

Refrigated air dryer

IDFA-series

The new SMC IDFA series of refrigerated air dryers are the result of over 40 years of experience combined with the latest compressed air and refrigeration technology. Built to international standards and backed by SMC's BS and ISO 9001 quality certification. The new IDFA series has ten standard models with nominal capacities ranging from 34 - 822 m³/h.

Series IDFA Refrigerated Air Dryer

- State of the art design ensures a constant +3°C pressure dew point
- High efficiency heat exchanger
- Environmentally ozone friendly refrigerants
- Conforms to stringent ISO8573-1 standards
- Simple control system with easy to read evaporator gauge
- Compact design for easy installation
- High performance, reliable and trouble free



IDFA series - standard specifications

Type	Brand	Inlet air-pressure (bar)	Inlet air-temp. (°C)	Ambient temp. (°C)	Power supply voltage	Power cons. W	Air port connections	Refrigerant	Weight kg
IDFA3E-23	SMC	0,15 - 1,0	5 - 50	2 - 40	1 Phase 230V AC 50Hz/60Hz	180	Rc 3/8	R134a	18
IDFA4E-23	SMC	0,15 - 1,0	5 - 50	2 - 40	1 Phase 230V AC 50Hz/60Hz	180	Rc 1/2	R134a	22
IDFA6E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz/60Hz	180	Rc 3/4	R134a	23
IDFA8E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz/60Hz	208	Rc 3/4	R134a	27
IDFA11E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz/60Hz	385	Rc 3/4	R134a	28
IDFA15E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz	470	Rc 1	R134a	46
IDFA22E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz	760	R 1	R407C	54
IDFA37E-23-K	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz	760	R 1½	R407C	62
IDFA55E-23-L	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz	1.130	R 2	R407C	100
IDFA75E-23-L	SMC	0,15 - 1,6	5 - 50	2 - 40	1 Phase 230V AC 50Hz	1.700	R 2	R407C	116

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

IDFA series - nominal air flow rate [m³/h (ANR)]*

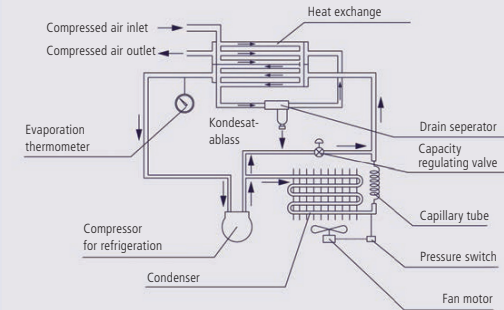
Type	Brand	3°C Pressure dew point	7°C Pressure dew point	10°C Pressure dew point
IDFA3E-23	SMC	12	15	17
IDFA4E-23	SMC	24	31	34
IDFA6E-23-K	SMC	36	46	50
IDFA8E-23-K	SMC	65	83	91
IDFA11E-23-K	SMC	80	101	112
IDFA15E-23-K	SMC	120	152	168
IDFA22E-23-K	SMC	182	231	254
IDFA37E-23-K	SMC	273	347	382
IDFA55E-23-L	SMC	390	432	510
IDFA75E-23-L	SMC	660	720	822

* Standard condition (ANR) with 20°C ambient temperature, atmospheric pressure and relative humidity of 65%. Performance data for pressure dew point in accordance with operating conditions from ISO7183 (P1= 7 bar, T1= 35°C (saturated), cooling air temp. 25°C).

Refrigated air dryer

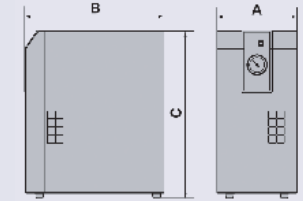
Operating principle IDFA / Dimensions

Operation principle IDFA refrigerated air dryer



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 3°C dew point. As the air cools, the water condenses to 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.

Dimensions IDFA-series



Type	A	B	C
IDFA3E-23	226	410	437
IDFA4E-23	270	453	498
IDFA6E-23-K	270	455	498
IDFA8E-23-K	270	485	568
IDFA11E-23-K	270	485	568
IDFA15E-23-K	300	603	578
IDFA22E-23-K	290	775	623
IDFA37E-23-K	290	855	623
IDFA55E-23-L	470	855	800
IDFA75E-23-L	470	855	900

Banish moisture in your compressed air

Tests carried out by SMC, world leaders in pneumatic technology, have indicated that in certain atmospheric conditions the moisture contained in compressed air from a 75 kW compressor after one days operation could be equivalent to 113 litres of water.

Obviously any compressed air system containing this volume of air moisture will suffer from dramatically reduced valve and air cylinder performance. Therefore armed with this knowledge, SMC's R&D engineers have now produced the perfect answer with their new range of Refrigerated Air Dryers - Series IDFA.

Designed specifically for the European market, with both CE accreditation and 230V AC (50Hz) voltage requirements, Series IDFA effectively removes water vapour through a highly efficient stainless steel, improved corrosion resistant, heat exchanger. With eight flow rate size options. - 34 to 822 m³/h (ANR), these new air dryers use ozone friendly HFC refrigerants - R134a/ R407C and emit outlet air at 3°C point as per ISO8573-1 standard.

Incorporating an easy to see evaporation temperature gauge, to confirm correct operation, Series IDFA is highly efficient with a low pressure drop when operating for improved energy savings.

IDFA-series - correction factors

Inlet air temp. (°C)		5-25°	30°	35°	40°	45°	50°								
Correction factor A		1,30	1,25	1,00	0,83	0,70	0,60								
Ambient temp. (°C)		20°	25°	30°	35°	40°									
Correction factor B	IDFA3E - IDFA11E	1,10	1,00	0,91	0,83	0,79									
	IDFA15E - IDFA37E	1,10	1	0,97	0,89	0,77									
Inlet air press. (bar)		0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4	1,5	1,6
Correction factor C	IDFA3E - IDFA11E	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 - IDFA37E	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 [m³/h] = Customers air flow rate / (factor A x factor B x factor C)