

# Refrigerated Air Dryer

## Series IDFA



- ***Start of the art design ensures a constant 3°C pressure dew point***
- ***High efficiency heat exchanger***
- ***Environmentally ozone friendly R134a and R407C refrigerant***
- ***Conforms to stringent ISO8573-1 standards***

# Series IDFA Refrigerated Air Dryer

## High performance, reliable and trouble free com

- Simple control system, incorporating an easy to read evaporator gauge.
- Stainless steel heat exchanger providing long life and low pressure drops.
- Compact design for ease of installation.
- ø10 mm One-touch condensate drain port.

### Standard Specifications

Model	Operating range			Power supply voltage	Power consumption (W)	Air port connections	Refrigerant	Weight (kg)
	Inlet air pressure (bar)	Inlet air temperature (°C)	Ambient temperature (°C)					
IDFA3E-23	1.5 to 10	5 to 50	2 to 40 (Relative humidity of 85% or less)	Single Phase 230 VAC 50Hz	180	Rc 3/8	R134a	18
IDFA4E-23						Rc1/2		22
IDFA6E-23-K	Rc 3/4				23			
IDFA8E-23-K					27			
IDFA11E-23-K	Rc 1				28			
IDFA15E-23-K					46			
IDFA22E-23-K	R 1				R407C	54		
IDFA37E-23-K						R 1 1/2	62	
IDFA55E-23-L	R 2				100			
IDFA75E-23-L					1700	116		

Note ) Thread adapters to convert Rc thread to R thread are included with IDFA3E to IDFA15E.

### Nominal Air Flow Rate [m³/h (ANR)]

Model	ISO 8573.1 Water vapour class		
	4 (3°C Pressure dew point)	5 (7°C Pressure dew point)	6 (10°C Pressure dew point)
IDFA3E-23	12	15	17
IDFA4E-23	24	31	34
IDFA6E-23-K	36	46	50
IDFA8E-23-K	65	83	91
IDFA11E-23-K	80	101	112
IDFA15E-23-K	120	152	168
IDFA22E-23-K	182	231	254
IDFA37E-23-K	273	347	382
IDFA55E-23-L	390	432	510
IDFA75E-23-L	660	720	822

Note 1) The standard condition (ANR) is under the conditions of 20°C at atmospheric pressure and relative humidity of 65%.

Note 2) The performance data for pressure dew point is in accordance with the following operating conditions from ISO 7183:

- Inlet air pressure: 7 bar
- Inlet air temperature: 35°C (saturated)
- Cooling air temperature: 25°C

### Correction Factors

Inlet air temperature (°C)		5 to 25	30	35	40	45	50
Correction factor A	IDFA3E to 37E	1.30	1.25	1.00	0.83	0.70	0.60
	IDFA55E, 75E	1.33	1.16	1.00	0.80	0.64	0.48

Ambient temperature (°C)		20	25	30	35	40
Correction factor B	IDFA3E to 11E	1.10	1.00	0.91	0.83	0.79
	IDFA15E to 75E	1.10	1.00	0.97	0.89	0.77

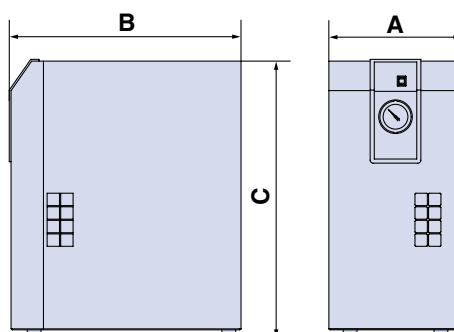
Inlet air pressure (bar)		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor C	IDFA3E to 11E	0.80	0.87	0.92	0.96	1.00	1.04	1.07	1.10	1.13	1.16	1.18	1.21	1.23	1.25
	IDFA15E to 75E	0.72	0.81	0.88	0.95	1.00	1.06	1.11	1.16	1.19	1.21	1.23	1.25	1.26	1.27

Corrected air flow rate = Customer's air flow rate / Factor A x Factor B x Factor C.

Select a model with a nominal air flow rate higher than the corrected air flow rate calculated in the formula above.

### Dimensions (mm)

Model	A	B	C
IDFA3E-23	226	410	473
IDFA4E-23	270	453	498
IDFA6E-23-K		455	
IDFA8E-23-K		485	568
IDFA11E-23-K	300	603	578
IDFA15E-23-K	290	775	623
IDFA22E-23-K		623	
IDFA37E-23-K	470	855	800
IDFA55E-23-L			900
IDFA75E-23-L			



The new SMC IDFA Series of refrigerated air dryers are the result of over 40 years experience combined with the latest compressed air and refrigeration technology.



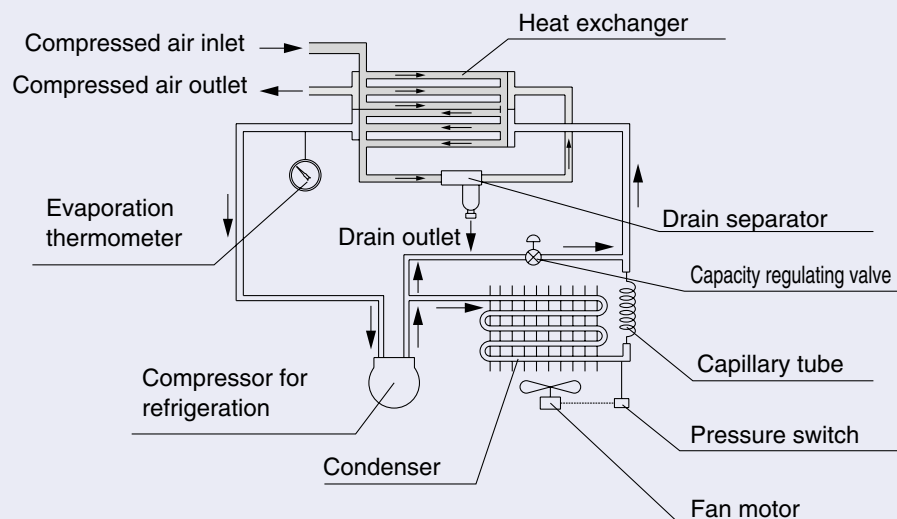
Built to international standards, and backed by SMC's BS EN ISO 9001 quality certification, the IDFA Series has eight standard models with nominal capacities from 12 m<sup>3</sup>/h to 822 m<sup>3</sup>/h.



## Operation Principle

Saturated compressed air enters the air-to-air heat exchanger, the incoming air is then pre-cooled by the cold air exiting the dryer. The air then passes through the evaporator, where it is further cooled, to a 3°C dew point. As the air cools, the water condenses from a vapour to a liquid which is removed by the automatic drain.

The dry air is then passed back through the air-to-air heat exchanger where it is reheated before leaving the dryer.





### Series AFF Main Line Filter

- General purpose 3 micron filter.
- Die-cast aluminium body with chromate treatment.
- Cartridge type element with no screw threads or tie rods, therefore removal and replacement of element is quick and easy.
- Option for differential pressure indicator.
- Option for internal auto-drain.
- Built-in push-to-connect fitting on drain.



### Series AMD Micro Mist Separator

- 0.01 micron high efficiency oil removing filter.
- Die-cast aluminium body with chromate treatment.
- Cartridge type element with no screw threads or tie rods, therefore removal and replacement of element is quick and easy.
- Option for differential pressure indicator.
- Option for internal auto-drain.
- Built-in push-to-connect fitting on drain.



### Series AMF Odour Removal Filter

- Activated carbon filter.
- Die-cast aluminium body with chromate treatment.
- Cartridge type element with no screw threads or tie rods, therefore removal and replacement of element is quick and easy.
- Two sight glasses are fitted to the housing to give a visual indication of the filter operation and condition.



### Series IDG Membrane Air Dryer

- -15°C, -20°C, -40°C and -60°C. pressure dew points.
- Option for dew point indicator that confirms air drying at a glance.
- Compact and lightweight.
- Also available with fittings for purge air discharge.
- Discharged air noise reduced with built-in silencer.
- Environmentally friendly (non-freon).
- Power supply not required.
- No vibration or heat discharge.
- Compatible with low dew points.

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