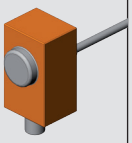
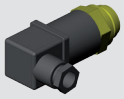
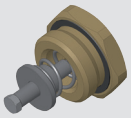
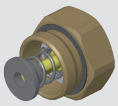
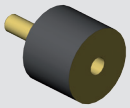
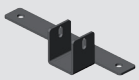
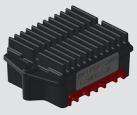
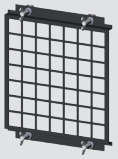
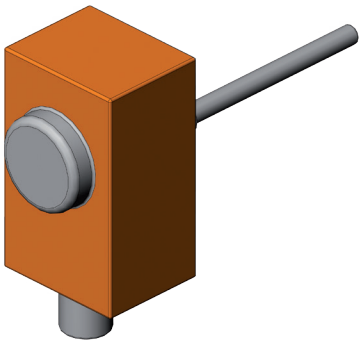
HYDAC INTERNATIONAL

Air Cooler Accessories

Cooler	Size	AITR	AITF	IBP	IBT	GP	Feet	ESC	LFG LFM LS
									
AC-LN	1	•	•			•			
	2-14	•	•	•	•	•			•
ACA-LN ACAF-LN	2-14			•	•	•			•
OK-ELC	0					•			
	1		•			•			•
	2-7	•	•	•	•	•			•
OSCA OSCAF	0					•			
	1-3					•			•
OK-ELD	0					•			
	1-1,5		•			• with feet	•	•	•
	2-6	•	•	•	•	• with feet	•	•*	•
OK-ELH	2-5	•	•	•	•	• with feet	•		•
	6-7	•	•	•	•	•			•
AC-LNH	8-14	•	•	•	•	•			•

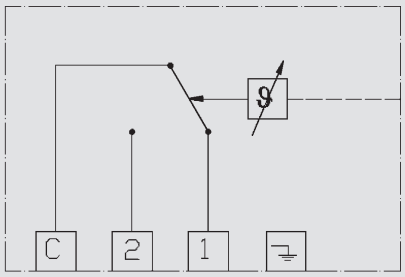
* OK-ELD 5-6: special ESC for double fan is required.

Note:
Overall dimensions could be increased due to the presence of accessories.
Please contact the technical sales department for combination of accessories.



Thermostat adjustable
TR/AITR

Symbol (AITR)



Operation Data

Temperature range	0 bis 90 °C +/- 3 °C
Switching differential	4 bis 8 °C
Storage temperature	- 15 °C / + 55 °C
Contacts ratings C1/C2	(C-1) 10(2.5)A NC/250 V
	(C-2) 6(2.5)A NO/250 V
Cable gland	M 20 x 1.5
Max. ambient temperature	80 °C
Max. bulb temperature	125 °C
Rate of temperature change	1 K/min
Degree of protection	IP 40
Max. working pressure	10 bar

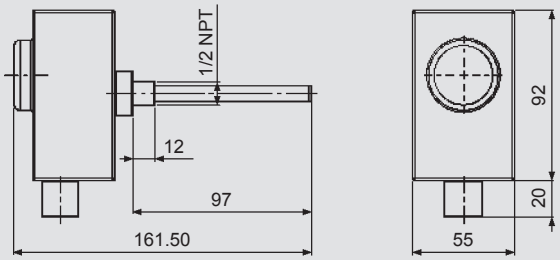
General

The TR/AITR is an electrical switch, opening or closing the circuit at the selected temperature.

TR could be mounted in the tank; AITR is mounted in one of the cooling element free ports.

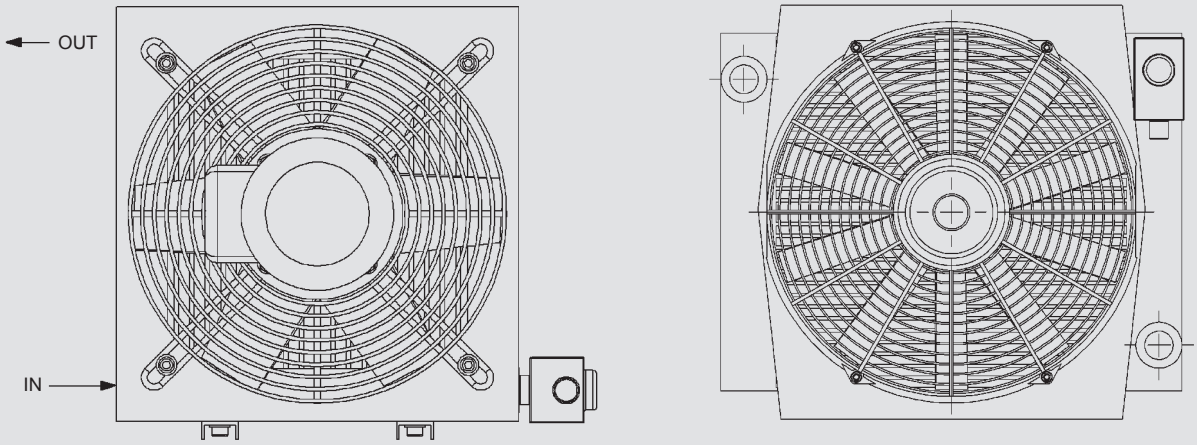
TR/AITR are supplied with a probe holder.

Dimensions



Installation

The position of the thermostat is in relation of the element design and position of ports.



Model Type

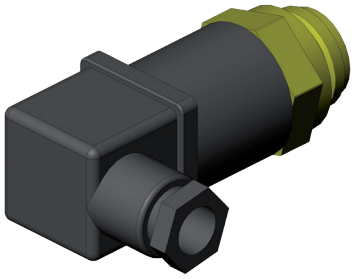
Please check cooler compatibility in the table.

as accessory: **… / AITR 30-90**

- Working temperature range
- AITR = Connection block with thermostat

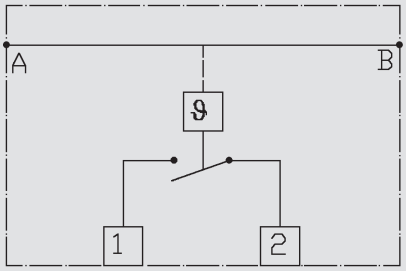
as spare part: **AITR 30-90 / …**

- Cooler / connection dimension
- Working temperature range
- AITR = Connection block with thermostat



Thermostat fixed
AITF

Symbol



General

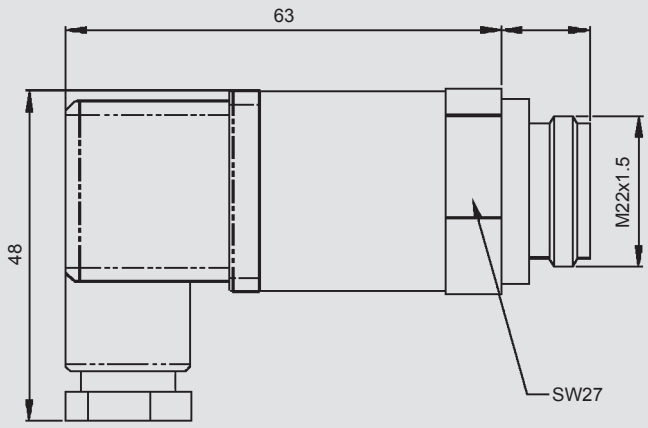
The AITF is an electrical switch, closing the circuit at a certain fixed temperature.

TF could be mounted in the tank; AITF is mounted in one of the cooling element free ports including the adaptors.

Operation Data

Case	Brass
Operating temperature	-20 °C / +120 °C
Contacts	NO (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	220 V AC / 10 A – 125 V AC / 15 A – 12-24 V DC / 2A
Electrical connections	according to DIN 43650
Hydraulic connection thread	M22X1.5 standard (1/2" BSP, 3/8" BSP on request)
Seal material	NBR
Life time	100,000 cycles
Protection degree	IP65 standard
Max. working pressure	200 bar

Dimensions



Model Type

Please check cooler compatibility in the table.

as accessory:

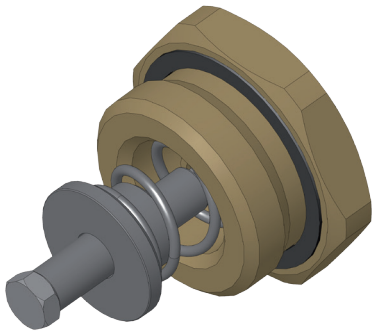
… / AITF 50

- Switch-on temperature
- AITF = Connection block with thermostat

as spare part:

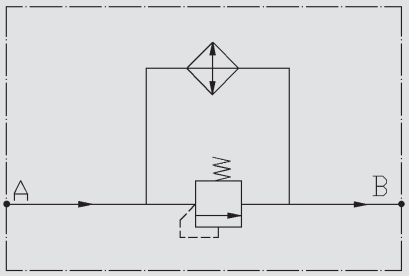
AITF 50 / …

- Cooler / connection dimension
- Switch-on temperature
- AITF = Connection block with thermostat



Integrated Pressure Bypass Valve
IBP

Symbol



General

The IBP is a valve that closes the bypass channel of the cooler. When the pressure exceeds a certain value in the cooling the IBP opens the bypass channel and allows a part of the fluid to bypass the element.

Note:

This valve requires a special cooling element with integrated bypass channel. Therefore, it cannot be retrofitted.

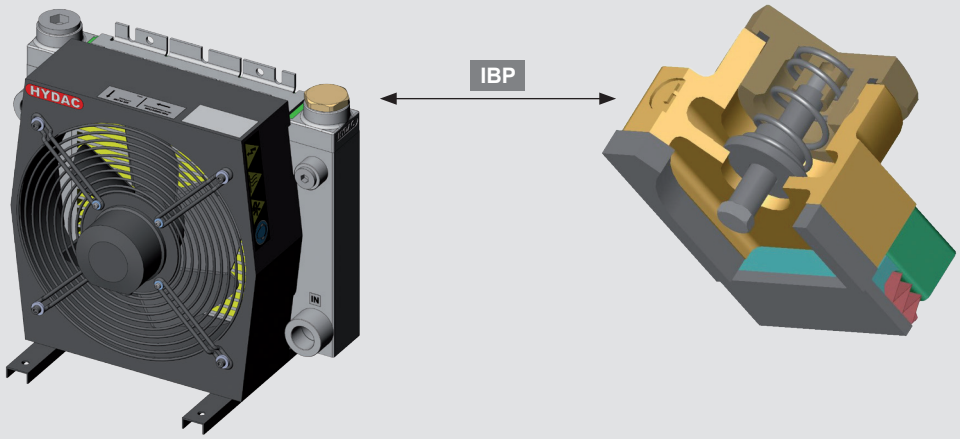
Operation Data

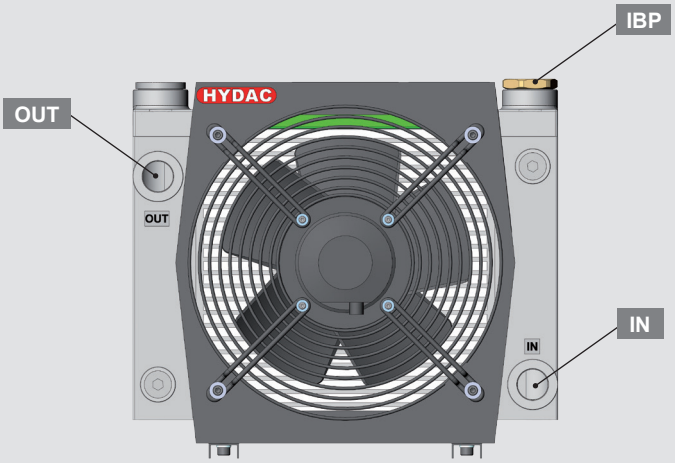
- Low pressure drop
- Works in any position
- Maintenance-free
- Max. working pressure: 16 bar

IBP version	Available opening pressure
IBP2	2 bar
IBP3	3 bar
IBP4	4 bar
IBP6	6 bar

Installation

Inlet port is always placed on the tank where the IBP is assembled.





Model Type

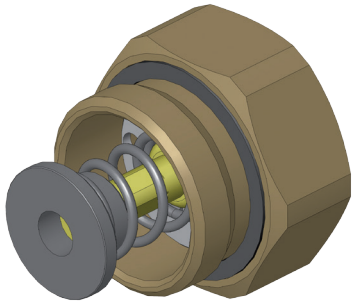
Please check cooler compatibility in the table.

as accessory: **… / IBP 2**

- 2 = Opening pressure (see table of IBP versions)
- IBP = Integrated bypass valve

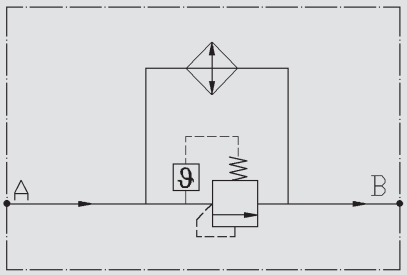
as spare part: **IBP 2**

- 2 = Opening pressure (see table of IBP versions)
- IBP = Integrated bypass valve



Integrated Temperature Bypass Valve
IBT

Symbol



General

The IBT leaves the bypass channel open so that a part of the fluid bypasses the cooling element. Only when the fluid temperature reaches the required value, the IBT closes the bypass channel and the fluid is cooled down. So, a too low temperature of the fluid can be avoided i. e. at cold starts.

Note:

This valve requires a special cooling element with integrated bypass channel. Therefore, it cannot be retrofitted.

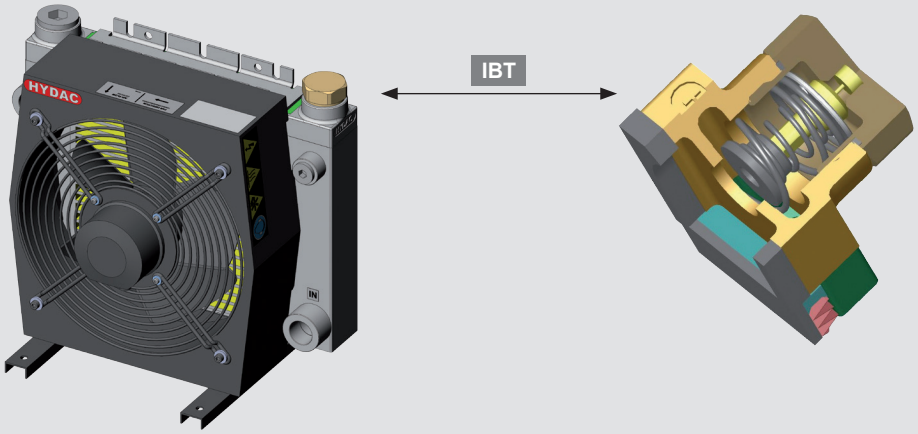
Operation Data

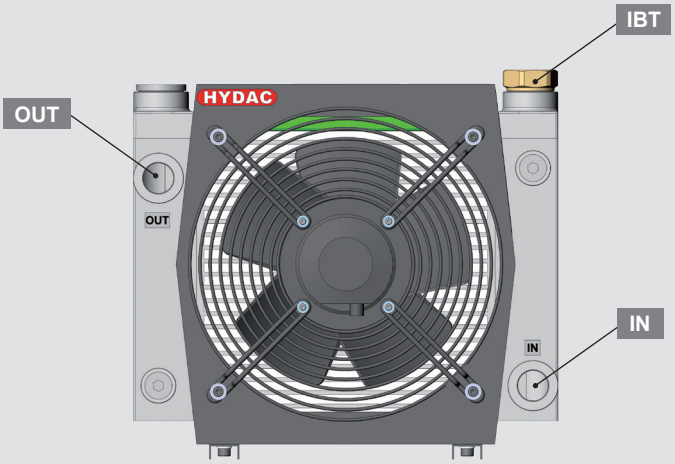
- Fixed setting temperature value
- Low pressure drop
- Works in any position
- Maintenance-free

IBT version	Available closing temperatures	Available opening pressure
IBT 25-x	25 °C	x = 2/3 bar
IBT 45-x	45 °C	x = 2/3/4/6 bar
IBT 50-x	50 °C	x = 2/3 bar
IBT 55-2	55 °C	2 bar
IBT 60-x	60 °C	x = 2 or 3 bar
IBT 65-2	65 °C	2 bar
IBT 75-2	75 °C	2 bar
IBT 80-2	80 °C	2 bar

Installation

Inlet port is always placed on the tank where the IBT is assembled.





Model Type

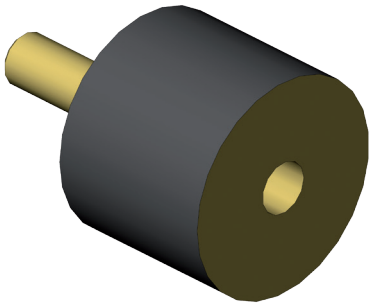
Please check cooler compatibility in the table.

as accessory: **… / IBT 45 - 2**

- 2 = Opening pressure: 2, 3, 4 or 6 bar
- 45 = Temperature at which IBT closes the bypass (see table of IBT versions)
- IBT = thermostatic bypass valve

as spare part: **IBT 45 - 2**

- 2 = Opening pressure: 2, 3, 4 or 6 bar
- 45 = Temperature at which IBT closes the bypass (see table of IBT versions)
- IBT = thermostatic bypass valve



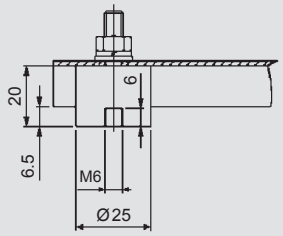
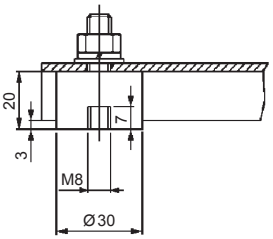
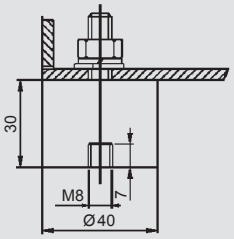
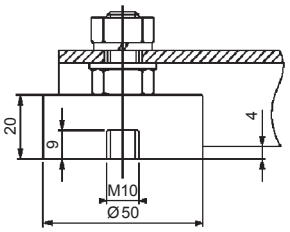
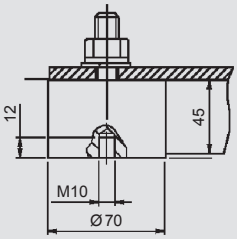
Vibration Absorbers
GP

General

GP are rubber elements that are mounted between the cooler and the ground to absorb vibrations.

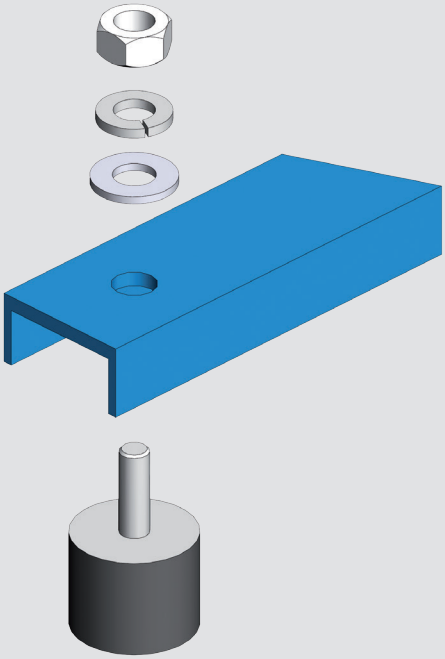
Operation Data

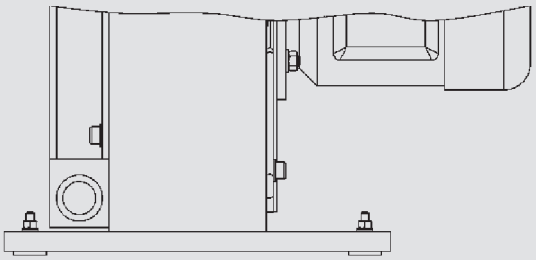
- Material: NR
- Hardness: 57 +/- 5 Sh

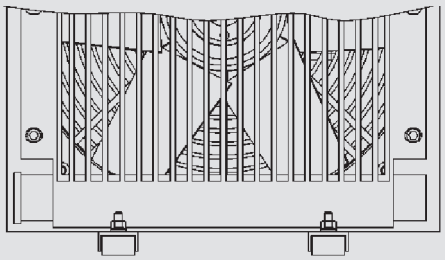
Cooler type	Dimensions
AC-LN 1-3 ACA-LN 2-3	
OK-ELC1-7	
OK-ELH 6 AC-LNH 8	
AC-LN 4-8 ACA-LN 4-6	
OSCA 1-3	
OK-ELH 7 AC-LNH 9	
ACA-LN 7-11	
AC-LN 9-11	
AC-LNH 10-11	
AC-LN 12-14	

Mounting

GP Mounting Kit







Model Type

Please check cooler compatibility in the table.

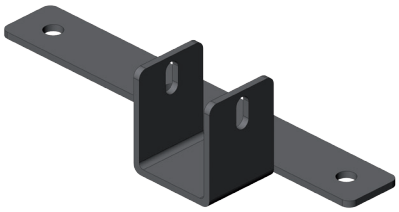
as accessory: **… / GP**

GP = Vibration absorber

as spare part: **GP (AC-LN ...)**

Cooler / connection dimension

GP = Vibration absorber



Feet

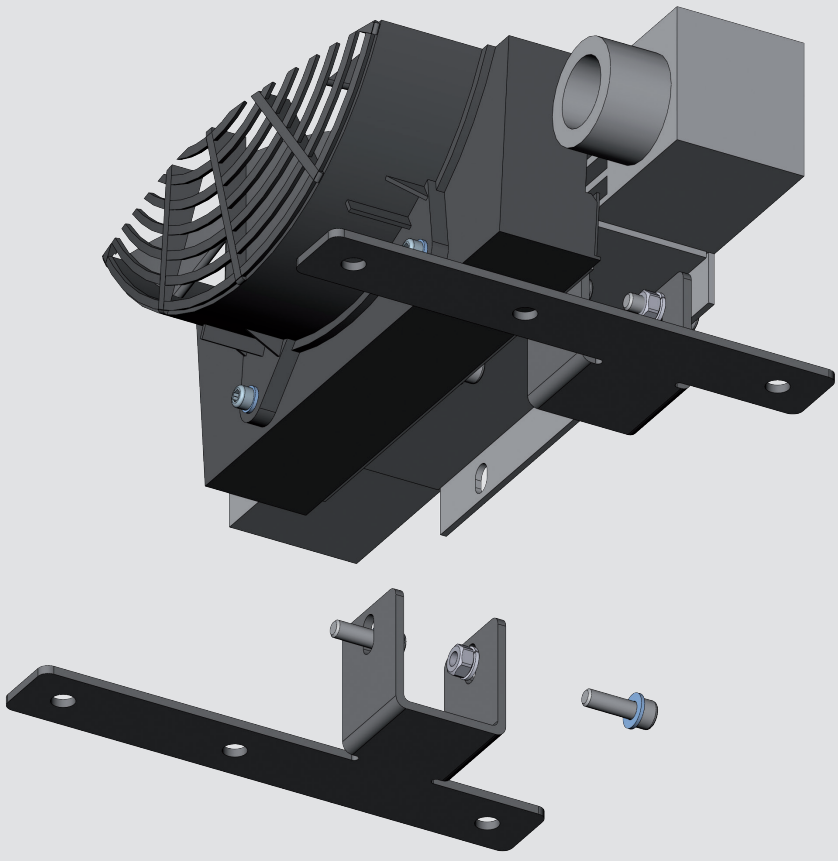
General

OK-ELD and OK-ELH models are not equipped with feet as standard. For these series feet are optional available.

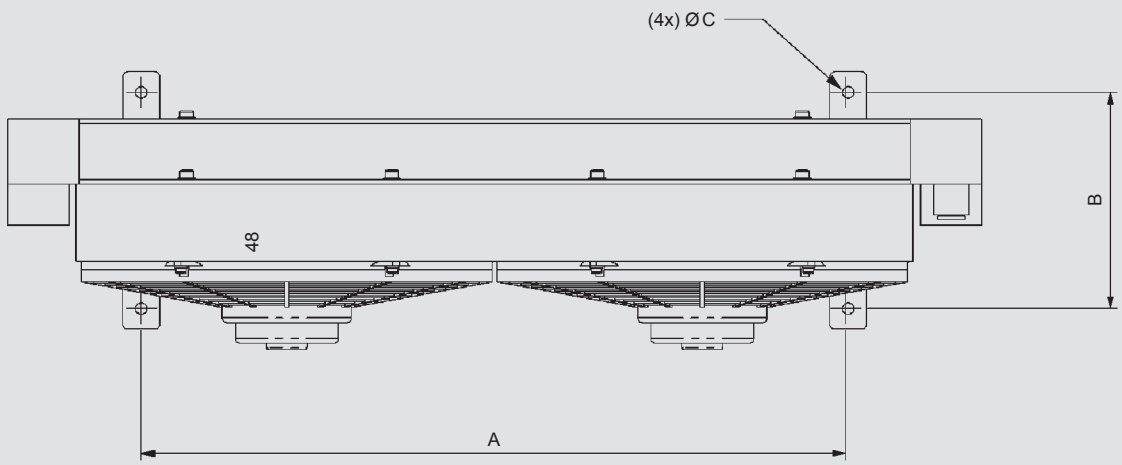
Mounting

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 with the foot.

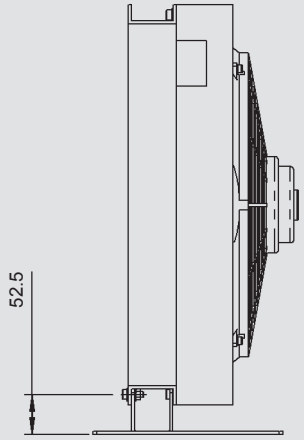
Feet Mounting Kit



Dimensions

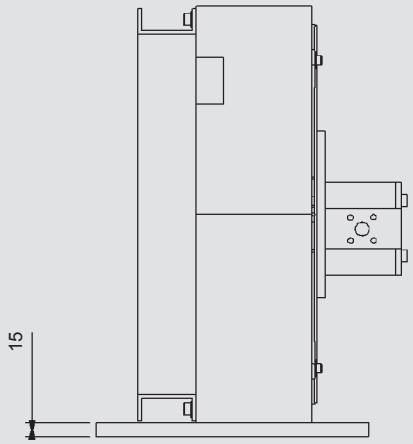


OK-ELD 1-6



[mm]	A	B	C
OK-ELD 1	265	210	11
OK-ELD 2	249	210	11
OK-ELD 3	289	210	11
OK-ELD 4	389	210	11
OK-ELD 4.5	342	210	9
OK-ELD 5	599	210	11
OK-ELD 6	689	210	11

OK-ELH 2-5



[mm]	A	B	C
OK-ELH 2	160	255	9
OK-ELH 3	240	255	9
OK-ELH 4	255	255	9
OK-ELH 5	255	255	9

Model Type

Please check cooler compatibility in the table.

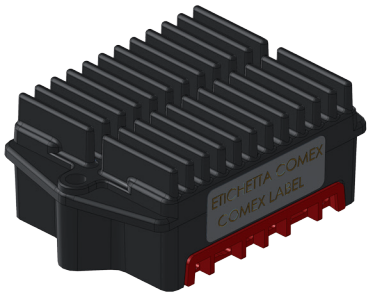
as accessory: **… / FU**

FU = Feet

as spare part: **FU (OK-ELD …)**

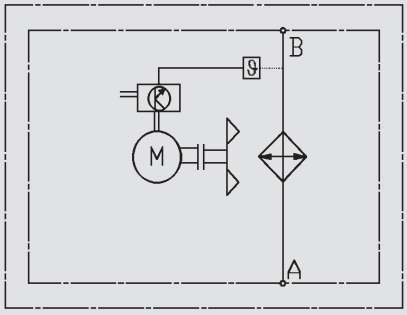
Cooler / dimensions

FU = Feet



Electronic Speed Control
ESC

Symbol



General

The ESC for DC coolers (OK-ELD series) controls the fan speed depending on the fluid temperature.

- Saves electric consumption
- Constant fluid temperature at the outlet
- Useful for multi-fan coolers
- Optional: Reverse function for heat exchanger cleaning

Operation Data

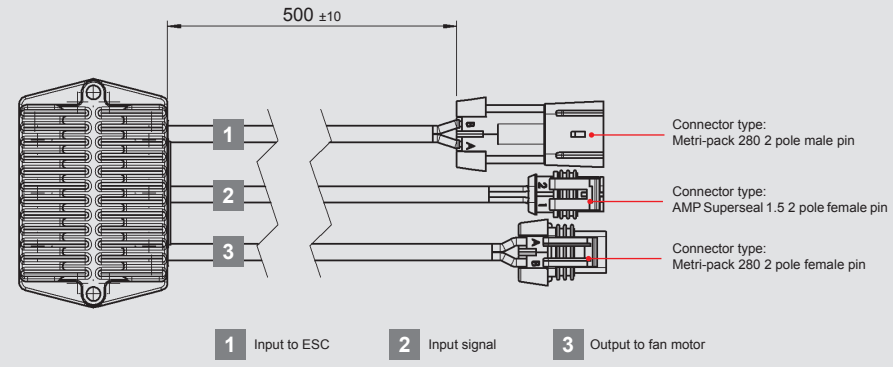
Operating temperature	-20 °C / +85 °C
Storage temperature	-40 °C / +95 °C
Operating voltage	12 V DC or 24 V DC
Current limit	35 A
Max. operating current in continuous working	30 A for standard models
	25 A for reverse rotation models
Life time	200,000 cycles
Protection class	IP67
Electromagnetic compatibility	Conform to: 2004/108/EC 95/54/EC EN61000-6-3
Protection features	Electronics protected against load dump, reverse polarity, fan block, Electro Static Discharge (ESD). (A fuse is necessary and must be suitable for the input current of the fan used.)
Fan control options	1) Thermostat ON-OFF 2) NTC (temperature sensors) 3) 0-10 V signal 4) PWM
Additional functions	Soft start included with starting current not over +10 % of the nominal current
Control method	Control type PWM
Optional	Reverse rotation, also in working cycles (see options)
Control option	From 2 to more fan in parallel (max 35 A total)

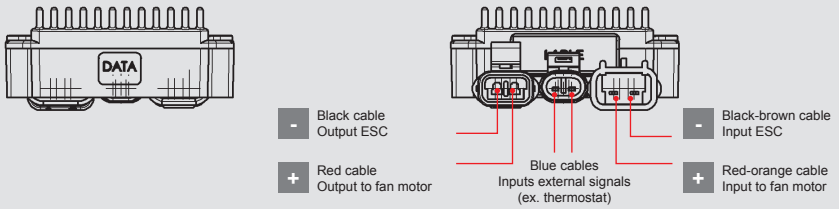
Options

STANDARD rotation:
ESC controls fan speed proportionally with the fluid temperature.

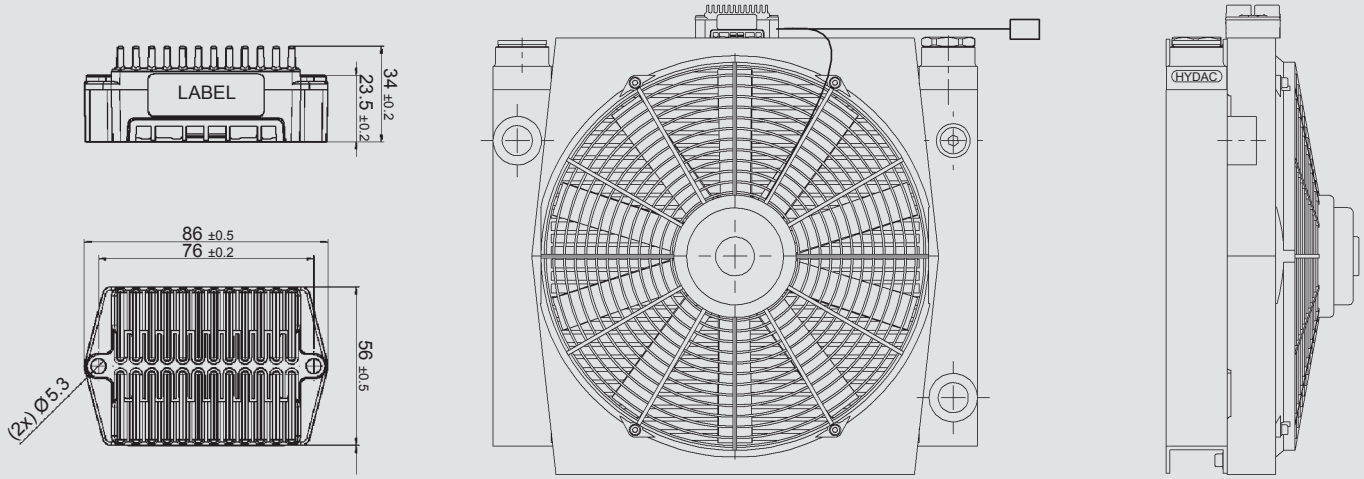
REVERSE rotation 1 (Rev1):
Standard + reverse rotation
The reverse rotation starts as soon as the fan stops the normal rotation due to low temperature.

REVERSE rotation 2 (Rev 2):
Standard + reverse rotation (cycle)
The reverse rotation starts in a preset cycle, independent of the fluid temperature.





Mounting



Model Type

Please check cooler compatibility in the table.

as accessory:

… / ESC 40-60 (REV1 or REV2)

- ESC option
- Operating temperature range
- ESC = Electronic Speed Control

as spare part:

ESC 40-60 (REV1 or REV2)

- ESC option
- Operating temperature range
- ESC = Electronic Speed Control

For information about temperature settings and cycles please contact technical sales department.

Element Protection Grid
LFG/LFM/LS

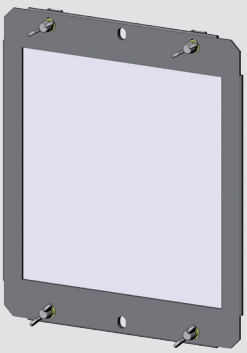
General

Protective grid mounted in front of the element to protect the element from stones, sand, leaves, dust and any other external agent that can clog the air side of element.

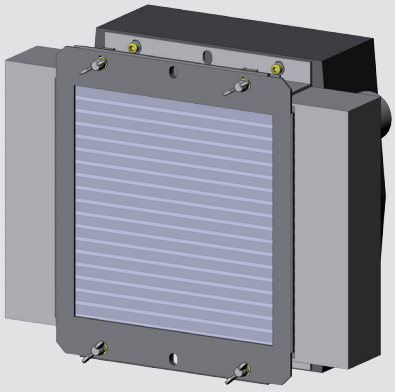
Only for sucking version of coolers available.

LFG

Protective grid with a metal mesh to filter the air and prevent element clogging from sand, leaves, dust and small stones.



Mounting Kit

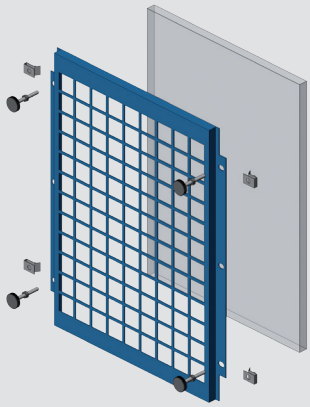


LFM

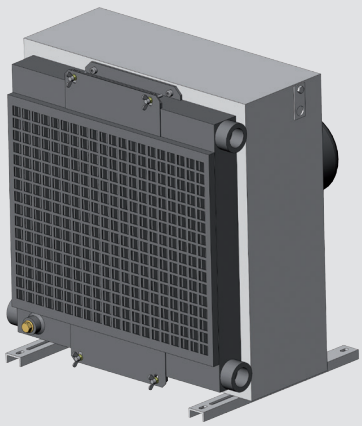
Protective grid equipped with filter element to filter dirty air across air side of the element.

The filter element can be exchanged easily.

Used to filter air from small particles of sand, dust and can offer protection against stones.

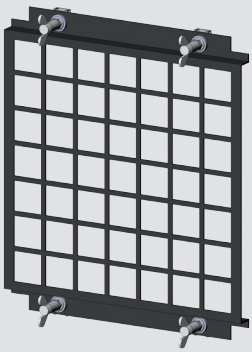


Mounting Kit

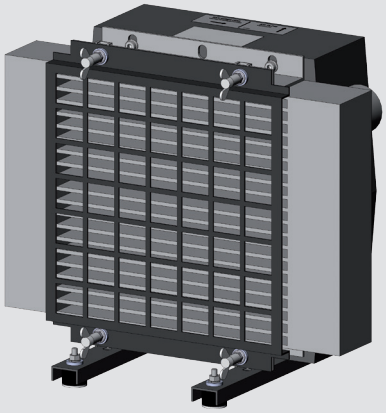


LS

Protective grid against stones.



Mounting Kit



Model Type

Please check cooler compatibility in the table.

as accessory: **… / LFG**

- LFM = Air filter mat
- LFG = Air filter grid
- LS = Protection grid against stones

as spare part: **LFG (AC-LN …)**

- Cooler
- LFM = Air filter mat
- LFG = Air filter grid
- LS = Protection grid against stones

Note

The information in this brochure relates to the operating conditions.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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