# **Refrigerated Air Dryer** For Use in Europe, Asia and Oceania

# New CE

## Standard IDFA E/ Series



## Large Size IDFA F Series

#### Refrigerant

For use in Europe, Asia and Oceania R407C (HFC)

# **Tolerant of high temperature environment!**

Top of its class in the industry for the large air-cooled type Ambient temperature **45** °C at max. Inlet air temperature **60** °C at max.

### **Energy saving design**

Exhaust heat reduced by **25** % at max. Ambient temperature increase suppressed.

Employs a heat exchanger made of high corrosion-resistant stainless steel.







# Variations

Standard	IDF	A3E to	15E1					
					DFASE	IDPAGE	DFAISE	
								0
	Deter distant	Air flow capacity (m <sup>3</sup> /h [ANR])			Refri	gerant		
Model	Rated inlet	Outlet a	Outlet air pressure dew point			For use in Asia	Port size	Page
	Schalton	3 °C	7 °C	10 °C	For use in Europe	and Oceania		
IDFA3E		12	15	17			Bc3/8	

IDFA4E	35 °C 0.7 MPa	24	31	34	R1234yf (HFO)		Rc1/2	]	
IDFA6E		36	46	50		R134a (HFC)		p.5►9	
IDFA8E		65	83	91			Rc3/4		
IDFA11E		80	101	112					
IDFA15E1		120	152	168			Rc1		

Standard IDFA60 to 90



	Deter diselect	Air flow	capacity (m <sup>3</sup> /	/h [ANR])	Refrig	gerant			
Model	condition	Outlet a	ir pressure d	ew point	For use in	For use in Asia	Port size	Page	
	condition	3 °C	7 °C	10 °C	Europe	and Oceania			
IDFA60		204	300	360			R1		
IDFA70	35 °C	312	408	480	R410A (HFC)		R1 1/2	p. 10 ▶ 16	
IDFA80	0.7 MPa	552	654	720			20		
IDFA90		810	900	960			ri2		

Large Size IDFA100F to 150F



	Data dialat	Outlet air	Air flow	Refrig	gerant			
Model	condition	pressure dew point	capacity (m³/h [ANR])	For use in Europe	For use in Asia and Oceania	Port size	Page	
IDFA100F-38	40.00		960			R2		
IDFA125F-38	40 °C	10 °C	1210			R2 1/2		
IDFA150F-38	0.7 101 4		1500			DIN flange 80	n 17▶21	
IDFA100F-40	05.00		860	N407C	С (ПГС)	R2	p: 17721	
IDFA125F-40	35 °C	3 °C	1100			R2 1/2		
IDFA150F-40	0.7 Mi a		1340			DIN flange 80		



### Refrigerated Air Dryer For Use in Europe, Asia and Oceania IDFA Series

#### IDFA E/F Series

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IDFA Series	
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#### Standard IDFA3E to 15E1

Low GWP Refrigerant	For Use in Europe Refrigerant R1234yf (HFO
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#### IDFA E Series 3E, 4E, 6E, 8E, 11E, 15E1

(Max. inlet air temperature: 50 °C, Max. ambient temperature	e: 40 °C)
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For Use in Asia and Oceania Refrigerant R134a (HFC)

#### IDFA E Series 3E, 4E, 6E, 8E, 11E, 15E1

(Max. inlet air temperature: 50 °C, Max. ambient temperature: 40 °C)

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Standard IDFA60 to 90

For Use in Europe, Asia and Oceania Refrigerant R410A (HFC)

#### IDFA60/70/80/90 Series

(Max. inlet air temperature: 65 °C, Max. ambient	temperature: 45 °C)
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#### Large Size IDFA100F to 150F

#### For Use in Europe Refrigerant R407C (HFC)

#### IDFA100F/125F/150F Series

(	Max.	inlet	air t	emp	erature:	60	°C.	Max.	ambient	tem	perature:	45	°C	)
١							-,							

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For Use in Asia and Oceania Refrigerant R407C (HFC)

#### IDFA100F/125F/150F Series

(Max. inlet air temperature: 60 $^\circ\text{C},$ Max. ambient temperature	: 45 °C)
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#### Options

#### IDFA E/F Series

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Moderate Pressure Specification
(Auto drain bowl type: Metal bowl with level gauge)p. 23
Moderate Pressure Specification (For IDFA100F to 150F). p. 23
With a Heavy-Duty Auto Drain
(Applicable to Moderate Pressure)p. 23
With a Circuit Breaker p. 24
With a Terminal Block for Power Supply,
Run & Alarm Signal and Remote Operationp. 24
With a Timer Controlled Solenoid Valve Type Auto Drain
(Applicable to Moderate Pressure)p. 24
IDFA Series
Cool compressed air outputp. 25
Anti-corrosive Treatment for Copper Tubep. 25
With Chinese Labels and a Chinese Operation Manualp. 25
With a Heavy-Duty Auto Drain
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With an Earth Leakage Breakerp. 25
With a Terminal Block for Operating,
Error, and Remote Operation Signalsp. 26
With a Timer Controlled Solenoid Valve Type Auto Drain
(Applicable to Moderate Pressure)p. 26

#### Optional Accessories

#### IDFA E/F Series

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Foundation Bolt Set	p. 28
Piping Adapter	p. 28
Bypass Piping Set	p. 28

#### IDFA E Series

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New Model Product Nos. p. 29

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3

# IDFA E/F Series **Model Selection**

The corrected air flow capacity, which considers the user's operating conditions, is required for selecting the air dryer. Please select using the following procedures.

However, for 400 VAC, model should also be selected based on the amount of processed air of 380 VAC regarding IDFA100F to 150F. (Correction factor is based on the rated conditions of 380 VAC, so when the factor of rated conditions of 400 VAC is inputted, the amount of processed air of 400 VAC can be found.)

i.

<b>1</b> Read the correction factor	Condition		Data symbol	Correction factor*1	
	Inlet air temperature	40 °C	A	0.83	
Obtain the correction factor A to D suitable for your operating	Ambient temperature	35 °C	В	0.83	
condition using the table below.	Inlet air pressure	0.5 MPa	С	0.92	
	Air consumption	31 m³/h	_	_	
	*1 Values obtained from the t	able below.			
<b>2</b> Calculate the corrected air flow capacity.					
Obtain the corrected air flow capacity from the following formula. Corrected air flow capacity = Air consumption ÷ (Correction factor A x B x C)	Corrected air flow capacity = 31 m <sup>3</sup> /h $\div$ (0.83 x 0.83 x 0.92) = 48.9 m <sup>3</sup> /h				
<b>3</b> Select the model.	According to the correct	ted air flow ca	pacity of 48.9 m	<sup>3</sup> /h, the <b>IDFA8E</b> will	
Select the model which air flow capacity exceeds the corrected air flow capacity using the specification table. (For air flow capacity, refer to the data D below.)	be selected when the re IDFA6E will be selected	quired output when the requ	air pressure dev uired pressure d	v point is 3 °C. The lew point is 10 °C.	
4 Option	Refer to pages 23 and 24	4.			
5 finalise the model number.	Refer to pages 5, 7, 17 a	nd 19.			
6 Select accessories sold separately.	Refer to page 27.				

#### **Data A: Inlet Air Temperature**

Inlet air	Correction factor	Inlet air	Correction factor
[°C]	IDFA3E to 15E1	[°C]	IDFA100F to 150F
5 to 25	1.30	5 to 30	1.41
30	1.25	35	1.21
35	1	40	1
40	0.83	45	0.92
45	0.7	50	0.75
50	0.6	55	0.63
		60	0.53

#### **Data B: Ambient Temperature**

Ambient	Correctio	on factor	Ambient	Correction factor
[°C]	IDFA3E to 11E	IDFA15E1	[°C]	IDFA100F to 150F
20	1.1	1.1	2 to 25	1.06
25	1	1	30	1.02
30	0.91	0.97	32	1
35	0.83	0.89	35	0.99
40	0.79	0.77	40	0.98
			45	0.92

#### **Data C: Inlet Air Pressure**

Inlet air	Correctio	on factor	Inlet air	Correction factor
[MPa]	IDFA3E to 11E	IDFA15E1	[MPa]	IDFA100F to 150
0.3	0.80	0.72	0.2	0.84
0.4	0.87	0.81	0.3	0.87
0.5	0.92	0.88	0.4	0.9
0.6	0.96	0.95	0.5	0.93
0.7	1.00	1.00	0.6	0.96
0.8	1.04	1.06	0.7	1
0.9	1.07	1.11	0.8	1.03
1	1.1	1.16	0.9	1.06
1.2	1.16	1.21	1 to 1.6	1.09
1.4	1.21	1.25		
1.6	1.25	1.27		

#### **Data D: Air Flow Capacity**

Mod	Air flow capacity (m <sup>3</sup> /h [ANR])					
IVIOU	EI	IDFA3E IDFA4E IDFA6E IDFA8E IDFA11				
Outlet air	3 °C	12	24	36	65	80
pressure	7 °C	15	31	46	83	101
dew point	10 °C	17	34	50	91	112

Model		Air flow capacity (m <sup>3</sup> /h [ANR])
Widd	51	IDFA15E1
Outlet air	3 °C	120
pressure	7 °C	152
dew point	10 °C	168

Made		Air flow capacity (m <sup>3</sup> /h [ANR])			
IVIOUEI		IDFA100F IDFA125F IDFA150F			
Outlet air	3 °C	670	860	1045	
pressure	7 °C	816	1029	1275	
dew point	10 °C	960	1210	1500	

In the case of option A (cool compressed air output), the air flow capacity is different. Refer to page 23 for details. (IDFA3E to 11E) The outlet air pressure dew point varies depending on the operating conditions.

Particularly when the outlet air pressure dew point is 3 °C or 7 °C, though this depends on the operating conditions, freeze protection functions may be activated, resulting in the dew point rising and becoming unstable.

If a stable low dew point is required, consider an IDG series membrane air dryer.



# IDFA Series Model Selection

Air dryers should be selected based on the corrected air flow capacity while taking operating environment and facility into account. Select the air dryer model in accordance with the following procedure.

	ID	A Selectio	on Examp	le
Bead the correction factors	Condition		Data symbol	Correction factor*1
	Inlet air temperature	40 °C	A	0.71
Read the correction factors $\textcircled{A}$ to $\textcircled{C}$ suitable to the operating conditions.	Ambient temperature	30 °C	B	0.85
	Inlet air pressure	0.6 MPa	©	0.89
	Air flow rate	250 m <sup>3</sup> /h (ANR)	_	_
	Outlet air pressure dew point	3 °C	_	_
	*1 Values obtained f	rom the table below		
2 Calculate the corrected air flow capacity. Obtain the corrected air flow capacity from the following formula. Corrected air flow capacity = Air flow rate ÷ (Correction factor (A) x (B) x (C))	Corrected air flov = 250 m³/h (ANR) = 465 m³/h (ANR)	w capacity ÷ (0.71 x 0.85 x (	0.89)	
<b>3</b> Select the model. Select the model with air flow capacity exceeding the calculated corrected air flow from data <sup>(1)</sup> of the table below.	The model which exceeds the correct air flow capacity of 465 m <sup>3</sup> /h (ANR) is IDFA80.			

#### Data (A): Inlet Air Temperature

°C	5 to 25	30	35	40	45	50	55	60	65
Correction factor	1.42	1.15	1.00	0.71	0.62	0.50	0.40	0.33	0.21

#### Data<sup>B</sup>: Ambient Temperature

°C	2 to 25	30	35	40	45
Correction factor	1.00	0.85	0.80	0.73	0.62

#### Data C: Inlet Air Pressure

MPa	0.3	0.4	0.5	0.6	0.7 to 1.6
Correction factor	0.71	0.75	0.82	0.89	1.00

#### Data D: Air Flow Capacity

Ma			Air flow capacity m <sup>3</sup> /h (ANR)							
IVIOC	Jei	IDFA60	IDFA70	IDFA80	IDFA90					
Outlet	3 °C 204		312	552	810					
air pressure dew point	7 °C	300	408	654	900					
	10 °C	360	480	720	960					

\* The outlet air pressure dew point varies depending on the operating conditions. Particularly when the outlet air pressure dew point is 3 °C or 7 °C, though this depends on the operating conditions, freeze protection functions may be activated, resulting in the dew point rising and becoming unstable.

If a stable low dew point is required, consider an IDG series membrane air dryer.

\* Refer to pages 25 and 26 for options.

\* Refer to page 28 for optional accessories.



How to Order



**Options and Available Combinations (Size/Option)** 

Symbol*2	-	Α	С	G	К	L	R	Т	V
Option	None	Cool compressed air output	Anti- corrosive treatment	With Chinese labels and a Chinese operation manual	Moderate pressure specification* <sup>3</sup> ( Auto drain bowl type: (Metal bowl with level gauge)	With a heavy- duty auto drain (Applicable to moderate pressure)*3	With a circuit breaker	With a terminal block for run & alarm signal	With a timer controlled solenoid valve type auto drain (Applicable to moderate pressure)*3
3E		•		•	-	-	-	_	-
4E					-			•	•
6E				•		•		•	
8E				•	•		•	•	•
11E				•					•
15E1		-			•				

\*1 G thread (PF thread) can accept the R thread (PT male thread), thus making no "F" in the thread specification setting A conversion hexagon nipple for the R thread (PT male thread) is also contained.

\*2 Enter alphabetically when multiple options are combined.

However, the following combination cannot be achieved.

• Combination of option K, L and V cannot be achieved because an auto drain can only be attached to a single option.

\*3 The maximum operating pressure is 1.6 MPa.

\* Refer to pages 23 and 24 for further details on optional specifications.

\* Option "H" (Auto drain bowl type: Metal bowl) is only applicable to the IDFA6E-20. However, option K, L, and V cannot be selected in combination.

Options	▶ p. 23
<b>Optional Accessories</b>	▶ p. 27

#### **Standard Specifications**





(heat exchanger). Water

from the water will be

heated by a cooler re-

side.

			Model		Star	ndard temp	erature air	inlet				
Sp	ecification	s		IDFA3E-23-F	IDFA4E-23-F	IDFA6E-23-F*7	IDFA8E-23-F	IDFA11E-23-F	IDFA15E1-23-F			
ge∜	Fluid					Compre	ssed air					
g ran	Inlet air t	emperat	ure [°C]	5 to 50								
ratin	Inlet air p	ressure	[MPa]		0.15 to 1.0*9							
Ope	Ambient	tempera	ture (Humidity) [°C]	2 to 40 (Relative humidity of 85 % or less)								
		*1	Outlet air pressure dew point 3 °C	12	24	36	65	80	120			
		Standard condition	Outlet air pressure dew point 7 °C	15	31	46	83	101	152			
*4	Air flow	(ANR)	Outlet air pressure dew point 10 °C	17	34	50	91	112	168			
tions	m <sup>3</sup> /h	*2	Outlet air pressure dew point 3 °C	13	25	37	68	83	125			
ficat		pressor	Outlet air pressure dew point $7 \degree C$	16	32	48	86	105	158			
peci		condition	Outlet air pressure dew point 10 °C	18	35	52	95	116	175			
ted s	Inlet air pressure [MPa]			0.7								
Rat	Inlet air t	emperat	ure [°C]	35								
	Ambient	tempera	ture [°C]			2	5					
	Power su	pply vol	tage	Single-phase: 230 VAC [Voltage fluctuation ±10 %] 50 Hz								
trical	Power co	onsumpti	ion <sup>*6</sup> [W]	190	200	210	230	410	420			
Elec	Operating	g curren <sup>-</sup>	t <sup>*6</sup> [A]	1	.5	1.6 1.8			3.1			
Ap (se	plicable ci ensitivity c	rcuit bre urrent 3	aker capacity <sup>*5</sup> [A] 0 mA)			5			10			
Co	ondenser					Air-co	ooled					
Re	frigerant					R1234yf	(HFO)*10					
Re	frigerant of	charge	[kg]	0.15	0.2	0.23	0.27	0.29	0.35			
Au	ito drain			Float type (Normally open)								
Po	ort size			Rc 3/8	Rc 1/2		Rc 3/4		Rc 1			
Ac	cessory			Hexagon nipple								
We	eight		[kg]	18	22	23	27	28	46			
Co	ompliant st	tandards	5		CE/UKCA marking							

\*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20 °C, relative humidity at 65 %]

\*2 Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32 °C, relative humidity at 75 %].

\*3 The operation range does not guarantee the use with normal air flow capacity.

\*4 Please select a model in accordance with the Model Selection (Page 3).

\*5 Product other than option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.

\*6 These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.

\*7 Refer to the operation manual on the SMC website for the IDFA6E-20 specifications.

Replacement Parts				Body
Model	IDFA3E-23-F IDFA4E-23-F	IDFA6E-23-F IDFA8E-23-F IDFA11E-23-F IDFA15E1-23-F	-	Auto drain
Auto drain	۵۵۵−۷	AD48-A		(Rowl assembly)
replacement part no.*8	AD30-A	70-70-A	$\Box$	(Down assembly)

\*8 The part number for the auto drain (Bowl assembly) components without including the body part. Body part replacement is impossible. \*9 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K, L, or V. \*10 R1234yf is a slightly flammable refrigerant. Avoid using this product in proximity to open flames.

\* When a short-term interruption of the power supply (including momentary interruption) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

#### Construction Principle (Air/Refrigerant Circuit)



For Use in Asia and Oceania Refrigerant R134a (HFC)

IDFA E Series

3E, 4E, 6E, 8E, 11E, 15E1

(Max. inlet air temperature: 50 °C, Max. ambient temperature: 40 °C)

For use in Europe p .5

How to Order



Options and Available Combinations (Size/Option)

$\bigvee$	Symbol*2	-	A	С	G	K	L	R	Т	V
Size	Option	None	Cool compressed air output	Anti- corrosive treatment	With Chinese labels and a Chinese operation manual	Moderate pressure specification Note 3) Auto drain bowl type: Metal bowl with level gauge	With a heavy- duty auto drain (Applicable to moderate pressure)* <sup>3</sup>	With a circuit breaker	With a terminal block for run & alarm signal	With a timer controlled solenoid valve type auto drain (Applicable to moderate pressure)*3
:	3E				•	-	_	-	-	-
	4E				•	-		•	•	•
	6E					•				
	8E						•			
1	1E				•	•	•			
1	5E1		-		•	•	•	•	•	•

\*1 G thread (PF thread) can accept the R thread (PT male thread), thus making no "F" in the thread specification setting.

A conversion hexagon nipple for the R thread (PT male thread) is also contained.

\*2 Enter alphabetically when multiple options are combined. However, the following combination cannot be achieved.

• The combination of option K, L, and V cannot be achieved because an auto drain can only be attached to a single option. \*3 The maximum operating pressure is 1.6 MPa.

 $\ast~$  Refer to pages 23 and 24 for further details on optional specifications.

\* Option H (Auto drain bowl type: Metal bowl) is only applicable to the IDFA6E-20. However, option K, L, and V cannot be selected in combination.

Options	▶p. 23
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#### **Standard Specifications**





			Model		Sta	ndard temp	erature air	inlet				
Sp	pecification	s		IDFA3E	IDFA4E	IDFA6E*7	IDFA8E	IDFA11E	IDFA15E1			
ge∜	Fluid					Compre	essed air					
g ran	Inlet air t	emperat	ure [°C]	5 to 50								
ratin	Inlet air p	oressure	[MPa]		0.15 to 1.0*9							
Ope	Ambient	tempera	ture (Humidity) [°C]	2 to 40 (Relative humidity of 85 % or less)								
		*1	Outlet air pressure dew point $3 \degree C$	12	24	36	65	80	120			
		Standard condition	Outlet air pressure dew point $7 \degree C$	15	31	46	83	101	152			
*4	Air flow	(ANR)	Outlet air pressure dew point 10 °C	17	34	50	91	112	168			
tions	m <sup>3</sup> /h	*2	Outlet air pressure dew point 3 °C	13	25	37	68	83	125			
ifica		pressor	Outlet air pressure dew point 7 °C	16	32	48	86	105	158			
spec		condition	Outlet air pressure dew point 10 °C	18	35	52	95	116	175			
ted	Inlet air pressure [MPa]				0.7							
Ba	Inlet air t	emperat	ure [°C]		35							
	Ambient	tempera	ture [°C]		25							
	Power su	ipply vol	tage	Single-phase: 230 VAC [Voltage fluctuation ±10 %] 50 Hz								
trrical	Power co	onsumpt	ion <sup>*6</sup> [W]		180	385 420						
Elec	Operating	g curren	t <sup>*6</sup> [A]		1.2		1.4	2.7	2.9			
Ap (se	oplicable ci ensitivity c	rcuit bre urrent 3	aker capacity <sup>*5</sup> [A] 0 mA)		5 10							
C	ondenser			Air-cooled								
Re	efrigerant					R134a	(HFC)					
Re	efrigerant	charge	[kg]	0.15	0.2	0.23	0.27	0.29	0.35			
Αι	uto drain				FI	oat type (N	ormally ope	en)				
Po	ort size			Rc 3/8         Rc 1/2         Rc 3/4         Rc 1								
Ac	ccessory			Hexagon nipple								
W	eight		[kg]	18	22	23	27	28	46			
C	ompliant s	tandards				CE/UKC/	A marking					

\*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20 °C, relative humidity at 65 %]

\*2 Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32 °C, relative humidity at 75 %].

\*3 The operation range does not guarantee the use with normal air flow capacity.

\*4 Please select a model in accordance with the Model Selection (Page 3).

\*5 Product other than the option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.

\*6 These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.

\*7 The specifications of the IDFA6E-20 are the same as those of the IDF6E-20 (Web Catalogue) aside from the compliant standards.

1											DOUY
	Model		IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E	IDFA15E1		1	Auto drain
	Auto drain	New	AD3	8-A	AD48-A				Τ	Т	(Rowl accombly)
	replacement part no.*8	Previous	AD	38	AD48				5	2	(DOWI assembly)

\*8 The part number for the auto drain (bowl assembly) components without including the body part. Body part replacement is impossible. In addition, a new line of auto drain models was recently introduced in March 2019. The previous models and the new models do not have mounting interchangeability. For details, refer to page 29.

\*9 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K, L, or V.

\* When a short-term interruption of the power supply (including momentary interruption) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

#### **Construction Principle (Air/Refrigerant Circuit)**

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.



# IDFA E Series

#### Dimensions

#### IDFA3E to 15E1



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Dimensions [mm]																			
Model	Port size	Α	В	С	D	E	F	G	<b>K</b> *1	<b>L</b> *1	<b>M</b> *1	<b>N</b> *1	Р	Q					
<b>IDFA3E</b>	Rc 3/8	226	410	473	67	125	304	33	36	154	21	330		15					
IDFA4E	Rc 1/2		453	409	400	100	100	400	400	10.9		000					075		13
IDFA6E		070	455	490	21	40	203	00		240	00	215	-						
IDFA8E	Rc 3/4	210	405	500	51	42	055	00	15	240	00	200		15					
IDFA11E		485 56	800 0	800		300					300								
IDFA15E1	Rc 1	300	603	578	41	54	396	87	]	43	101	380	314	16					

\*1 Meaning the foot dimensions for the IDFA3E.

# **Refrigerated Air Dryer IDFA** Series

For Use in Europe, Asia and Oceania

# **( €** ĽÅ

# Applicable for the high-temperature environments

Ambient temperature: Max. 45 °C Inlet air temperature : Max. 65 °C Air flow capacity \* IDFA90-23, Dew point of 3 °C

810 m<sup>3</sup>/h (23 % increase compared to the existing model)

Power supply voltage

Single-phase 230 VAC (50 Hz)





### Applicable for the hightemperature environments



#### Increased air flow capacity



#### A new stainless steel heat exchanger helps reduce the load of the compressor.

### **Easier maintenance**







### **Series Variations**

\$

	Model		Rated inlet condition	Rated ambient temperature	Air fl Dew point 3 °C	ow capacity [I Dew point 7 °C	m³/h] Dew point 10 °C	Port size
	IDFA60	ORC MINI			204	300	360	R1
	IDFA70		35 °C	05.00	312	408	480	R1 1/2
	IDFA80		0.7 MPa	25 °C	552	654	720	<b>D</b> 0
	IDFA90				810	900	960	R2
		Options	Cool compres Anti-corrosive With Chinese lal With a heavy- With a heavy- With an earth With a terminal block With a timer cor	ssed air output e treatment for bels and a Chines duty auto drai leakage break for operating, error, an trolled solenoid	copper tube se operation ma n er nd remote operation valve type auto	anual optional drain	· Foundat · Piping a · Bypass	ion bolt set dapter piping set
_								449-4-6-4 920
			Auto Dra onger li oreign n Non-slid reduces of foreig Diaphrag Poppet ty Easie • One-to bowl is Release th body. The Transp	in Valve fe, Highe hatter	er resist	val of the any tools. tton down wh pull down for Drain tub	Shape p condense matter are completed	revents sate lation te and foreign discharged y.
			<ul> <li>Allows check to conditi</li> <li>Improv durabil construction</li> </ul>	you to visual the condensa on in the bow ed environme ity due to 2-la uction	ly ite vi ental ayer Dr	ain tube hold	er	Drain tube

#### For Use in Europe, Asia and Oceania

# **Refrigerant R410A (HFC) IDFA60/70/80/90** Series (Max. inlet air temperature: 65 °C, Max. ambient temperature: 45 °C)

#### How to Order



V

Options	▶ p. 25
<b>Optional Accessories</b>	▶p. 28

(The maximum operating pressure is 1.6 MPa.) When multiple options are combined, indicate symbols in alphabetical order.

The combination of option L and V is not available.

# **IDFA** Series

#### **Replacement Parts**

#### Auto drain



#### Auto Drain Replacement Part Nos.

Description	Part no.	Qty.
Element	AD402P-040S	1
Bowl O-ring	KA00463	1
Bowl assembly*1	AD52-A	1

\*1 A bowl O-ring is included.

A one-touch fitting for connecting the drain tube is not included.



#### Dustproof filter



**Dustproof Filter Replacement Part Nos.** 

Part no.	Qty.	Dimension [mm]	Applicable model
IDF-S0530	1	H370 x W440	For IDFA60
IDF-S0531	1	H614 x W440	For IDFA70
IDF-S0535	1	H614 x W556	For IDFA80, IDFA90

#### **Construction (Air/Refrigerant Circuit)**

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by an auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.



# **IDFA** Series

#### **Replacement Parts**

#### Auto drain



#### Auto Drain Replacement Part Nos.

Description	Part no.	Qty.
Element	AD402P-040S	1
Bowl O-ring	KA00463	1
Bowl assembly*1	AD52-A	1

\*1 A bowl O-ring is included.

A one-touch fitting for connecting the drain tube is not included.



#### Dustproof filter



**Dustproof Filter Replacement Part Nos.** 

Part no.	Qty.	Dimension [mm]	Applicable model
IDF-S0530	1	H370 x W440	For IDFA60
IDF-S0531	1	H614 x W440	For IDFA70
IDF-S0535	1	H614 x W556	For IDFA80, IDFA90

#### **Construction (Air/Refrigerant Circuit)**

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by an auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.



#### For Use in Europe, Asia and Oceania Refrigerated Air Dryer **IDFA Series**

#### Dimensions





															[·····]									
Model	Port size	Α	В	С	D	E	F	G	н	J	K	L	М	N	0									
IDFA60	R1	307	745	605	161	405	681	681 905 94	71	- 46	16 105	10.5	10 E	10.5	10.5	10 5	10 E	10 5	10.5	10.5	330		704	355
IDFA70	R1 1/2	342	890	825	176		905		68		12.5	365	20	849	390									
IDFA80	<b>D</b> 2	120	057	062	160	480	059	210	70	100	11	462	20	016	195									
IDFA90	- R2	430	957	003	109		956	219	/0	100		403		910	400									

# For Use in Europe Refrigerant R407C (HFC) **IDFA100F/125F/150F Series** (Max. inlet air temperature: 60 °C, Max. ambient temperature: 45 °C)

For use in Asia and Oceania p. 19

How to Order



—	None					
С	Anti-corrosive treatment for copper tube					
G	With Chinese labels and a Chinese operation manual					
Κ	Moderate pressure specification (1.6 MPa)					
R	With a circuit breaker					
V	With a timer controlled solenoid valve type auto drain					
Enter alphabetically when multiple options are combined.						

Description

\*1 Enter alphabetically when multiple options are combined. Example: When the IDFA100F-40 is provided with option C, R, and V, the model number will be the IDFA100F-40-CRV.

Options	▶ p. 23
Optional Accessories	▶ p. 27

# For Use in Europe Refrigerated Air Dryer IDFA100F/125F/150F Series

#### Standard Specifications

Model

110 718	
	Operating range*3 V II I
	Rated conditions
	Electric specifications
	App capa Hea con Ref
	Aut Por Wei
	*1 Air *2 Air *3 Th dif
	*4 IN

Spe	ecifications		IDFA100F-40	IDFA125F-40	IDFA150F-40					
<u> </u>	Fluid		Compressed air							
*e	Inlet air temperature [°C]		5 to 60							
anç	Inlet air pressu	ure [MPa]	0.15 to 1.0*6							
	Ambient temperature	(humidity) [°C]	2 to 45	2 to 45 (Relative humidity 85 % or less)						
2 Air	Air flow	Standard condition (ANR)*1	860	1100	1340					
	m <sup>3</sup> /h	Compressor intake*2 condition	875	1119	1363					
5	Inlet air pressu	ire [MPa]	0.7							
	Inlet air tempe	rature [°C]	35							
29	Ambient tempe	rature [°C]	25							
	Outlet air pressure d	ew point [°C]	3							
tions	Power supply	voltage		Three-phase 400 VAC						
ificat	Power consum	ption [kW]	2.5	2.7	2.7					
spec	Operating cur	rent [A]	4.5	5.3	5.9					
Applicable circuit breaker [A] capacity <sup>*4</sup>			15							
Hea cor	at discharge fro ndenser	<sup>m</sup> [kW]	7	8	10					
Re	frigerant		R454C							
Re	frigerant charg	ge [kg]	1.25	1.36	1.8					
Auto drain			Float type (Normally open) Option V stands for a timer type solenoid valve.							
Po	rt size		R2	R2 1/2	DIN flange 80					
Ne	eight	[kg]	245	270	350					
Co	mpliant standa	ards	CE/UKCA marking							
Air flow capacity under the standard condition (ANR) [atmospheric pressure 20 °C, relative humidity 65 %]					humidity 65 %]					

flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]

e operation range does not guarantee the use with normal air flow capacity. When operating conditions are fferent from the rated specifications, please select a model in accordance with Model Selection (page 3).

stall a circuit breaker with a sensitivity 30 mA.

#### and Dorte

		IDFATUUF	Air dryer model			
	ADH-E400		Heavy-duty auto drain replacement part no.*5			
IDF-FL220	L219	IDF-F	Dustproof filter set for condenser			
*5 Part number of only the exhaust mechanism replacement kit excluding the						

housing \*6 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K.

A terminal block for remote operation, stop, operating, and error signals is include as standard equipment.



#### **Construction (Air/Refrigerant Circuit)**

#### IDFA100F/125F/150F



Hot and humid air entering the air dryer is cooled down by the cooler re-heater (heat exchanger). The moisture which is condensed and separated is automatically exhausted by the auto drain. The air which has had its moisture removed is heated in two stages by the re-heater (heat exchanger) in the cooler re-heater and by the secondary heater, and is supplied to the outlet side as warm and dry air.

#### Secondary heater

Compressed air from which drainage has been exhausted exchanges heat with refrigerant which has been compressed by the refrigerator, to give the following effects:

- 1. The outlet air temperature increases, preventing condensation of the piping on the outlet side.
- 2. The amount of heat exhausted from the condenser is reduced.
- 3. Energy saving operation of the dryer is achieved by reducing the amount of heat exhausted from the condenser.





**SMC** 



For use in Europe p. 17

How to Order



\*1 Enter alphabetically when multiple options are combined. Example: When the IDFA100F-38 is provided with option C, R, and V, the model number will be the IDFA100F-38-CRV.

Options	▶ p. 23
Optional Accessories	▶ p. 27

# For Use in Asia and Oceania Refrigerated Air Dryer IDFA100F/125F/150F Series

#### Standard Specifications

111 713	
	* * *
	A MARY DISAMAGAN

HL ...

Sn	ocifications	Model	IDFA100F-38	IDFA125F-38	IDFA150F-38			
ope n	Fluid		Compressed air					
•*3	Inlet air tempe	rature [°C]	5 to 60					
ang	Inlet air press	ure [MPa]	0.15 to 1.0*6					
52	Ambient temperature	(humidity) [°C]	2 to 45	(Relative humidity 85 %	or less)			
suo	Air flow (ANR)*1		960	1210	1500			
nditio	m <sup>3</sup> /h	Compressor intake*2 condition	1000	1255	1560			
8	Inlet air press	ure [MPa]		0.7				
ted	Inlet air tempe	erature [°C]		40				
Ra	Ambient tempe	erature [°C]	32					
	Outlet air pressure d	ew point [°C]	10					
tions	Power supply	voltage	Three-phase 380 VAC					
ificat	Power consumption [kW]		2.8	3.4	3.4			
spec	Operating cur	rent [A]	5.1	6.3	6.3			
Apj cap	plicable circuit l pacity <sup>*4</sup>	breaker [A]	15					
Heat discharge from [kW] condenser		m [kW]	7.5	7.5 9				
Re	frigerant		R407C (HFC)					
Re	frigerant charg	ge [kg]	1.25	1.36	2.0			
Au	to drain		Float type (Normally open) Option V stands for a timer type solenoid valve.					
Po	rt size		R2	R2 1/2	DIN flange 80			
We	eight	[kg]	245	270	350			
Co	mpliant standa	ards		CE/UKCA marking				
1 A	humidity 65 %]							

Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]

\*3 The operation range does not guarantee the use with normal air flow capacity. When operating conditions are different from the rated specifications, please select a model in accordance with Model Selection (page 3).

\*4 Install a circuit breaker with a sensitivity 30 mA.

eplacement Part
-----------------

р,

	nepiacement raits				
	Air dryer model	IDFA100F	IDFA125F	IDFA150F	
	Heavy-duty auto drain replacement part no.*5		ADH-E400		
	Dustproof filter set for condenser	IDF-F	L219	IDF-FL220	
*5 Part the l *6 The to a * A terr	number of only the exhaust mechanism replacement k nousing maximum operating pressure is 1.0 MPa as standard, k chieve 1.6 MPa when selecting option K. ninal block for remote operation, stop, operating, and e undard equipment	it excluding but it is possible error signals is inc	slude	Exhaust mec replacement	<u>hanis</u> kit

#### **Construction (Air/Refrigerant Circuit)**

#### IDFA100F/125F/150F

Refrigerated

air dryer

Auto drain

Symbol



Hot and humid air entering the air dryer is cooled down by the cooler re-heater (heat exchanger). The moisture which is condensed and separated is automatically exhausted by the auto drain. The air which has had its moisture removed is heated in two stages by the re-heater (heat exchanger) in the cooler re-heater and by the secondary heater, and is supplied to the outlet side as warm and dry air.

Housing (Use existing equipment.)

#### Secondary heater

Compressed air from which drainage has been exhausted exchanges heat with refrigerant which has been compressed by the refrigerator, to give the following effects:

- 1. The outlet air temperature increases, preventing condensation of the piping on the outlet side.
- 2. The amount of heat exhausted from the condenser is reduced.
- 3. Energy saving operation of the dryer is achieved by reducing the amount of heat exhausted from the condenser.

# IDFA100F/125F/150F Series

#### Dimensions

#### IDFA100F/125F



\*1 In addition to the overall length of the body, the filter mounting part (bracket) projects 10 mm.

#### Dimensions

Dimensior	IS												[mm]
Model	Port size	Α	В	С	D	E	F	G	K	L	М	Ν	Р
IDFA100F	R2	670	1120	1070 007	1100 1076	460	1275	335	20	710	107	700	750
IDFA125F	R2 1/2	700	1120	1270	207	655	1375	350	20	112	78	935	152

#### IDFA150F



\*1 In addition to the overall length of the body, the filter mounting part (bracket) projects 10 mm.

#### Dimensions

Dimensions [mm]							[mm]						
Model	Port size	A	В	С	D	E	F	G	K	L	М	N	Р
IDFA150F	DIN flange 80	950	1290	1332	268	720	1432	475	20	990	217	935	1030
21		Cach											



# IDFA E/F Series **Options**

For "How to Order" optional models, refer to pages 5, 7, 17 and 19.



#### **Option symbol**

IDFA3E to 11E

There is no heating of cooled, dehumidified air as it leaves the air drver. The air flow capacity with this option is smaller than that of the standard dryer. (The external dimensions are identical with the standard product.) \* Perform thermal insulation treatment for piping and equipment installed

after the dryer to prevent the formation of condensation.

Cool compressed air output

#### Air Flow Capacity

Model	<b>IDFA3E</b>	IDFA4E	IDFA6E	IDFA8E	IDFA11E	
Air flow capacity m <sup>3</sup> /h (ANR)	8	23	29	32	39	
Conditions: Iplet air pressure: 0.7 MPa, Iplet air temperature: 25 °C						

Outlet air temperature: 10 °C Ambient temperature: 25 °C



Option symbol **IDFA** all models Anti-corrosive treatment

This minimises the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfurous acid gas. (Corrosion cannot be completely prevented.)

Special epoxy coating: Copper tube and copper alloy parts.

The coating is not applied on the heat exchanger or around electrical parts, where operation may be affected by the coating.

Corrosion is not covered under warranty.



**Option symbol** With Chinese labels and **IDFA all models** a Chinese operation manual

In addition, Chinese labels are put on the external panels.

A Chinese operation manual is also included.

#### **Option symbol** Moderate pressure specification IDFA6E to 15E1 Auto drain bowl type: Metal bowl with level gauge

The auto drain is changed from the standard one to one with a moderate pressure specification.

A metal bowl with a level gauge which can confirm the water level is used for the auto drain.

#### Specifications

- 1. Maximum operating pressure: 1.6 MPa
- 2. Dimensions ··· same as standard products

#### **Replacement Parts**

Model	Auto drain assembly part no.	Note
IDFA6E to 15E1	IDF-S1926	The AD48-8-A-X2112 auto drain (bowl assembly) excluding the body, insulator, and one-touch fitting are included.

\* A new line of auto drain models was recently introduced in March 2019. The previous models and the new models do not have mounting interchangeability. For details, refer to page 29.

auto urani (DOWI	
ne body, insulator,	
re included.	







#### **Option symbol**

Moderate pressure specification IDFA100F to 150F

The maximum operating pressure is 1.6 MPa.

The internal drain piping material is changed from nylon to metal.

#### Specifications

- 1. Maximum operating pressure: 1.6 MPa
- 2. Dimensions ... same as standard products

#### Option symbol



The float type auto drain used in the standard air dryer is replaced with a heavy-duty auto drain (ADH4000-04) which enables the drainage to discharge more efficiently.

Bimeneterie	լոույ		
Model	Α		
IDFA4E	55		
IDFA6E	67		
IDFA8E, 11E	139		
IDFA15E1	47		

Dimensions

#### IDFA4E to 15E1





Heavy-duty auto drain

#### **Replacement Parts: Auto Drain**

Model	Replacement part no. (Description)	Configuration
IDFA4E to 15E1	ADH4000-04 (Heavy-duty auto drain)	Heavy-duty auto drain

# Options IDFA E/F Series

IDFA4E to 15E1

#### **Option symbol**

With a circuit breaker IDFA4E to 15E1, IDFA100F to 150F

A circuit breaker with cover is attached to the side of the air dryer. This saves additional electrical wiring at the time of installation.

#### IDFA4E to 15E1



Dimensions

Model	Α	В	С	D	E
IDFA4E, 6E, 8E, 11E	32	230	97	34	15
IDFA15E1	43	258	102	82	_

#### IDF100F to 150F

				Dimensions		[mm]
				Model	Α	В
			Ĩ	IDFA100F	509	525
	$\sim$	В		IDFA125F	505	535
				IDFA150F	628	537
- 1		6 1				

#### **Breaker Capacity and Sensitivity Current**

	-		
Voltage	Model	Breaker capacity	Sensitivity current
230 V type	IDFA4E-23, IDFA6E-23 IDFA8E-23, IDFA11E-23	5 A	
	IDFA15E1-23	10 A	30 mA
380/400 V type	IDFA100F, IDFA125F IDFA150F	15 A	



#### **Option symbol**

#### With a terminal block for power supply, run & alarm signal and remote operation

In addition to the terminals for the power supply, terminals for the operating signal and the error signal are also available. (No-voltage contact) Also, in the case of remote control, operate it from the power supply side while the air dryer switch remains ON.

Contact capacity: 230 VAC, 4 A 24 VDC, 5 A for operating and error signals.

- Minimum current value: 20 V, 5 mA (AC/DC) for operating and error signals.
- \* Terminal block for power supply, run & alarm signal and remote operation is mounted on the standard types of the IDFA100F to 150F.
  \* Please be sure to confirm the electric circuits with the drawings or instruction
- manual before using the output signal.

#### IDFA4E to 15E1

[mm]



Power cable outlet (Ø 17) Grommet with membrane

#### Dimonolono

Dimensions				
Model	Α	В	С	D
IDFA4E, 6E, 8E, 11E	32	230	67	179
IDFA15E1	43	258	77	158



#### Option symbol

With a timer controlled solenoid	
valve type auto drain	IDFA4E to 15E1 IDFA100F to 150F
(Applicable to moderate pressure)	

Drainage is discharged by controlling a solenoid valve with a timer. A strainer for solenoid valve protection and stop valve are also included. (Dimensions are the same as the standard type.)

Maximum operating pressure: 1.6 MPa (IDFA100F to 150F: 1.0 MPa)

\* The timer-type solenoid valve actuates once (for 0.5 s) every 30 s.

#### **Replacement Parts**

Model	Part no.	Note
IDFA4E to 15E1	IDF-S0198	230 VAC
IDFA100F to 150F	IDF-S0405	200 VAC

### A

Cool compressed air output

#### Cool outlet air (10 °C) can be supplied.

**Option symbol** 

The air flow with this option is smaller than that of the standard air dryer. (Refer to the table below.)

If the air dryer is used out of the scope of the rated specifications or conditions, select a model according to page 4 and apply the air flow capacity shown in the table below to the data .

\* Perform thermal insulation treatment for pipings and equipment installed after the dryer to prevent the formation of condensation.

#### **Air Flow Capacity**

Madal				Air flow capaci	ity m³/h (ANR)	)
	INIOUE	51	IDFA60-23-A	IDFA70-23-A	IDFA80-23-A	IDFA90-23-A
	Outlet air pressure dew point	10 °C	186	300	462	576

Rated conditions: Inlet air pressure: 0.7 MPa, Inlet air temperature: 35 °C, Outlet air temperature: 10 °C

#### Option symbol

Anti-corrosive treatment for copper tube

This minimises the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfurous acid gas. (Corrosion cannot be completely prevented.) Special epoxy coating: Copper tube and copper alloy parts. The coating is not applied on the heat exchanger or around electrical parts, where operation may be affected by the coating.

\* Failure due to corrosion is not covered under warranty.

### G

#### Option symbol

With Chinese labels and a Chinese operation manual

In addition, Chinese labels are put on the external panels. A Chinese operation manual is also included.



#### Option symbol With a heavy-duty auto drain (applicable to moderate pressure)

The float type auto drain used in the standard air dryer is replaced with a heavy-duty auto drain (ADH4000-04) which enables the condensate to discharge more efficiently. The product can be used for moderate pressure with this option.

Max. operating pressure: 1.6 MPa



\* The heavy-duty auto drain and piping materials (nipple, elbow) are shipped together with the main body of the air dryer. Customers are required to mount the parts to the air dryer.

#### Replacement Parts: Heavy-Duty Auto Drain





#### With an earth leakage breaker

The air dryer is equipped with an earth leakage breaker, reducing the electrical wiring required during installation.



## Options **IDFA** Series

#### Option symbol

#### With a terminal block for operating, error, and remote operation signals

In addition to power supply connection, terminal blocks for operating, error, and remote operation signals are available.

- The operating and error signals are no-voltage contact style.
- Operating signal...During operation: contact "close", During stop: contact "open"

Error signal...During error: contact "close", During stop: contact "open" Contact capacity...Rated load voltage: 240 VAC or less/24 VDC or less Max. load current: 5 A (Resistance load)/2 A (Induction load)

Min. applicable load: 20 VDC, 3 mA

• Power supply voltage is applied to the remote operation contact. The external switch is to be prepared by customers. Position holding switch (alternate type switch) or automatic return switch (momentary switch) can be used.





Option symbol

With a timer controlled solenoid valve type auto drain (applicable to moderate pressure)

Drainage is discharged by controlling a solenoid valve with a timer. A strainer for solenoid valve protection and a stop valve are also included.

Max. operating pressure: 1.6 MPa

#### Replacement Parts

Part no.	Note
IDF-S0534	200 to 230 VAC



# IDFA E/F Series Optional Accessories

	Features	Specifications	Applicable dryer
Dust-protecting filter set	Prevents a decline in the performance of the air dryer, even in a dusty atmosphere.	Max. ambient temperature 40 °C	IDFA3E to 75E
Foundation bolt set	Bolts for fixing the air dryer to the foundations. Easy to secure by striking its axle.	Stainless steel	IDFA4E to 75E IDFA100F to 150F

#### How to Order

Dust-protecting	filter	set
-----------------	--------	-----



Symbol	Applicable dryer
209	IDFA3E
202	IDFA4E
203	IDFA6E
204	IDFA8E
205	IDFA11E
206	IDFA15E1

# Foundation bolt set

#### • Applicable dryer

Symbol	Applicable dryer
500	IDFA4E to 15E1
501	IDFA100F to 150F

#### **Dust-protecting Filter Set/Dimensions**



#### **Foundation Bolt Set/Dimensions**

Dimensions					[mm]
Part no.	Applicable dryer	Nominal thread size	Material	Pcs. of 1 set	Α
IDF-AB500	IDFA4E to 15E1	M10	Staiplage steel	4	50
IDF-AB501	IDFA100F to 150F	IVITU	Starriess steer	4	70



# IDFA Series Optional Accessories

#### Foundation Bolt Set



				[mm]
Part no.	Nominal thread size	Material	Number of 1 set	Α
IDF-AB500	M10	Stainless steel	4	50

### Piping Adapter



For converting the thread type of an IN/OUT fitting for air dryers.

[mm]

[mm]

							լուո
Port no	Thread type	~	Ľ	Е	Motorial	Number of	
Part no.	Male thread A side	Female thread ${\bf B}$ side	C			Wateria	1 set
IDF-AP604	NPT1	Rc1	50	27	46		
IDF-AP606	NPT1 1/2	Rc1 1/2	55	31	54	Brass	2
IDF-AP607	NPT2	Rc2	65	30	70		

#### **Bypass Piping Set**

ID	F – BP 33	9
Appli	cable air dryer •	
Symbol	Applicable dryer	

	339	IDFA60
	340	IDFA70
	244	IDFA80
	341	IDFA90

Max. operating pressure: 1.0 MPa

 Not applicable to the moderate pressure specification Prepare a bypass piping set suitable for the specification.

#### For IDFA60: IDF-BP339

Weight: 5 kg



#### For IDFA70: IDF-BP340

Weight: 10 kg



#### For IDFA80/90: IDF-BP341



**SMC** 

[mm]

# **IDFA E** Series Auto Drain Replacement Parts: Previous and New Model Product Nos.

A new line of auto drain models, which feature new product numbers and a new shape, was recently introduced, with manufacturing starting in either March or June 2019 (depending on the model). The previous auto drain models and the new auto drain models do not have mounting interchangeability. Please check the serial number on the dryer specification label before ordering.

#### Auto drain (Bowl assembly)





Transparent bowl guard (Polycarbonate)

Dryer model	Auto drain (Bowl assembly) part no.		Manufacturing date	SERIAL No.
	Previous	AD38	Manufactured in February 2019 and before	XP and before
IDFA3E/4E	New	AD38-A	Manufactured in March 2019 and after	XQ and after
	Previous	AD48	Manufactured in February 2019 and before	XP and before
IDFA0E/0E/11E/13E1/22E/37E	New	AD48-A	Manufactured in March 2019 and after	XQ and after
	Previous	AD48	Manufactured in May 2019 and before	XS and before
IDFA55E/75E	New	AD48-A	Manufactured in June 2019 and after	XT and after

#### Option K: Moderate pressure specification (Auto drain bowl type: Metal bowl with level gauge)





Dryer model	Auto drain (Bowl assembly) part no.		Manufacturing date	SERIAL No.
	Previous	IDF-S0086*1	Manufactured in February 2019 and before	XP and before
IDFAGE/8E/TTE/TSET-K	New	IDF-S1926*2	Manufactured in March 2019 and after	XQ and after
	Previous	AD48-8-X2110	Manufactured in February 2019 and before	XP and before
IDFA22E/37E -K	New	AD48-8-A-X2112	Manufactured in March 2019 and after	XQ and after

\*1 Assembly of auto drain: AD48-8-X2110, one-touch fitting: KQ2H10-02AS, and insulator

\*2 Assembly of auto drain: AD48-8-A-X2112, one-touch fitting: KQ2H10-02AS, and insulator

#### Dryer specification label Serial number confirmation method



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# IDFA Series Specific Product Precautions 1

Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

#### Design

# 🕂 Warning

• Products with option "F" (low GWP refrigerant) selected use a slightly flammable refrigerant (R 1 2 3 4 yf). Therefore, be sure to avoid using the products in close proximity to open flames. Ensure compliance with local laws and regulations regarding the use and application of this product.



#### Installation

## **A** Caution

- Avoid locations where the air dryer will be in direct contact with wind or rain. (Avoid locations where relative humidity is 85 % or more.)
- Avoid locations where water, water vapour, salt water, or oil may splash on the product.
- Avoid locations where dust or other particles are present.
- Avoid locations where flammable or explosive gases are present.
- Avoid locations where corrosive gases, solvents, or combustible gases are present.
- Avoid locations which receive direct sunlight or radiated heat.
- Avoid locations where the ambient temperature exceeds the limits as mentioned below.

During operation: 2 to 40  $^{\circ}$ C (2 to 45  $^{\circ}$ C for the IDFA60 to IDFA150F) During storage: 0 to 5 0  $^{\circ}$ C (when there is no drain water inside of the piping)

- Avoid locations where temperature substantially changes.
- Avoid locations where strong magnetic noise occurs. (Avoid locations where strong electric fields, strong magnetic fields, or surge voltages occur.)
- Avoid locations where static electricity occurs or conditions which make the product discharge static electricity.
- Avoid locations where high frequencies occur.
- Avoid locations where damage is likely to occur due to lightning.
- Avoid installation on machines used for transporting, such as vehicles, ships, etc.
- Avoid locations at altitudes of 2000 meters or higher.
- Avoid locations where strong impacts or vibrations occur.
- Avoid conditions where a massive force strong enough to deform the product is applied or the weight from a heavy object is applied.
- Avoid locations with insufficient space for maintenance.
- Avoid locations where the ventilation grille is obstructed.
- Avoid locations where the air dryer will draw in high-temperature air discharged from an air compressor or other dryer.



Confirm that the exhaust air does not flow into the neighboring equipment.

- Avoid pneumatic circuits where rapid pressure fluctuations or flow speed changes are generated.
- When installing in locations where the dripping of condensation is a problem Depending on the operating conditions, the product and its downstream pipes could drip water due to condensation formed by supercooling. If this is a problem, install a drain receiver below this product or the condensation points and empty it regularly. Alternatively, wind additional insulation around the condensation points.

#### **Drain Tube**

### \land Caution

- A tube with an outside diameter of 10 mm (an O.D. of 12 mm for the IDFA60 to IDFA90) is attached as a drain tube. Use this tube to discharge condensate to a drain tank, etc.
- Do not use the drain tube in an upward direction. Do not bend or crush the drain tube. If it is unavoidable that the tube goes upward, make sure it only goes as far as the position of the auto drain outlet. The drain tube to be prepared should have 5 m or less in length. Otherwise, the auto drain will not operate correctly, which may cause air to be blown constantly or moisture not to be exhausted.

#### **Power Supply**

## **▲** Caution

- Connect the power supply to the terminal block.
- Install an earth leakage breaker<sup>\*1</sup> suitable to each model for the power supply.
- Maintain a voltage range within ±10 % of the rated voltage. (Do not use this product with continuous voltage fluctuations.)
- \*1 Select an earth leakage breaker with a leak current sensitivity of 30 mA.

Regarding the rated current, refer to the Applicable Earth Leakage Breaker Capacity.

 When a short-term interruption of the power supply (including momentary interruptions) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

Air Piping

### \land Caution

- Be careful to avoid any errors in connecting the air piping at the compressed air inlet (IN) and outlet (OUT).
- Flush the piping sufficiently in order to avoid any foreign matter such as dust, sealant tape, liquid gasket, etc., before connecting piping. Foreign matter in the piping can cause cooling failure or drainage failure.
- Inlet and outlet compressed air connections should be made removable by using a union, etc.
- Provide bypass piping to make it possible to do maintenance without stopping the air compressor.
- When tightening the inlet/outlet air piping, firmly hold the port on the air dryer with a pipe wrench, etc.
- Use pipes and fittings that can endure the operating pressure and temperature. Connect them firmly to prevent air leakage.
- Do not allow the load of the piping to lie directly on the air dryer. When mounting any part, such as an air filter, on the fitting at the compressed air inlet or outlet port, support the part to prevent excessive force from being applied to the product.
- Be careful not to let the vibrations of the air compressor transmit.
- If a metallic flexible tubing is used for the inlet/outlet air piping, abnormal noise might be generated in the piping. In such cases, please use steel tubing instead.
- If the temperature of the compressed air on the inlet side is over max. operating temperature, place an aftercooler after the air compressor. Or, lower the temperature of the place where the air compressor is installed to below max. operating temperature.
- If the air supply generates high pressure fluctuations (pulsations), take appropriate countermeasures, such as installing an air tank.





# IDFA Series Specific Product Precautions 2

Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

#### Air Piping

# **▲** Caution

- If rapid pressure fluctuations or flow changes occur, install a filter on the dryer outlet to prevent condensate from splashing.
- Variations in operating conditions may cause condensation to form on the surface of the outlet piping. Apply thermal insulation around the piping to prevent condensation from forming.



#### IDFA4E to 15E1

Compressed air inlet Compressed air outlet



IDFA 60 to 90



#### **Protection Circuit**

### A Caution

When the air dryer is operated in the following cases, the protection circuit will activate, the light will turn off and the air dryer will come to stop.

- The compressed air temperature is too high.
- The compressed air flow rate is too high.
- The ambient temperature is too high. (40 °C or higher (45 °C or higher for the IDFA60 to IDFA150F))
- $\bullet$  The fluctuation of the power supply voltage is beyond  $\pm 10~\%$  of the rated voltage.
- The air dryer is drawing in high temperature air exhausted from an air compressor or other dryer.
- The ventilation grille is obstructed by a wall or clogged with dust.

#### Transportation and Installation

### \land Warning

Be sure to follow the instructions below for transporting the product.

- The product is filled with refrigerant. Transport it (by land, sea or air) in accordance with laws and regulations specified.
   Products with option "F" (low GWP refrigerant) selected cannot be transported by air as the products use a slightly flammable refrigerant (R1234yf).
- When carrying the product, be careful not to let it drop or fall over, and use a forklift.
- Do not lift the product by holding the panel, fittings or piping.
- Never lay the product down for transportation. This may lead to damage to the product.

• The product is heavy and has potential dangers in transportation. Be sure to follow the instructions above.

#### **Compressor Air Delivery**

### A Caution

Since the auto drain is designed in such a way that the valve remains open unless the air pressure rises to 0.1 MPa or higher, air will blow out from the drain outlet at the time of air compressor start up until the pressure increases. Therefore, if an air compressor has a small air delivery, the pressure may not be sufficient.

# Auto Drain

The auto drain may not function properly, depending on the quality of the compressed air. Check the operation once a day.



# IDFA Series Specific Product Precautions 3

Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

#### **Cleaning of Ventilation Area**

# **▲** Caution

If the dustproof filter or ventilation area is clogged with dust or particles, the cooling capacity will decrease.

Clean the product once a month by using a vacuum cleaner or an air blow gun without damaging the dustproof filter.

#### **Time Delay for Restarting**

# **A** Caution

Allow at least three minutes before restarting the air dryer. Otherwise, the protection circuit will activate, the light will turn off and the air dryer will not start up.

#### Modifying the Standard Specifications

## **A** Caution

Do not modify the standard product using any of the optional specifications once the product has been supplied to a customer. Check the specifications carefully before selecting an air dryer. In addition, do not disassemble or modify the product. Products which have been disassembled and/or modified cannot be guaranteed.

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Refrigerant with GWP reference						
	Global	Warming Potential	(GWP)			
	Regulation (ELI)	Fluorocarbon Emissio	ns Control Act (Japan)			
Refrigerant	2024/573, AIM Act 40 CFR Part 84	GWP value labelled on products	GWP value to be used for reporting the calculated amount of leakage			
R134a	1,430	1,430	1,300			
R404A	3,922	3,920	3,940			
R407C	1,774	1,770	1,620			
R410A	2,088 146	2,090	1,920			
R454C		145	146			
R1234yf	0.501	_	—			

\*1 This product is hermetically sealed and contains fluorinated greenhouse gases.

\*2 For refrigerant type used in this product, refer to the product specifications.



$\wedge$	Safety I	nstructions	These safety instructions damage. These instructi	s are intended to prevent hazardous situations and/or equipment ons indicate the level of potential hazard with the labels of
			"Caution," "Warning" of followed in addition to In	or " <b>Danger</b> ." They are all important notes for safety and must be aternational Standards (ISO/IEC) <sup>1)</sup> , and other safety regulations.
Â	Danger:	<b>Danger</b> indicates a hazard wit which, if not avoided, will result injury.	h a high level of risk It in death or serious	<ol> <li>ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.</li> <li>ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.</li> </ol>
Â	Warning:	<b>Warning</b> indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.		IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements) ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
Ŵ	Caution:	<b>Caution</b> indicates a hazard wi which, if not avoided, could re injury.	th a low level of risk sult in minor or moderate	etc.

### ▲ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications. Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

#### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
  - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
  - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
  - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
  - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
  - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

Caution
We develop, design, and manufacture our products to be

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries. Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

#### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

#### Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.<sup>2)</sup> Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

#### **Compliance Requirements**

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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