

# Dry Coolers. General Information



Manufactured in accordance with TU 4864-027-64600223-13

Dry Cooler is an extended surface heat exchanger equipped with fans cooling coolant. Coolant is cooled by air flow supplied by fans. Dry cooler is designed for outdoor installation. Water or water-glycol solution is used as a coolant.



Example of reference designation:

Series

Front opening length; Explosion-proof enclosure; Number of heat-exchanging sections;

Dry coolers are denoted as follows:

ГРАС n B. XXX x YYY. D.N.M.P.1.1 (Q) - УУУ

#### «ГРАС1.1000x1600.63.2.4.4.2.1(52)-У1 ТУ4864-027-64600223-13»

Climatic version;

1 - standard; 2 - reversal;

1 - vertically, 2 - horizontally,

2, 4, 6, 8, 10, 12, 14, 16, or 18;

Power (rated); Design variant:

Operating position:

3 - v-shaped;

3, 4, 6, 8, 10, or 12; Number of fans per section:

1, 2, 3, 4, 6; Fan diameter; Front opening width;

One section; opening size: 1000x1600; fan diameter: 630mm; x2 fans; x4 rows; x4ways; horizontal version; standard design; power: 52kW; climatic version: V1.

Character "B" is added to the reference designation after the first digit in case of explosion-proof enclosure. Example of explosion-proof FPAC (GRAS) reference designation:

#### «ГРАС1В.1000x1600.63.2.4.4.2.1(52)-У1 ТУ4864-027-64600223-13»

Character "K" is added to the reference designation after the first digit in case of corrosion-proof version.

Example of corrosion-proof **FPAC** (GRAS) reference designation:

«ГРАС1К.1000x1600.63.2.4.4.2.1(52)-У1 ТУ4864-027-64600223-13»

### **Advantages**

Dry cooler implementation has a variety of advantages:

- Resource saving (water and energy)
- Low-cost maintenance
- Easy operation in any year season
- Easy to install and operate
- Short return on investment
- Long-term service.

## **Main Characteristics**

Dimensions: 1000x800 to 2000x3000 mm. Air handling capacity: 6,000 to 200,000 m<sup>3</sup>/hour. Fluid flow rate: up to 12,000 m<sup>3</sup>/hour. Capacity: 10kW to 600kW per section. Number of fans per section: 1 to 6 (depending on heat-exchanger inlet opening size). Number of sections is optional.



Dry cooler casing is made of galvanized steel and coated with special polymeric paint. Dry cooler is available in horizontal and vertical versions.

Fan efficiency during cooling of hot and very hot fluids as well as in conditions of air temperature exceeding 40°C may be saved by "Reversal" configuration providing air supply form fan to the heat exchanger. This means that air temperature blowing at the fan does not depend on the heat exchanger temperature. Outward heat transmission is performed through the heat transfer surface of the heat exchanger cooling by air supplied by fans.

Modular structure allows increasing of cooling capacity by means of changing the number of fans mounted in a single case with the heat exchanger of corresponding thermal performance.

Automatic Control System see p.194.

**FPAC (GRAS)** Design Types







Number of fans: 1 to 6









To select (build) dry cooler, please, fill in order form on p.209.