



Donaldson
FILTRATION SOLUTIONS

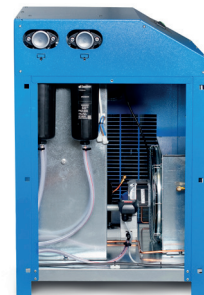
Refrigerant Dryers

Refrigerant Compressed Air Dryer with integrated DF Filters

BURAN DC 0020 AB - DC 0850 AB

MAIN FEATURES & BENEFITS

- Purification package incl. refrigerant dryer with integrated pre- and afterfilters and condensate drains.
- Integrated pre filter, type V, for protection of the compressed air dryer against contaminations; Integrated afterfilter UltraPleat® M for the removal of oil aerosols and particles with high retention efficiency and very low differential pressure; Safe compliance with the compressed air quality at low energy costs.
- Extremely compact design with robust steel housing. No additional pipings for installation of pre-and afterfilter required.
- Electronic level-controlled condensate drain incl. function monitoring and alarm messages for discharging of the compressed air condensate at the heat exchanger. Optional with pre-and afterfilter upgradeable.
- Electronic controller with dewpoint indicator, operating time counter, alarm display, service display and operating display for compressed air dryer and fan.
- 17 sizes for nominal flow rates up to 850 m³/h enable accurate selection of the suitable refrigerated compressed air dryer on the respective actual flow rate.



**BURAN
DC 0020 AB - DC 0850 AB**

INDUSTRIES



- Chemical and electrical industry



- Machine building industry and plant engineering / construction



- Automotive industry

Donaldson Filtration Deutschland GmbH
Büssingstr. 1
D-42781 Haan
Tel.: +49 (0) 2129 569 0
Fax: +49 (0) 2129 569 100
E-Mail: CAP-de@donaldson.com
Web: www.donaldson.com

Donaldson®
Ultrafilter

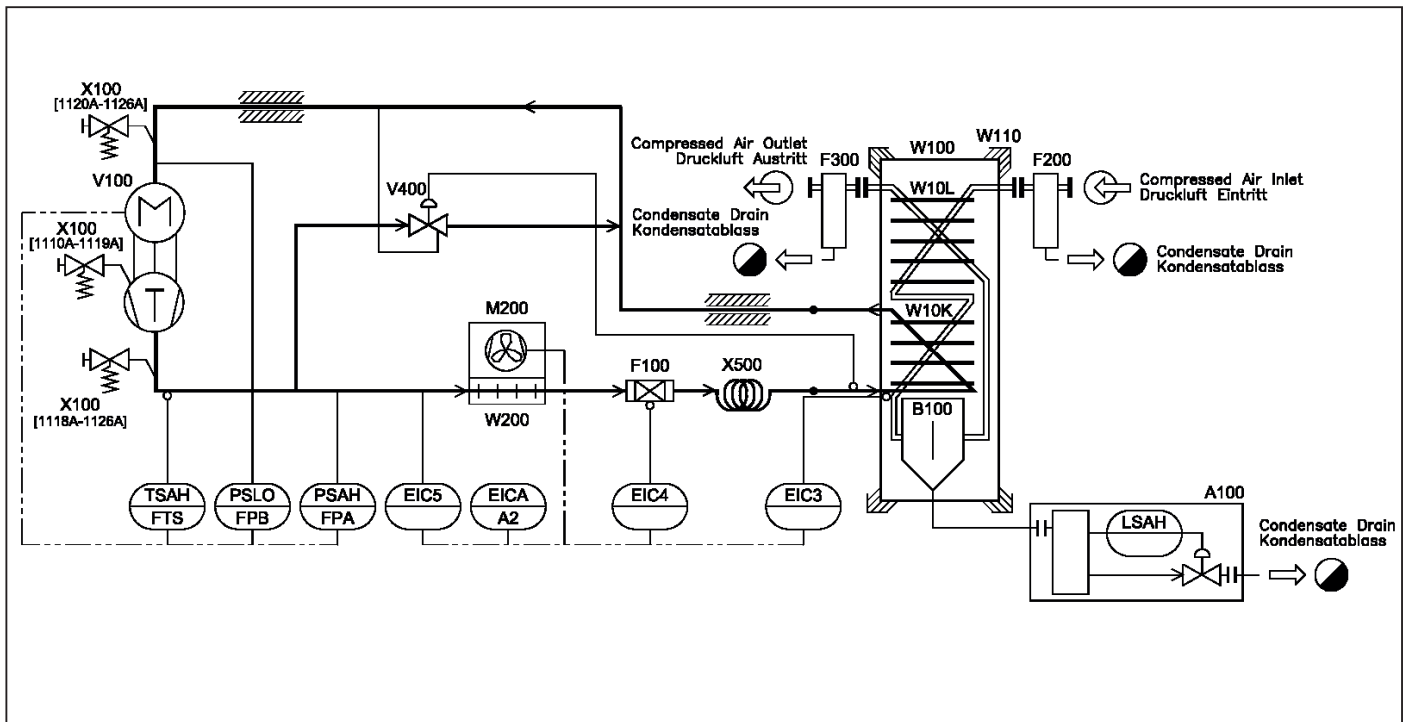
PRODUCT DESCRIPTION

The compressed air is being fed into the dryer and being pre-cooled in the air-to-air heat exchanger by the outgoing cold compressed air. The pre-cooled air then passes through the refrigerant-to-air heat exchanger where it is being further cooled down to the required pressure dew point. The moisture in the compressed air condenses out and gathers and discharges automatically. Finally, the cold discharged air is being reheated by the incoming compressed air. This saves energy and prevents any moisture forming beyond the dryer in the compressed air system.

The cooling capacity of the refrigeration cycle is being controlled by a hot gas bypass which assures the dryer functionality for partial loads, too.

Typical applications for the fridge dryers DC 0020 AB - DC 0850 AB are:

- **Central compressed air purification**
Generation of dry, oil-free and particulate-free compressed air
- **Automotive industry**
Purification of compressed air for painting applications



PRODUCT SPECIFICATIONS

| Features: | Benefits: |
|--|---|
| Intelligent over-all concept | Type range, filter performance data, integrated monitoring functions as well as automatic condensate drain adapted for the use in central compressed air applications |
| Integrated pre-and afterfilter with condensate drain | Pre filter, type V, for protection of the compressed air dryer against contaminations; Afterfilter UltraPleat® M for the removal of oil aerosols and particles with high retention efficiency and very low differential pressure; Safe compliance with the compressed air quality at low energy costs. |
| Validated performance data acc. to ISO 12500-1 and ISO 12500-3 for the integrated pre-and afterfilter | Reliable achievement of the compressed air quality according to ISO 8573-1 |
| Compact and space-saving design with robust steel housing | Little space required at the installation site, no additional piping for the installation of pre-and afterfilter required, low storage space requirements and low transport costs |
| Electronic level-controlled condensate drain UFM-D at the heat exchanger | No expensive pressure drops, condensate discharge depending on the amount of condensate |
| Electronic controller with dewpoint indicator, operating time counter, alarm display, service display and operating display for compressed air dryer and fan; potential-free error message | Reliable monitoring of the operating condition and timely display of necessary maintenance work; Remote monitoring via potential-free error message possible |
| High load capacity up to pressure dew point of + 20°C | In case of overload the refrigerant compressed air dryer switches off only at a pressure dewpoint upper than +20°C |
| Aluminium heat exchanger | No corrosion within the heat exchanger by contact with moist compressed air; good heat transfer properties combined with low weight |

| Technical Data | |
|---------------------------------------|--|
| Operating pressure: | DC 0020 AB - DC 0085 AB: min. 2 bar (g) / max. 16 bar (g) DC 0105 AB - DC 0850 AB: min. 2 bar (g) / max. 14 bar (g) |
| Ambient temperature: | min. +2°C / max. +50°C |
| Medium temperature: | max. +70°C |
| Medium: | Compressed air |
| Refrigerant: | DC 0020 AB - DC 0150 AB: R134a DC 0180 AB - DC 0850 AB: R407C |
| Noise pressure level: | < 70 dB (A) |
| Power supply: | DC 0020 AB - DC 0105 AB: 230V / 1~ / 50-60 Hz (±10%) DC 0180 AB - DC 0850 AB: 230V / 1~ / 50 Hz or 60 Hz (±10%) |
| Protection class: | IP 22 |
| Declaration of Conformity | |
| Types DC 0020 AB - DC 0850 AB: | acc. to directive 2006/42/EG appendix IIA |

PRODUCT SPECIFICATIONS

| Type | Volume flow* | Volume flow* | Pressure drop** | Cooling air requirement | Power supply | Filter housing | Filter element |
|------------|-------------------|----------------------|-----------------|-------------------------|--------------|----------------|----------------|
| | m ³ /h | m ³ /min. | bar | m ³ /h | kW | | |
| DC 0020 AB | 20 | 0,33 | 0,04 | 200 | 0,14 | DF-0120 | V / M 0070 |
| DC 0035 AB | 35 | 0,58 | 0,04 | 200 | 0,17 | DF-0120 | V / M 0070 |
| DC 0050 AB | 50 | 0,83 | 0,10 | 300 | 0,19 | DF-0120 | V / M 0070 |
| DC 0065 AB | 65 | 1,08 | 0,13 | 300 | 0,24 | DF-0120 | V / M 0070 |
| DC 0085 AB | 85 | 1,42 | 0,14 | 300 | 0,28 | DF-0120 | V / M 0120 |
| DC 0105 AB | 105 | 1,75 | 0,28 | 300 | 0,28 | DF-0120 | V / M 0120 |
| DC 0125 AB | 125 | 2,08 | 0,39 | 300 | 0,45 | DF-0120 | V / M 0120 |
| DC 0150 AB | 150 | 2,50 | 0,15 | 300 | 0,47 | DF-0320 | V / M 0210 |
| DC 0180 AB | 180 | 3,00 | 0,12 | 380 | 0,68 | DF-0320 | V / M 0210 |
| DC 0225 AB | 225 | 3,75 | 0,18 | 380 | 0,76 | DF-0320 | V / M 0210 |
| DC 0300 AB | 300 | 5,00 | 0,36 | 450 | 0,71 | DF-0320 | V / M 0320 |
| DC 0360 AB | 360 | 6,00 | 0,49 | 450 | 0,89 | DF-0320 | V / M 0320 |
| DC 0450 AB | 450 | 7,50 | 0,11 | 450 | 0,91 | DF-0750 | V / M 0450 |
| DC 0550 AB | 550 | 9,17 | 0,15 | 1900 | 1,11 | DF-0750 | V / M 0600 |
| DC 0650 AB | 650 | 10,83 | 0,32 | 1900 | 1,40 | DF-0750 | V / M 0600 |
| DC 0750 AB | 750 | 12,50 | 0,25 | 2500 | 1,34 | DF-0750 | V / M 0750 |
| DC 0850 AB | 850 | 14,17 | 0,33 | 3300 | 1,70 | DF-0750 | V / M 0750 |

* acc. to ISO 7183

** incl. pre-and afterfilter

SIZING

| Operating pressure (bar) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Correction factor fp | 0,49 | 0,66 | 0,77 | 0,86 | 0,93 | 1,00 | 1,05 | 1,10 | 1,14 | 1,18 | 1,21 | 1,24 | 1,27 | 1,30 | 1,33 |

| Compressed air inlet temperature (°C) | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|
| Correction factor fte | 1,20 | 1,12 | 1,00 | 0,83 | 0,69 | 0,59 | 0,50 | 0,44 | 0,39 | 0,37 |

| Temperature of cooling media (°C) | 25 | 30 | 35 | 40 | 45 | 50 |
|-----------------------------------|------|------|------|------|------|------|
| Correction factor ftu | 1,00 | 0,96 | 0,90 | 0,82 | 0,72 | 0,60 |

| Pressure dewpoint °C | 3 | 5 | 7 | 10 |
|------------------------|------|------|------|------|
| Correction factor ftpd | 1,00 | 1,09 | 1,19 | 1,37 |

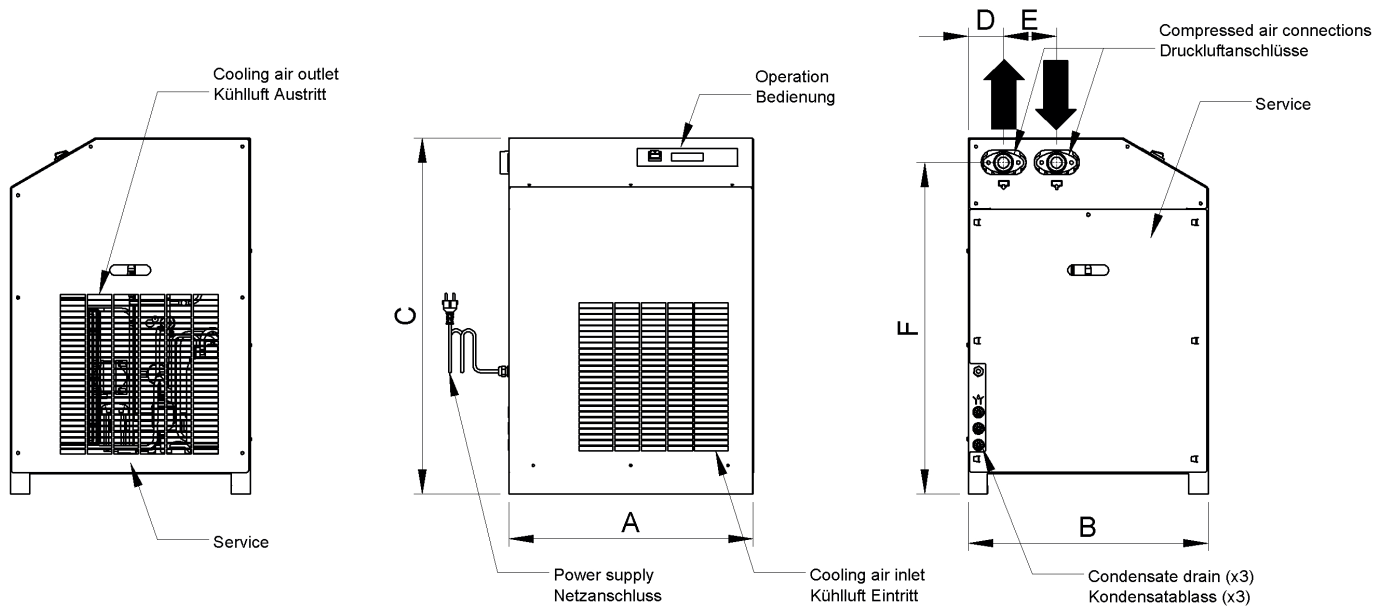
Example:

$\dot{V}_{nom} = 100 \text{ m}^3/\text{h}$ (intake volume of the compressor), compressed air inlet temperature = 40°C,
cooling air temperature = 35°C, operating pressure = 9 bar, pressure dewpoint = +3°C

$$\dot{V}_{korr} = \frac{\dot{V}_{nom}}{f} = \frac{100 \text{ m}^3/\text{h}}{0,88 \times 1,06 \times 0,94 \times 1,00} = 114 \text{ m}^3/\text{h}$$

Calculated dryer size:
DC 0125 AB

DIMENSIONS



| Type | A | B | C | D | E | F | Compressed air connections | Weight |
|------------|-----|-----|------|-----|-----|-----|----------------------------|--------|
| | mm | mm | mm | mm | mm | mm | | |
| DC 0020 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 30 |
| DC 0035 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 31 |
| DC 0050 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 33 |
| DC 0065 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 36 |
| DC 0085 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 37 |
| DC 0105 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 37 |
| DC 0125 AB | 456 | 410 | 645 | 60 | 110 | 595 | 3/4" | 38 |
| DC 0150 AB | 600 | 590 | 870 | 85 | 130 | 810 | 1 1/2" | 63 |
| DC 0180 AB | 600 | 590 | 870 | 85 | 130 | 810 | 1 1/2" | 65 |
| DC 0225 AB | 600 | 590 | 870 | 85 | 130 | 810 | 1 1/2" | 76 |
| DC 0300 AB | 600 | 590 | 870 | 85 | 130 | 810 | 1 1/2" | 76 |
| DC 0360 AB | 600 | 590 | 870 | 85 | 130 | 810 | 1 1/2" | 76 |
| DC 0450 AB | 805 | 920 | 1055 | 175 | 220 | 930 | 2" | 143 |
| DC 0550 AB | 805 | 920 | 1055 | 175 | 220 | 930 | 2" | 152 |
| DC 0650 AB | 805 | 920 | 1055 | 175 | 220 | 930 | 2" | 159 |
| DC 0750 AB | 805 | 920 | 1055 | 160 | 345 | 930 | 2" | 175 |
| DC 0850 AB | 805 | 920 | 1055 | 160 | 345 | 930 | 2" | 192 |