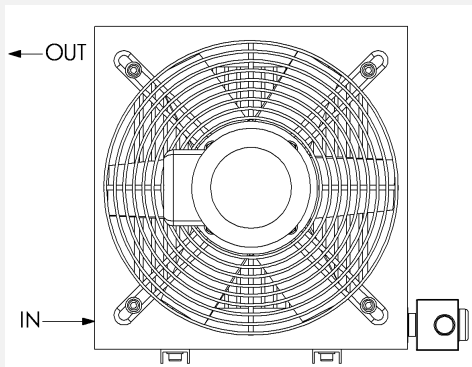
Connection block with thermostat: **AITR: full kit**  
**TR 1: only thermostat**

**Note: if ordered as kit, the type of cooler where mounted must be mentioned**

OK-EL1-5 / SC1-4

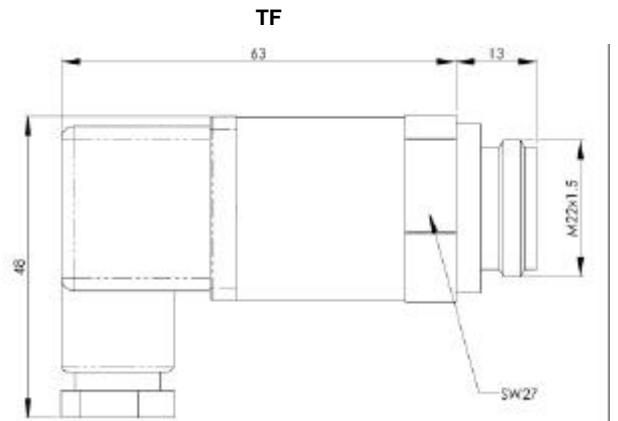
OK-EL6-11

OK-ELC1-7



#### 1.2 TF/AITF

Operating Temperature	-20°C / +120°C
Case:	brass
Contacts:	N.O. (Normally Open)
Switching differential	10°C at temperature change rate of 0.5°C/min
Tolerance	+/-3.5°C at temperature change rate of 1°C/min
Operating voltage/current	220VAC / 10A – 125 VAC / 15A – 12-24 VDC / 10A
Minimum operating current	70mA
Electrical connections	according to EN 175301-803 Type A
Hydraulic connection thread	M22X1.5 standard
Seal material	NBR
Life time	100.000 cycles
Protection degree	IP65 standard
Max. pressure	200 bar
Weight	70 g
(Option):	12 - 24VDC integrated relè max 30A



MODEL TYPE (also order example):

**AITF 50 (RE 12V) / OK-EL6**

**Note: if ordered as kit, the type of cooler where mounted must be mentioned**

Relè's Voltage  
Integrated Relè  
Switching ON temperature

Connection block with thermostat: **AITF: full kit**  
**TF: only thermostat**

**AVAILABLE RANGES**

MOUNTING POSITIONS:  
SAME OF AITR (SEE ABOVE)

Switching ON T (°C)	Switching OFF T (°C)
100	90
90	80
80	70
70	60
60	50
50	40

1.3 **IBT**

- Fixed setting temperature value
- precise temperature control
- low pressure drop
- shock resistant
- can function in any position
- max. permitted pressure: 16 bar
- maintenance-free

**Technical Data**

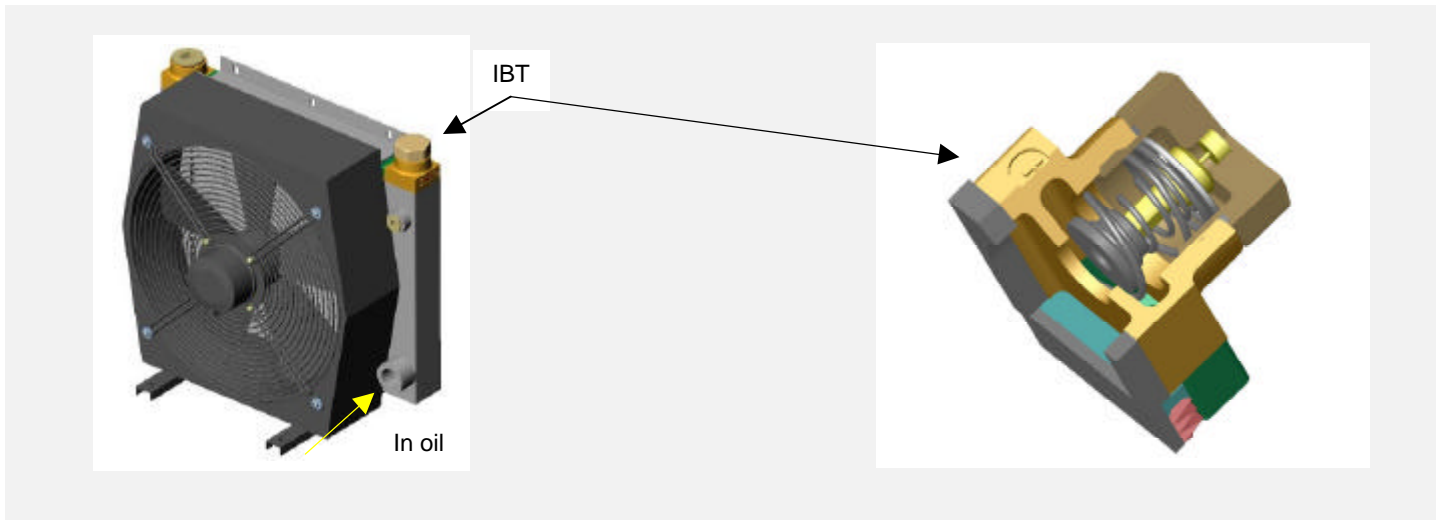
Available with closing temperatures of :  
 25 °C >> IBT25-2 (3)  
 45 °C >> IBT45-2 (3) (4) (6)  
 50 °C >> IBT50-2 (3)  
 55 °C >> IBT55-2  
 60 °C >> IBT60-2 (3)  
 65 °C >> IBT65-2

**Warning:**  
 This valve is added to a cooling element in conjunction with a flow channel that is braised into the original construction. ( It needs one special cooling element which maintains the same dimensions and fixing points )

MODEL TYPE (also order example):

**Note: the type of cooler where mounted must be mentioned**

OK-ELC4 IBT 45 / 2 (3) (4) (6) ——— Opening pressure drop: 2, 3, 4, 6 bar  
 ——— Starting Closing temperature  
 ——— IBT: thermostatic bypass valve



1.4 **IBP**

**Technical Data**

Available with opening pressure drop of :

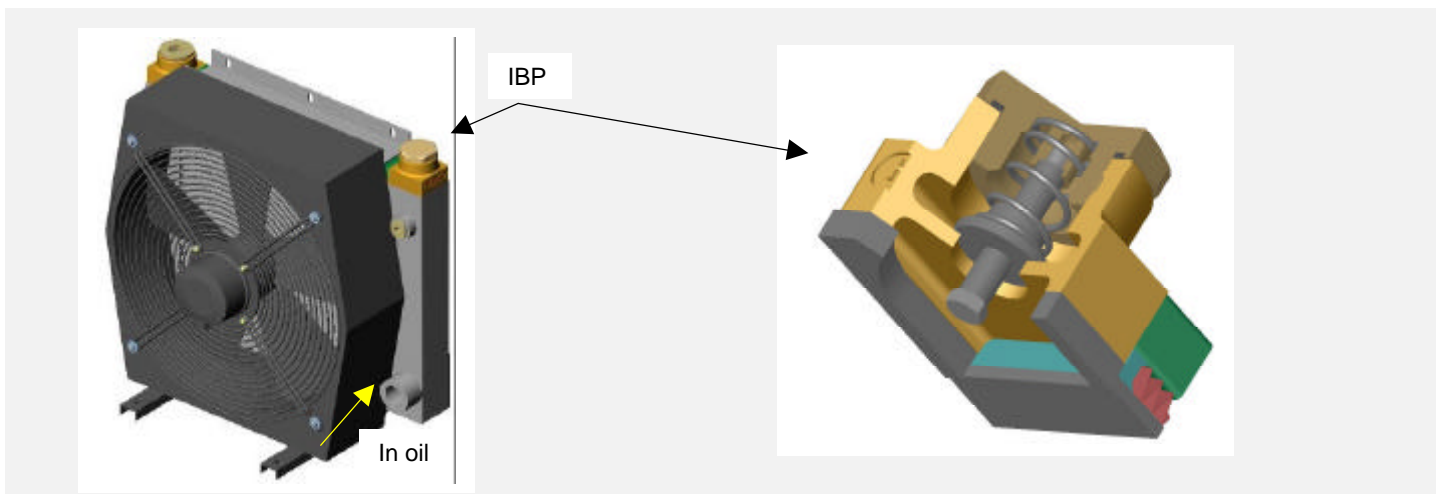
- 2 bar >> IBP2
- 3 bar >> IBP3
- 4 bar >> IBP4
- 6 bar >> IBP6

**Warning:**  
 This valve is added to a cooling element in conjunction with a flow channel that is braised into the original construction. (It needs one special cooling element which maintains the same dimensions and fixing points)

MODEL TYPE (also order example):

**Note: if ordered as kit, the type of cooler where mounted must be mentioned**

OK-ELC4/ IBP 2 (3) (4) (6) ——— Opening pressure  
 ——— Integrated bypass valve



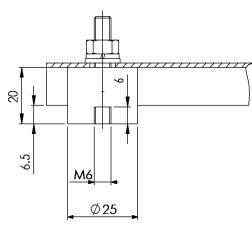
For more information contacts the technical office

1.5 GP

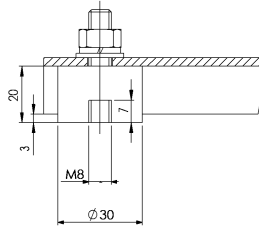
GP:

- Material: NR
- Hardness: 57+/-5 Sh

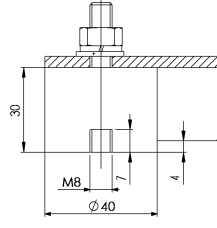
OK-EL1,2,3; SC1  
OK-ELH6; OK-ELC1-7



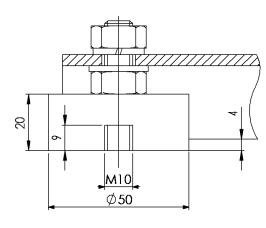
OK-EL4,5,6; SC-2,3



OK-EL8  
OK-ELH8



OK-EL9,10,11  
OK-ELH9,10,11

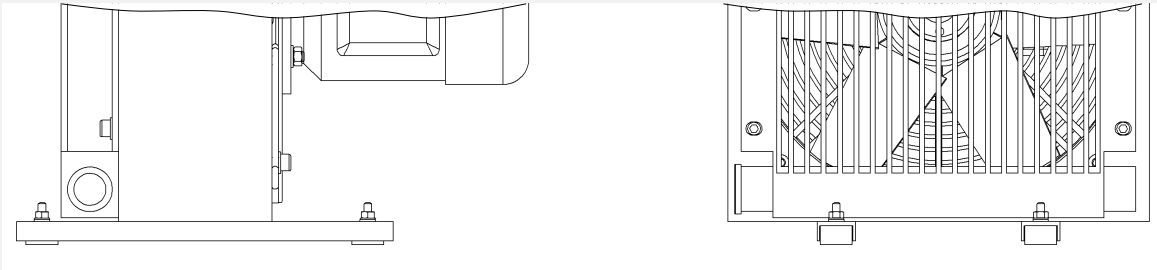


MODEL TYPE (also order example):

**Note: the type of cooler where mounted must be mentioned**

GP / OK-EL6

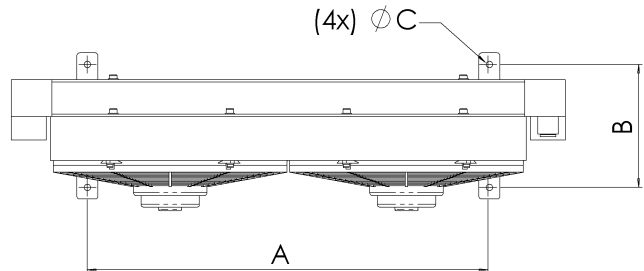
vibration absorbers



1.6 FEET

FOOT:

- The foot has to be mounted using a screw already existing in the cooler (fixing the element to the housing) plus an additional screw supplied together with the foot



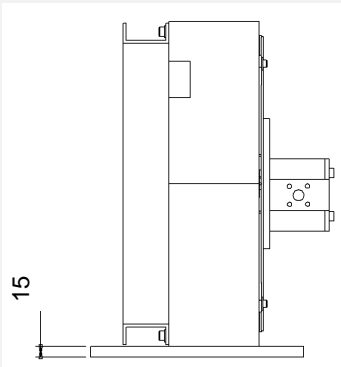
MODEL TYPE (also order example):

**Note: the type of cooler where mounted must be mentioned**

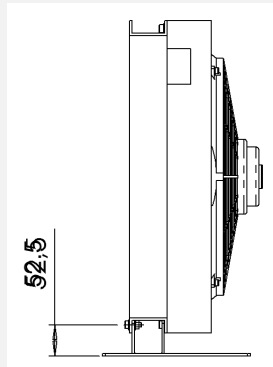
FU / OK-ELD6

pair of feet

OK-ELH2-5



OK-ELD1-6

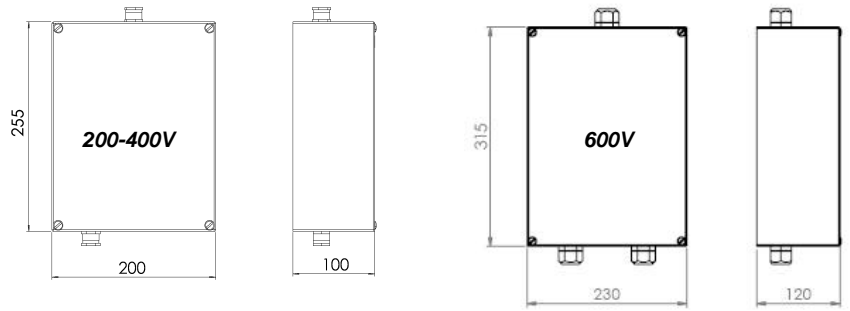


	Dim. A mm	Dim. B mm	Dim. C mm
OK-ELD1	265	210	11
OK-ELD2	249	210	11
OK-ELD3	289	210	11
OK-ELD4	389	210	11
OK-ELD4.5	342	210	9
OK-ELD5	599	210	11
OK-ELD6	689	210	11
OK-ELH2	160	255	9
OK-ELH3	240	255	9
OK-ELH4	255	255	9
OK-ELH5	255	255	9

## 1.7 ELECTRICAL BOX

### ELECTRICAL BOX:

- Solenoid starter voltages: from 200V to 600V
- Thermal switch size: from 1.0A to 10A
- With and without external Cable

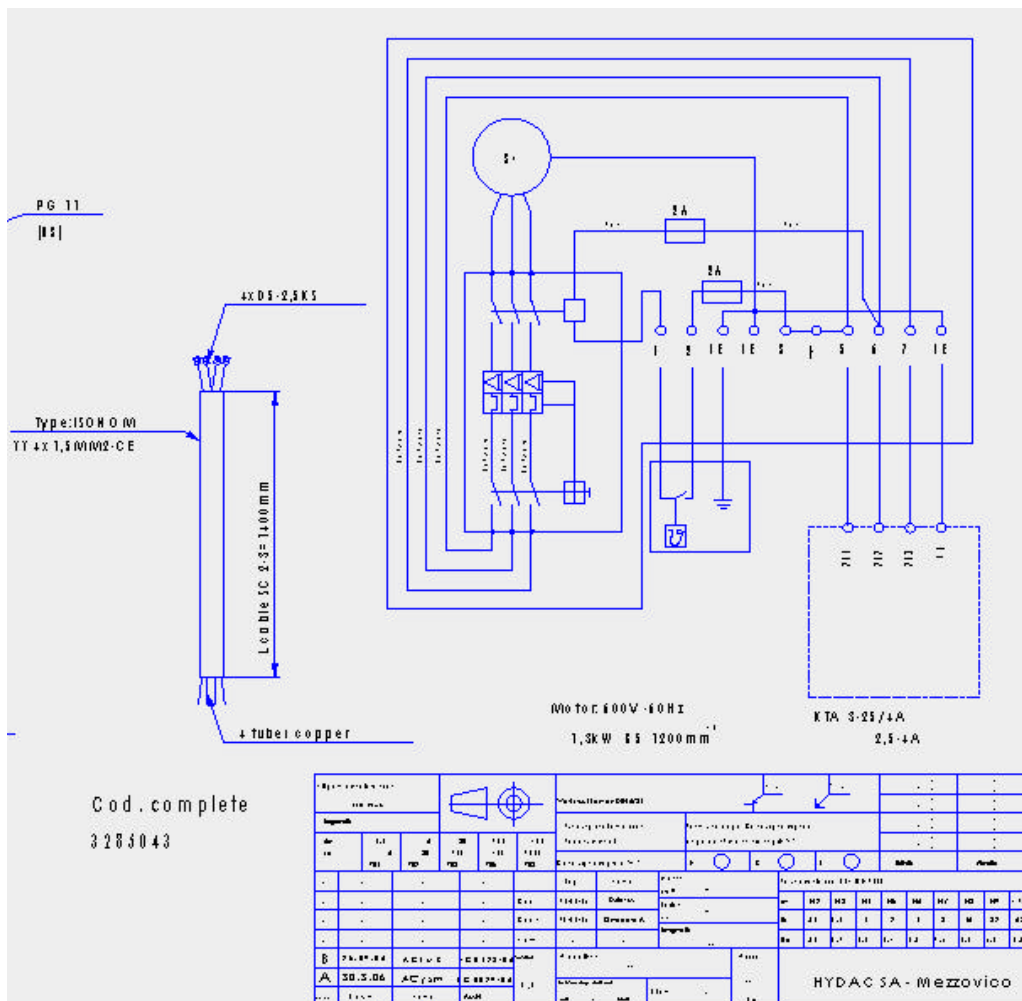
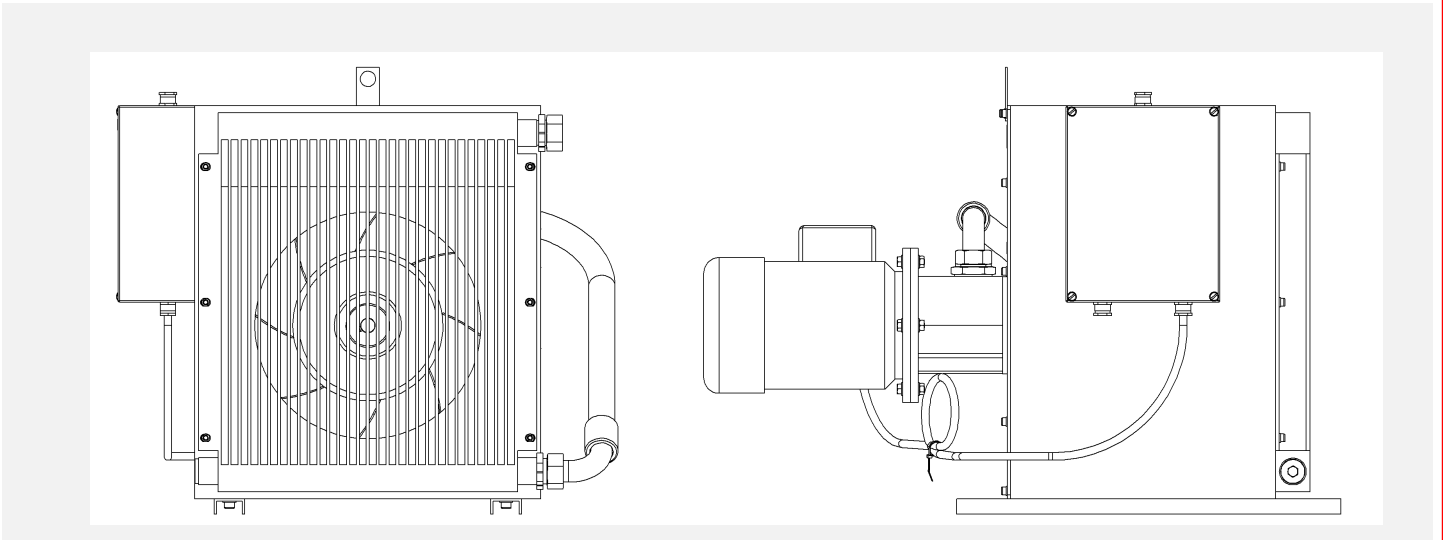


MODEL TYPE (also order example):

**EL.BOX / OK-EL6**

Electrical box

**Note: the type of cooler where mounted must be mentioned**



## 1.8 EXTERNAL ELECTRIC INVERTER

Max. Power	4 kW (possibility to add a second slave module of 4kW )
Max. Tension	440V
Cooling	independent fan mounted on the dissipaters
Protection degree	IP66
Control method	sine waves PWM
Frequency range	10 to 60 Hz
Protection features	current overload / short-circuit / phase loss / thermal protection
Operating temperature	-20 to 45 °C
Remote display	possibility of monitoring mains parameters on display

MODEL TYPE (also order example):

**INV.EXT / OK-EL8**

**Note: the type of cooler where mounted must be mentioned**

Inverter External

