

HYDAC INTERNATIONAL

Cooling Systems Fluid Cooling System

AFCS - 10/1.0/W...

1. DESCRIPTION

1.1. APPLICATIONS

Cooling circuits, such as:

- Cooling of large hydraulic circuits with heat exchanger
- Cooling of AC main drives
- Cooling of motor spindles on finishing machines
- Cooling of presses
- Cooling of dual-circuit systems

1.2. CONSTRUCTION

The HYDAC fluid cooling system AFCS consists of an axial fan, tank, submersible pump and heat exchanger.

The submersible pump built into the tank pumps the cooling fluid through the heat exchanger.

The axial fan provides the necessary air flow through the heat exchanger.

- The AFCS is a low-noise unit;
- The electrical control box (optional) allows the AFCS to be self-monitoring. A display indicates the operating condition and actuates an alarm if there is a fault:
 - electrical level monitoring of the cooling fluid in the tank;
 - overload function provided by motor protection switch;
 - fan switches on/off in response to temperature sensor;
 - remote control by wire permits unit to be installed in sites which are difficult to access.



2. TECHNICAL DETAILS

2.1. COOLING CAPACITY AND FEED FLOW OF PUMP (SEE GRAPHS)

2.2. PERMISSIBLE FLUID

2.2.1 **Preferred fluid:**

Mains water with 30-40% GLYSANTIN G48 PROTECT PLUS (BASF)

2.2.2 **Other permissible coolants:**

Other coolants on request!

2.3. PERMISSIBLE TEMPERATURES

2.3.1 **Temperature of fluid**

max. 60 °C

2.3.2 **Ambient temperature**

-15 °C to +40 °C

2.4. INSTALLATION POSITION

standing upright on feet; fan at top, tank below

2.5. NOISE LEVEL MEASURED TO DIN 45635 PART 1

AFCS-10: 64 dB(A) 50Hz

2.6. DIRECTION OF ROTATION

Pump:
anticlockwise when looking at motor fan
Fan:
clockwise when looking at fan wheel

2.7. TANK SIZE

Max. 50l

Min. 22l

2.8. WEIGHT

225 kg (without coolant)

2.9. ELECTRICAL CONNECTION

provided by customer: 10 pole connector e.g. HARTING housing 09300101541 and socket insert 09330102716 or terminal box (optional)

2.10. HYDRAULIC CONNECTIONS

Feed flow: G 1"

Return flow: G 1"

Drain outlet: G 3/4"

Do not reduce pipe cross-section predetermined by the threaded connection. (see 2.12)

2.11. ELECTRICAL DATA

Rated voltage range:

3 x 220 - 240V /

3 x 380 - 415V, 50Hz (Europe)

3 x 208 - 230V/

3 x 460 - 480V, 60Hz (USA)

3 x 200 - 230V/

3 x 346 - 400V, 50/60Hz (Japan)

Voltage tolerances to

EN 60034-1 ±5%

Rated current of motor

See rating plate of electric motor

Motor output

See rating plate of electric motor

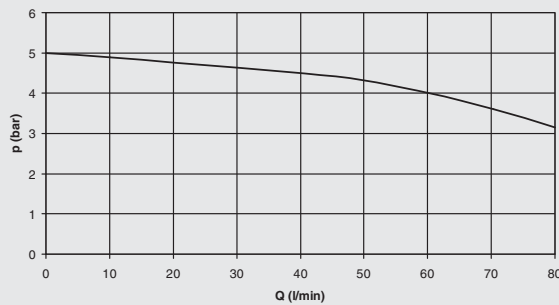
2.12. PUMP FLOW RATE GRAPHS

The flow rate of the pump depends on the system characteristics (pipe cross-sections, pipe lengths, threaded connections).

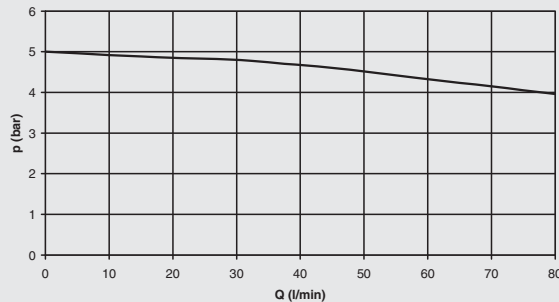
Generally, the following applies:

The smaller the pressure losses in the system, the greater the flow rate and therefore the greater the cooling capacity.

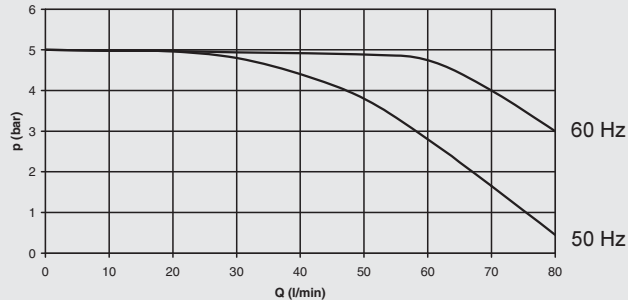
400 V - 50 Hz



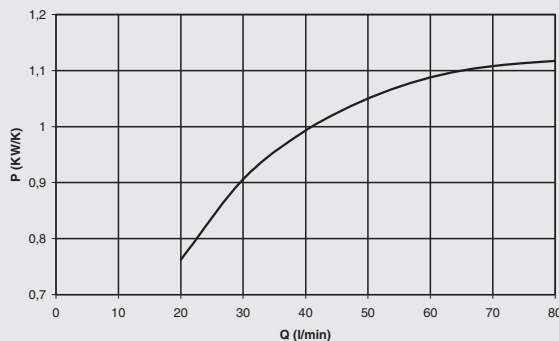
480 V - 60 Hz



200 V - 50/60 Hz



2.13. COOLING CAPACITY GRAPH



3. MODEL CODE

(also order example)

AFCS - 10 / 1 . 0 / W / TP / 400-50 / 1 / 0

Air Fluid Cooling System _____
 AFCS

Nominal size _____
 10

Type code _____

Modification number _____

Medium _____
 W (see 2.2.)

Submersible pump _____
 For flow rate, see graph

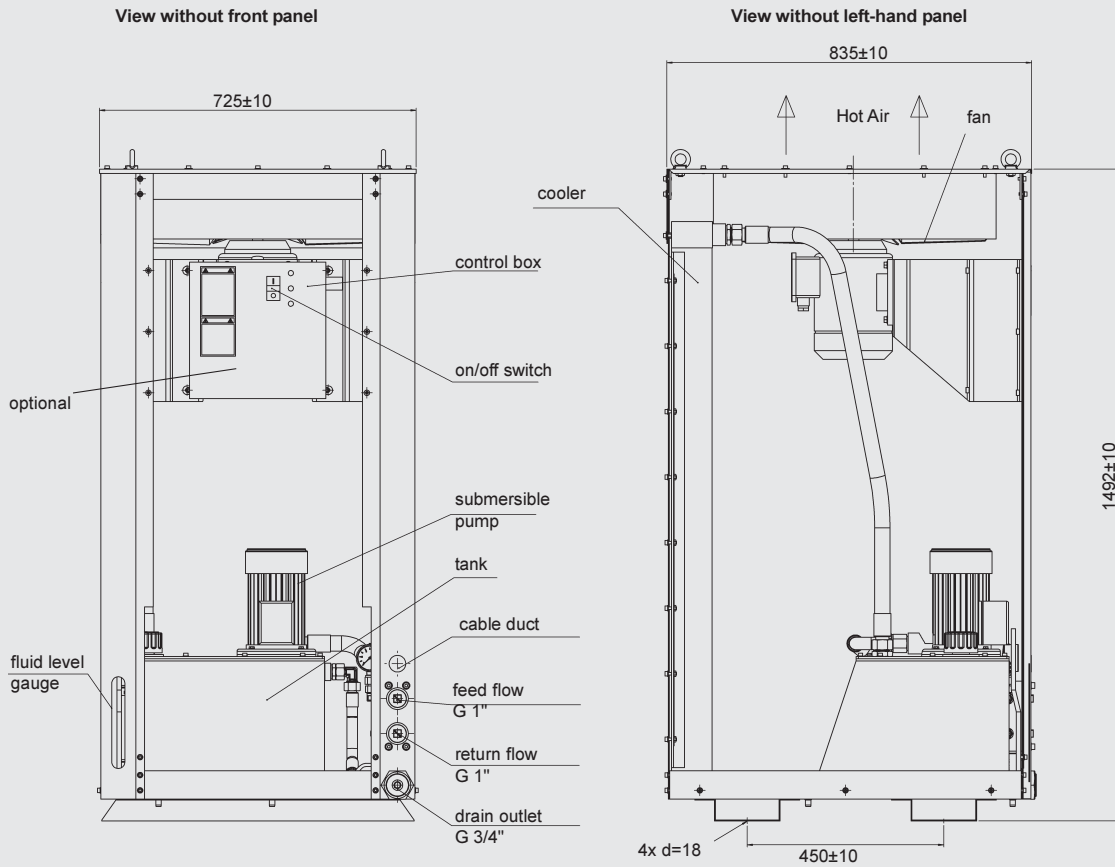
Motor voltage (Standard) _____
 3 x 220 - 240V / 3 x 380 - 415V, 50HZ (Europe)
 3 x 208 - 230V / 3 x 460 - 480V, 60HZ (USA)
 3 x 200 - 230V / 3 x 346 - 400V, 50/60HZ (Japan)

Paint _____
 1 =RAL 7035 (pale grey, standard)

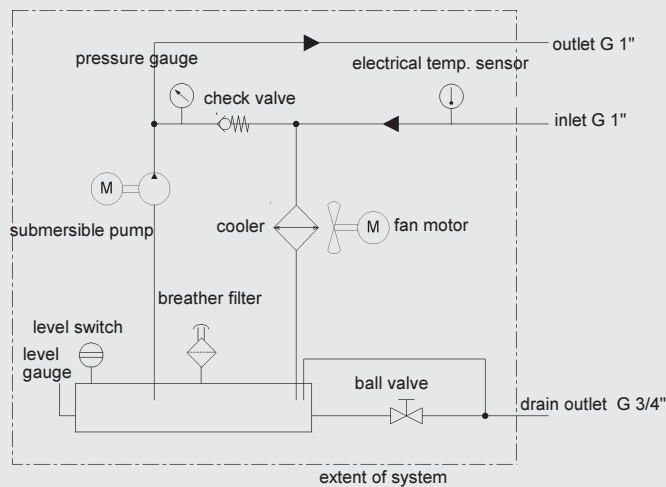
Accessories (see point 6.) _____
 0 = standard (without control box)
 1 = control box and remote control by wire

4. DIMENSIONS

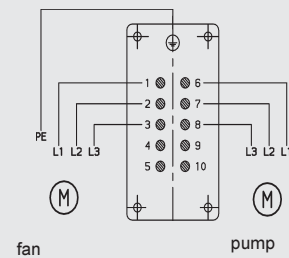
Approx. 725 mm x 835mm x 1492mm



5. CIRCUIT DIAGRAM



6. ELECTRICAL PIN CONNECTIONS



7. ACCESSORIES

7.1. CONTROL BOX WITH REMOTE CONTROL BY WIRE:

- Display with on / off switch indicates operating condition
- Electrical fluid level switch monitors the coolant level in the tank
- Temperature switch switches fan on / off
- Motor protection provided by motor protection switch
- Remote control by wire permits AFCS to be installed in sites which are difficult to access

8. NOTE

The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.