

# EVOSTA 2 OEM

ELECTRONIC CIRCULATORS  
FOR HEATING AND AIR CONDITIONING SYSTEMS





# EVOSTA 2 OEM

## WET ROTOR ELECTRONIC CIRCULATORS



### TECHNICAL DATA

**Operating range:** 0-4 m<sup>3</sup>/h with head up to 7,5 metres.  
**Pumped liquid temperature range:** from -10 °C to +110 °C  
**Maximum ambient temperature:** + 70°C with max. liquid Temp. +70 °C  
**Working pressure:** 10 bar (1000 kPa)  
**Protection class:** IPX5  
**Insulation class:** F  
**Installation:** with horizontal motor axis  
**Standard power input:** single-phase 1 x 230 V~ 50/60 Hz  
**Power cable:** molex plug with 1.5m cable  
**Signal cable:** plug with 1.5 m cable (OEM versions only)  
**Pumped liquid:** Clean, free of solids and mineral oils, non-viscous, chemically neutral, with properties similar to water. (max. glycol 50%)

### APPLICATIONS

Low energy consumption electronic pump designed to meet the requirements of the OEM industry in terms of performance and ergonomics.

### ADVANTAGES

EVOSTA 2 OEM is the new range of DAB circulators that combines the strength of the mechanical circulator with the benefits of the electronic circulator. Thanks to the permanent magnet synchronous motor, the frequency converter and the energy efficiency index of  $EEL \leq 0.20$ , as well as the IPX5 protection class and the integrated breather plug, the EVOSTA 2 OEM family ranks as one of the best products in the category in terms of performance and reliability. The range of EVOSTA 2 OEM circulators is the perfect substitute for old three-speed circulators due to its compact size and all-round performance. The product is also extremely user-friendly, with a single key for sequential setting and direct access to the motor shaft for unlocking this when necessary.

### CONSTRUCTION FEATURES

Cast iron pump body with cataphoresis paint coating and wet rotor motor. Steel motor casing, technopolymer impeller. Ceramic motor shaft on ceramic bushings lubricated by the pumped liquid. Stainless steel rotor liner, stator liner and closing flange. Graphite thrust ring. EPDM seal ring and brass air breather plug. Thanks to the internal protection of the motor, the pump does not require overload protection.

### CONTROL PANEL

The functions of the EVOSTA 2 SOL circulators can be modified at the control panel on the cover of the electronic control device. The pump has nine settings that can be selected at the MODE button.

Six illuminated segments on the display indicate the settings of the pump.

The EVOSTA OEM PWM version can be controlled from an external control unit using the PWM (Pulse Width Modulation) digital signal. The setpoint of the adjustment curve can be of the following types:

- Proportional pressure
- Constant speed.

This is set through the PWM signal duty cycle, applied according to the VDMA Einheitsblatt 24244 standard "Wet runner circulating pumps – Specification of PWM control signals".

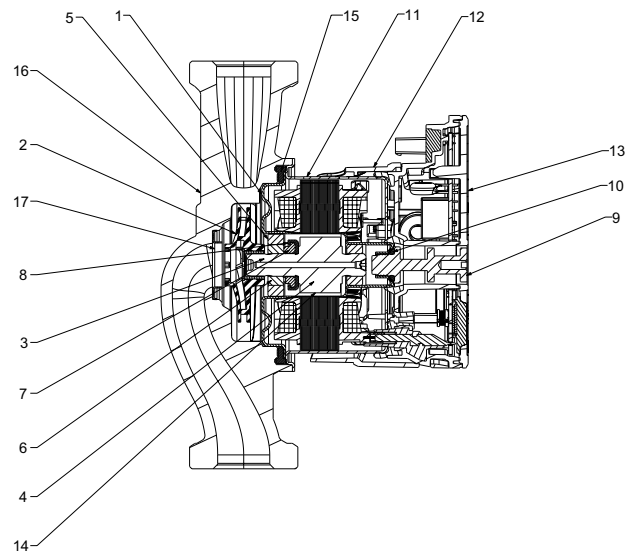
Moreover, a PWM signal on the output of the board indicates the operating mode of the circulator, as specified below.

# EVOSTA 2 OEM

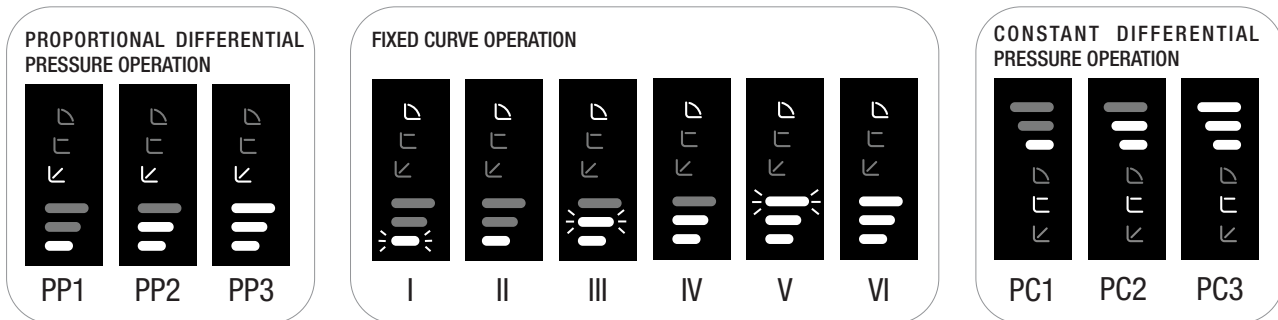
## WET ROTOR ELECTRONIC CIRCULATORS

### MATERIALS

N.	PARTS	MATERIALS
1	STATOR LINER	AISI 316
2	IMPELLER	ULTRASON
3	SHAFT	ALUMINA
4	ROTOR	Fe
5	BUSH HOLDER	BRASS
6	BUSH	ALUMINA
7	THRUST BUSH	GRAPHITE
8	THRUST BOX	EPDM
9	BREATHER PLUG	BRASS
10	O-ring	EPDM
11	MOTOR CASING	AISI 304
12	ENCLOUSER SHELL	POLYCARBONATE
13	ENCLOUSER	POLYCARBONATE
14	ROTOR LINER	AISI 304
15	GASKET	EPDM
16	PUMP BODY	CAST IRON-BRONZE (SAN VERSION)
17	SEAL RING	AISI 304

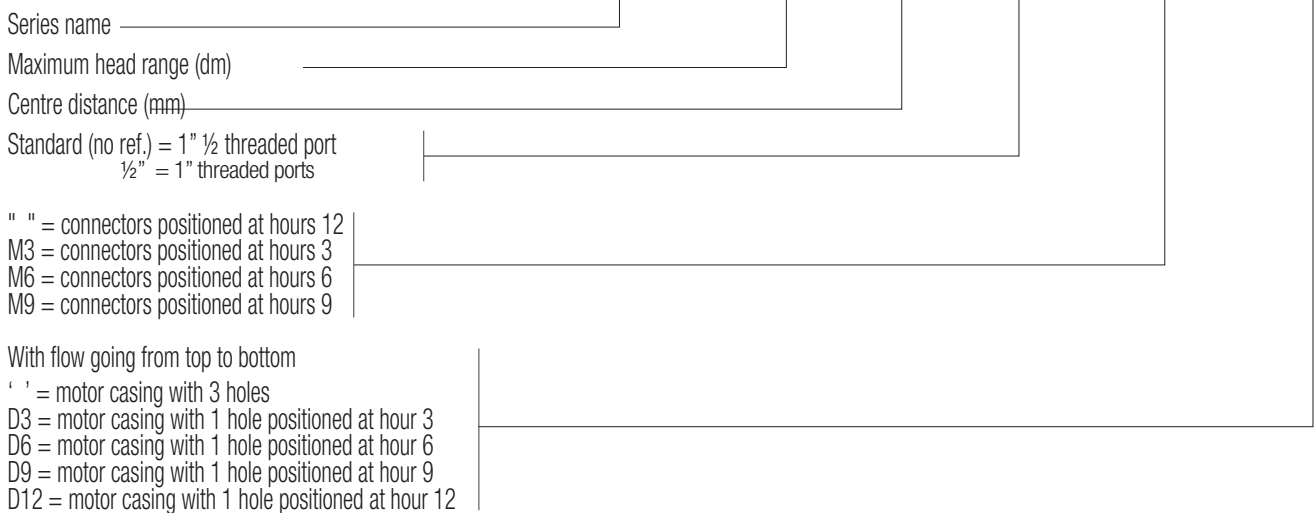


### OPERATING MODES



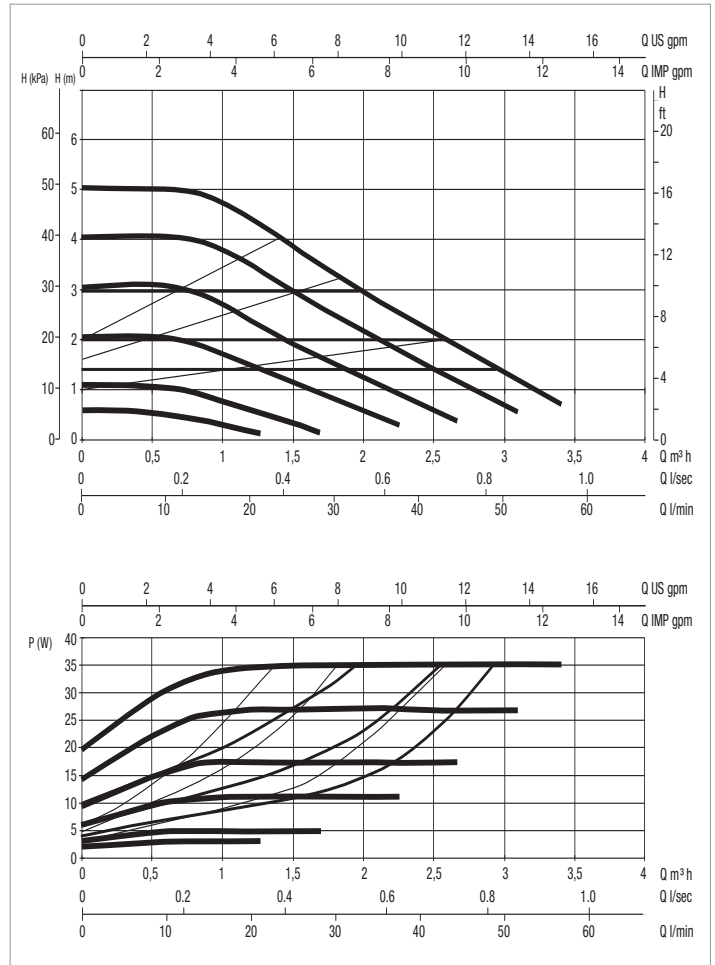
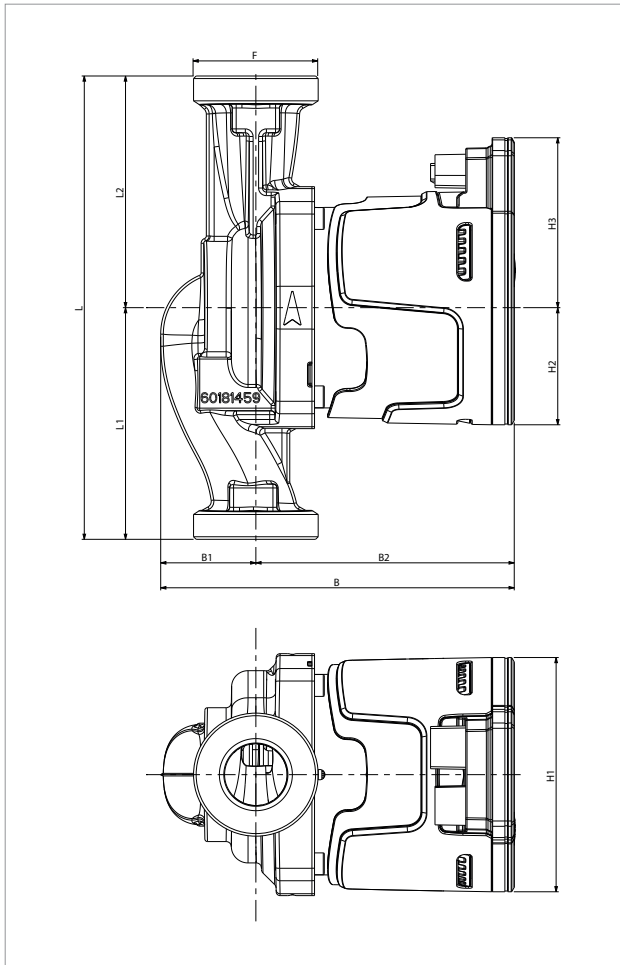
- Legend:  
(example)

EVOSTA 2 OEM 75 / 130 1/2" M9 D6



# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)



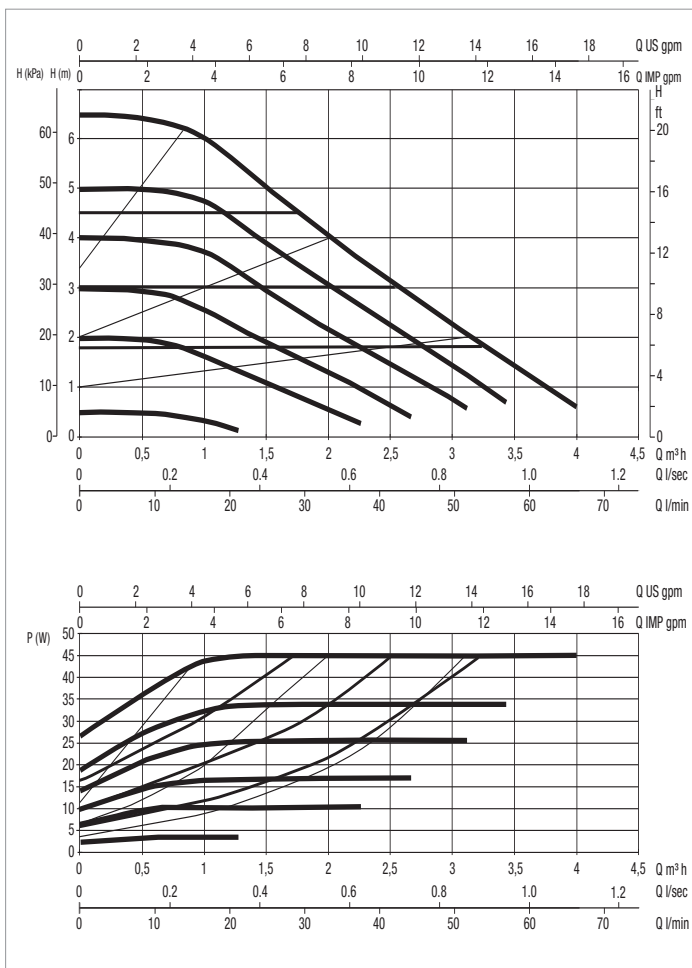
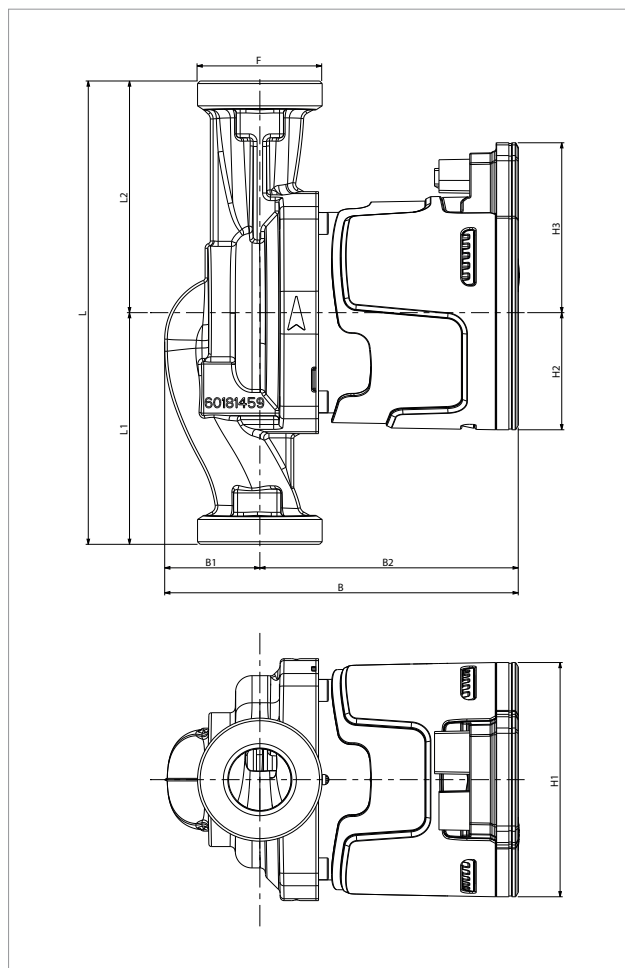
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE mm	POWER INPUT 50 Hz	P1 MAX W	P1 MIN W	In MAX A	In MIN A	EEl detail 3	GRADE IP
EVOSTA2 50/130 OEM PWM (1/2")	130	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5
EVOSTA2 50/130 OEM (1/2")	130	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5
EVOSTA2 50/130 OEM PWM (1")	130	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5
EVOSTA2 50/130 OEM (1")	130	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5
EVOSTA2 50/180 OEM PWM (1")	180	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5
EVOSTA2 50/180 OEM (1")	180	1x230 V ~	35	2	0.29	0.026	<0,20	IP X5

MODEL	L	L1	L2	B	B1	B2	F	H	H1	H2	H3	Q.TY X PALLET
EVOSTA2 50/130 OEM PWM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 50/130 OEM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 50/130 OEM PWM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 50/130 OEM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 50/180 OEM PWM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144
EVOSTA2 50/180 OEM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)



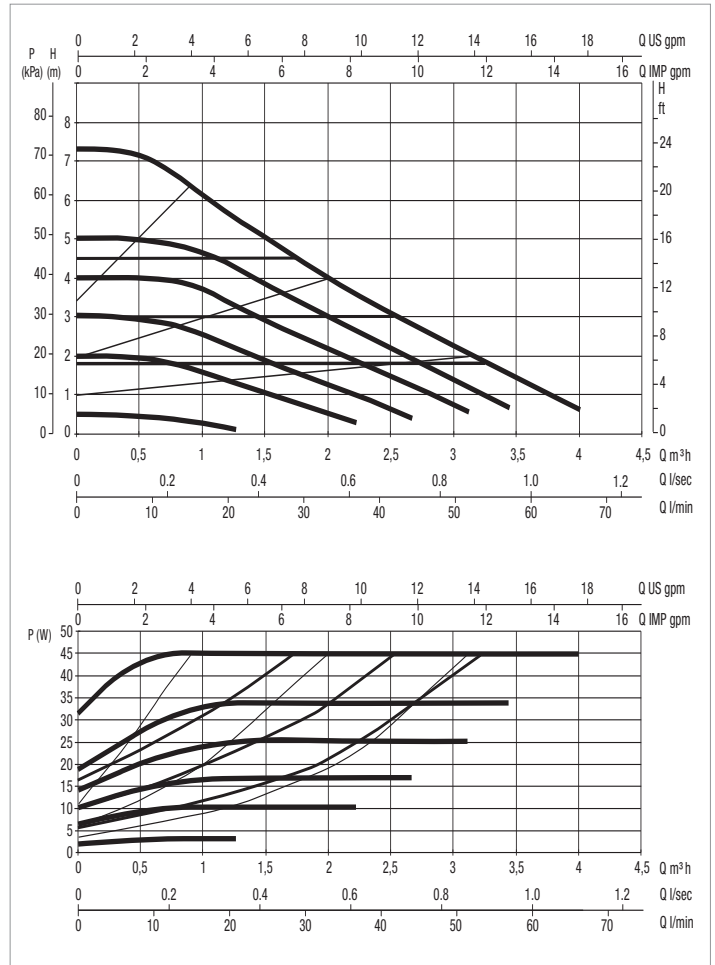
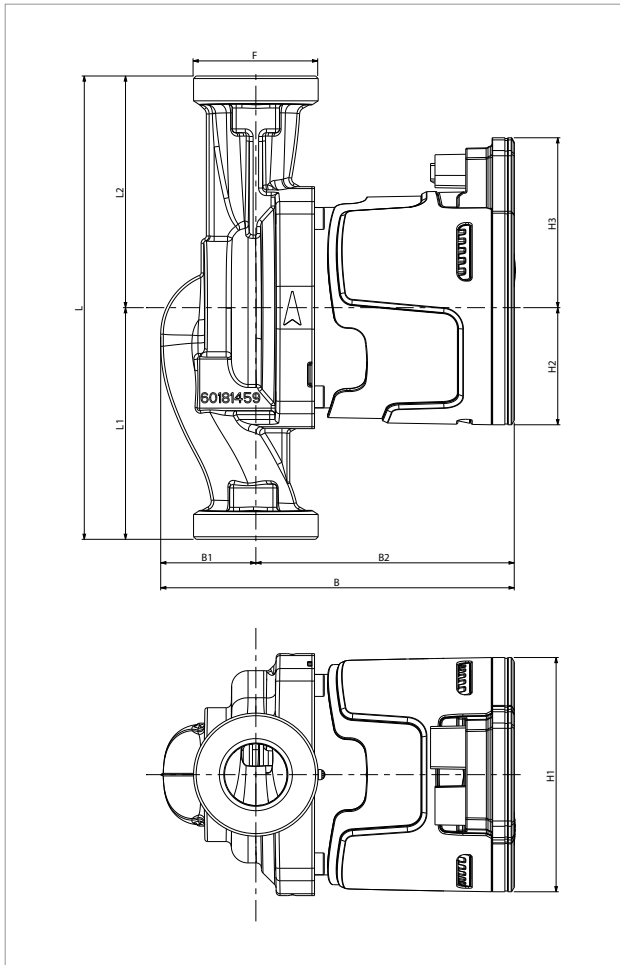
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE mm	POWER INPUT 50 Hz	P1 MAX W	P1 MIN W	In MAX A	In MIN A	EEI detail 3	GRADE IP
EVOSTA2 65/130 OEM PWM (1/2")	130	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5
EVOSTA2 65/130 OEM (1/2")	130	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5
EVOSTA2 65/130 OEM PWM (1")	130	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5
EVOSTA2 65/130 OEM (1")	130	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5
EVOSTA2 65/180 OEM PWM (1")	180	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5
EVOSTA2 65/180 OEM (1")	180	1x230 V ~	45	2	0.35	0.026	<0,20	IP X5

MODEL	L	L1	L2	B	B1	B2	F	H	H1	H2	H3	Q.TY X PALLET
EVOSTA2 65/130 OEM PWM (1/2")	130	65	65	135	36	99	1"	94	91	45.5	66	240
EVOSTA2 65/130 OEM (1/2")	130	65	65	135	36	99	1"	94	91	45.5	66	240
EVOSTA2 65/130 OEM PWM (1")	130	65	65	135	36	99	1" 1/2	94	91	45.5	66	240
EVOSTA2 65/130 OEM (1")	130	65	65	135	36	99	1" 1/2	94	91	45.5	66	240
EVOSTA2 65/180 OEM PWM (1")	180	90	90	135	36	99	1" 1/2	94	91	45.5	66	144
EVOSTA2 65/180 OEM (1")	180	90	90	135	36	99	1" 1/2	94	91	45.5	66	144

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)



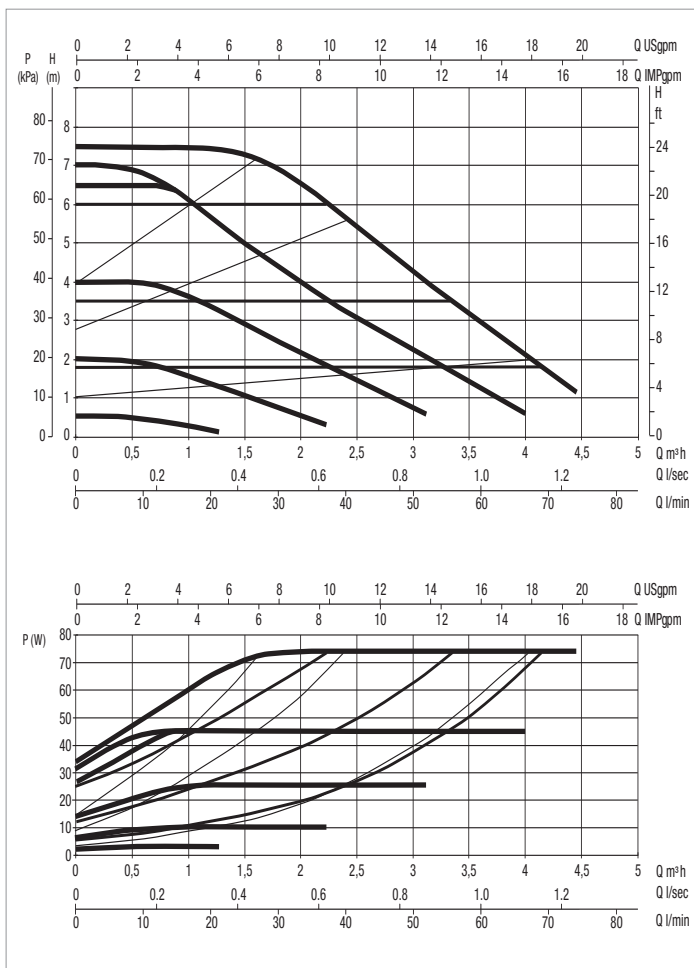
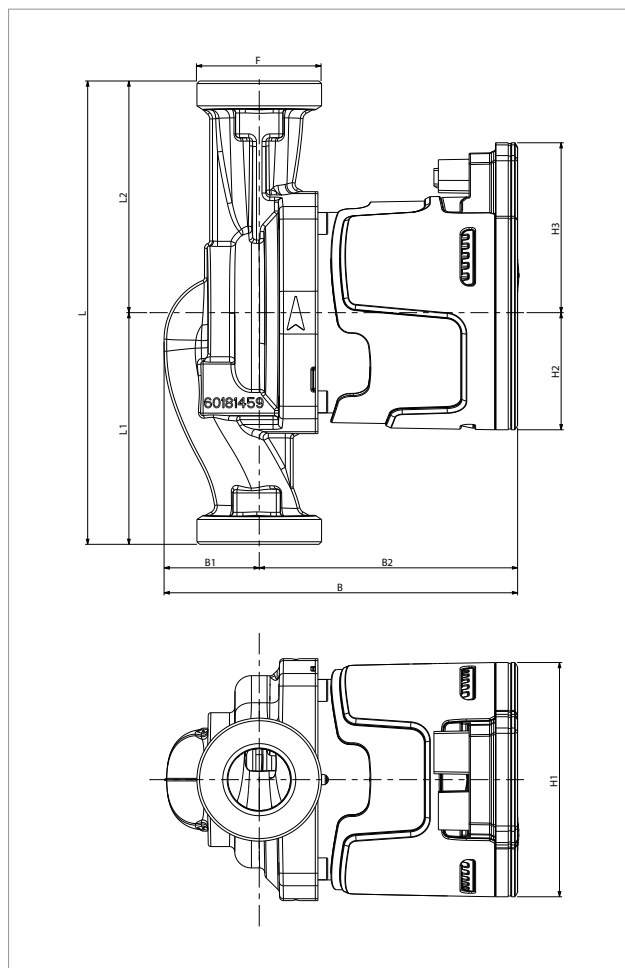
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE mm	POWER INPUT 50 Hz	P1 MAX W	P1 MIN W	In MAX A	In MIN A	EEl detail 3	GRADE IP
EVOSTA2 70/130 OEM PWM (1/2")	130	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5
EVOSTA2 70/130 OEM (1/2")	130	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5
EVOSTA2 70/130 OEM PWM (1")	130	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5
EVOSTA2 70/130 OEM (1")	130	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5
EVOSTA2 70/180 OEM PWM (1")	180	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5
EVOSTA2 70/180 OEM (1")	180	1x230 V ~	45	2	0,35	0,026	<0,20	IP X5

MODEL	L	L1	L2	B	B1	B2	F	H	H1	H2	H3	Q.TY X PALLET
EVOSTA2 70/130 OEM PWM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 70/130 OEM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 70/130 OEM PWM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 70/130 OEM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 70/180 OEM PWM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144
EVOSTA2 70/180 OEM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)



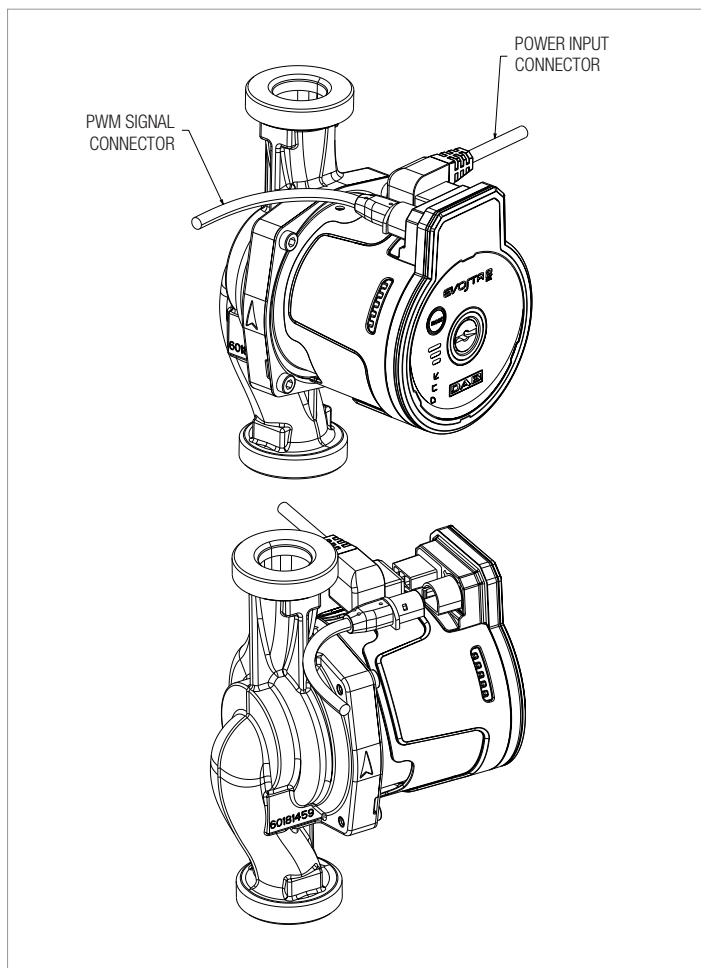
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE mm	POWER INPUT 50 Hz	P1 MAX W	P1 MIN W	In MAX A	In MIN A	EEI detail 3	GRADE IP
EVOSTA2 75/130 OEM PWM (1/2")	130	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5
EVOSTA2 75/130 OEM (1/2")	130	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5
EVOSTA2 75/130 OEM PWM (1")	130	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5
EVOSTA2 75/130 OEM (1")	130	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5
EVOSTA2 75/180 OEM PWM (1")	180	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5
EVOSTA2 75/180 OEM (1")	180	1x230 V ~	74	2	0,57	0,026	<0,20	IP X5

MODEL	L	L1	L2	B	B1	B2	F	H	H1	H2	H3	Q.TY x pallet
EVOSTA2 75/130 OEM PWM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 75/130 OEM (1/2")	130	65	65	135	36	99	1"	94	91	45,5	66	240
EVOSTA2 75/130 OEM PWM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 75/130 OEM (1")	130	65	65	135	36	99	1" 1/2	94	91	45,5	66	240
EVOSTA2 75/180 OEM PWM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144
EVOSTA2 75/180 OEM (1")	180	90	90	135	36	99	1" 1/2	94	91	45,5	66	144

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)



POWER INPUT CABLE			PWM - SIGNAL CABLE		
No.	COLOUR	SIGNAL	No.	COLOUR	SIGNAL
1	YELLOW / GREEN	GROUND	1	BROWN	PWM IN
2	BLUE	NEUTRAL	2	BLUE	REFERENCE
3	BROWN	LINE	3	BLACK	PWM OUT

MODEL	Cable length
<b>POWER INPUT CONNECTOR *</b>	1.5 m
<b>PWM SIGNAL CONNECTOR *</b>	1.5 m

\* available on request

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)

## INPUT PWM SIGNAL

**Inactive level:** 0V

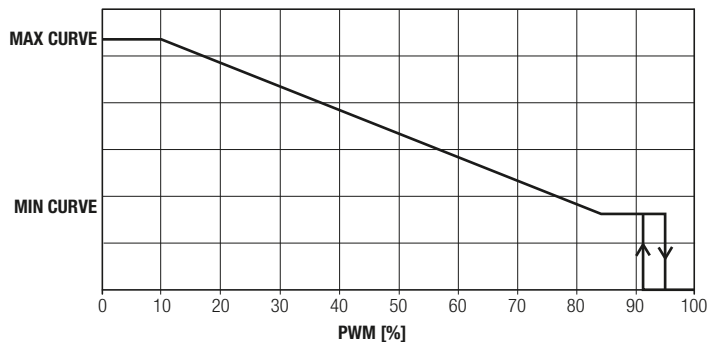
**Active level** from 4V-24V

**Minimum current of active level:** 5 mA

**Frequency:** 100Hz - 5 kHz

**Insulation class:** Class 2

**ESD class:** Compliance with IEC 61000-4-2 ( ESD )



OPERATING AREA	DUTY CICLE PWM
STANDBY MODE	> 95 % / ≤ 100 %
HYSTERESIS AREA	> 91 % / ≤ 95 %
MINIMUM SETPOINT	> 84 % / ≤ 91 %
VARIABLE SETPOINT	≥ 10 % / ≤ 84 %
MAXIMUM SETPOINT	< 10 %

## OUTPUT PWM SIGNAL (for PWM Standard products)

**Type:** open collector

**Maximum voltage:** 24V

**Maximum current to output transistor:** 50 mA

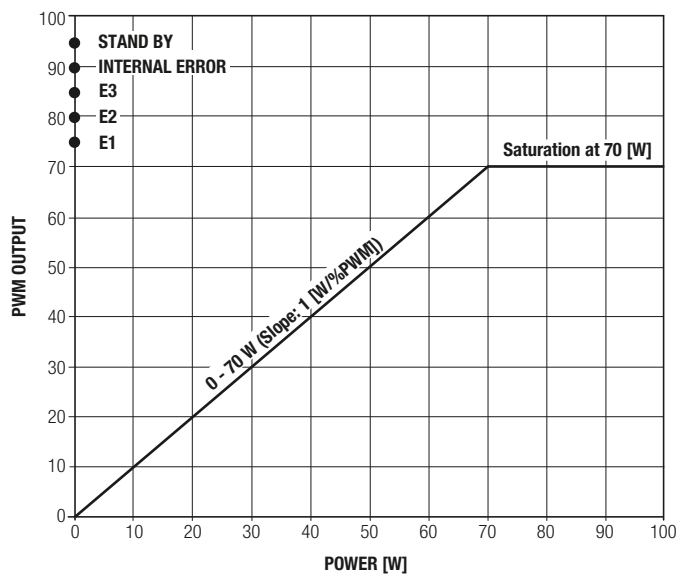
**Maximum power to output resistor:** 125 mW

**Maximum power to 36 V output zener:** 300 mW

**Frequency:** 75 Hz +/- 2%

**Insulation class:** class 2

**ESD class:** Compliance with IEC 61000-4-2 ( ESD )



OPERATING AREA	DUTY CICLE PWM
PUMP ON (see PWM OUTPUT / POWER graph)	1%-70%
ERROR 1 DRY RUN	75%
ERROR 2 ROTOR BLOCKED	80%
ERROR 3 SHORT CIRCUIT	85%
INTERNAL ERROR	90%
STANDBY (STOP) FROM PWM SIGNAL	95%

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)

## OUTPUT PWM SIGNAL

(for PWM products with flow feedback)

**Type:** open collector

**Maximum voltage:** 24V

**Maximum current to output transistor:** 50 mA

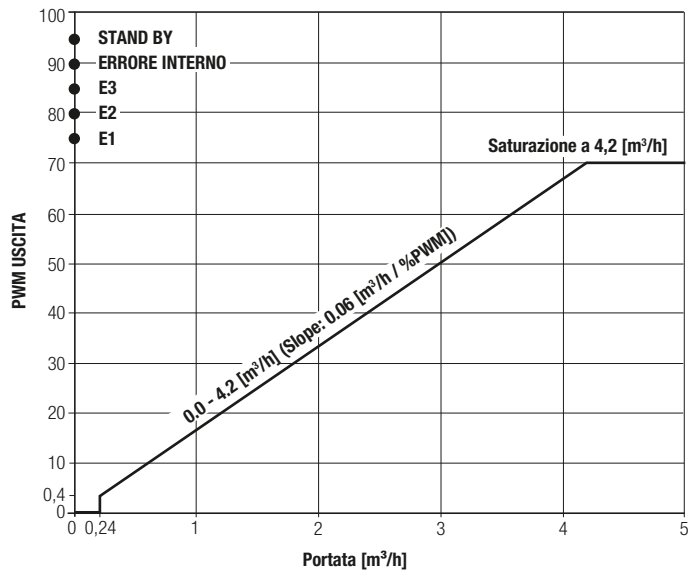
**Maximum power to output resistor:** 125 mW

**Maximum power to 36 V output zener:** 300 mW

**Frequency:** 75 Hz +/- 2%

**Insulation class:** class 2

**ESD class:** Compliance with IEC 61000-4-2 ( ESD )



OPERATING AREA	DUTY CICLE PWM
PUMP ON (see PWM OUTPUT / POWER graph)	1% - 70%
ERROR 1 DRY RUN	75%
ERROR 2 ROTOR BLOCKED	80%
ERROR 3 SHORT CIRCUIT	85%
INTERNAL ERROR	90%
STANDBY (STOP) FROM PWM SIGNAL	95%

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)





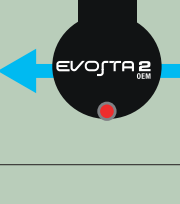
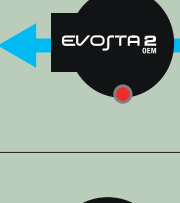
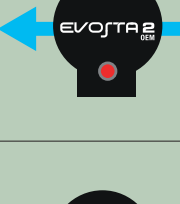

## ROTATION READING TABLE

	DRAINAGE HOLES ON MOTOR CASE	
	POSITION 1	POSITION 3
	STANDARD CONFIGURATION	STANDARD CONFIGURATION
	M9D6	M9
	N/A	N/A
	N/A	M3
	M9D3	M9
	M6D3	M6
	N/A	N/A
	N/A	STANDARD CONFIGURATION

# EVOSTA 2 OEM - ELECTRONIC CIRCULATORS FOR DOMESTIC HEATING AND AIR CONDITIONING SYSTEMS SINGLE, WITH UNIONS

Liquid temperature range: from -10°C to +110°C - Maximum operating pressure: 10 bar (1000 kPa)

## ROTATION READING TABLE

	DRAINAGE HOLES ON MOTOR CASE	
	POSITION 1	POSITION 3
	M6D12	M6
	M3D12	M3
	N/A	N/A
	N/A	M9
	M3D9	M3
	M12D9	STANDARD CONFIGURATION
	N/A	N/A
	N/A	M6





**DAB**  
PUMPS SELECTOR

On-line product selection



**DAB PUMPS LTD.**  
Unit 6 Gilberd Court  
Newcomen Way, Severalls Park  
CO4 9WN  
Colchester  
ordersuk@dwtgroup.com  
Tel. +44 0333 777 5010



**DAB PUMPS IBERICA S.L.**  
Calle Verano 18-20-22  
28850 - Torrejón de Ardoz - Madrid  
Spain  
Info.spain@dwtgroup.com  
Tel. +34 91 6569545



**DAB PUMPS DE MÉXICO, S.A. DE C.V.**  
Av Amsterdam 101 Local 4  
Col. Hipódromo Condesa,  
Del. Cuauhtémoc CP 06170  
Ciudad de México  
Tel. +52 55 553 2621



**DAB PUMPS BV**  
'tHofveld 6 C1  
1702 Groot Bijgaarden - Belgium  
info.belgium@dwtgroup.com  
Tel. +32 2 4668353



**DAB PUMPS HUNGARY KFT.**  
H-8800  
Nagykanizsa, Buda Ernő u.5  
Hungary  
Tel. +36 93501700



**DAB PUMPS SOUTH AFRICA (PTY) LTD**  
Twenty One industrial Estate,  
16 Purlin Street, Unit B, Warehouse 4  
Olifantsfontein -1667 - South Africa  
info.sa@dwtgroup.com  
Tel. +27 12 361 3997



**DAB PUMPS B.V.**  
Statenlaan, 4  
5223 LA, 's-Hertogenbosch  
Nederland  
info.nl@dabpumps.com  
Tel. +31 416 387280



**DAB PUMPS POLAND Sp. z o.o.**  
Ul. Cieslewskich 35K  
03-017 Warszawa - Poland  
sprzedaz@dabpumps.com.pl



**DAB PUMPS (QINGDAO) CO. LTD.**  
No.10 Xindong Road  
Jiulong Town,  
Jiaozhou City  
266319 Qingdao (Shandong) - China  
sales.cn@dwtgroup.com  
Tel. +86 400 186 8280



**DAB PUMPS FRANCE SAS**  
Tour Ariane, Paris la Défense 9  
5, Place de la Pyramide  
92800 Puteaux - France  
info.fr@dabpumps.com  
Tel. +33 (0)6 79 63 05 46  
+33 (0)7 89 01 53 35



**DAB PUMPS INC.**  
3226 Benchmark Drive  
Ladson, SC 29456 - USA  
info.usa@dwtgroup.com  
Tel. 1- 843-797-5002  
Fax 1-843-797-3366



**DAB PUMPS OCEANIA PTY LTD**  
426 South Gippsland Highway,  
Dandenong South VIC 3175 - Australia  
info.oceania@dwtgroup.com  
Tel. +61 1300 378 677



**DAB PUMPS GMBH**  
Am Nordpark 3  
D - 41069 Mönchengladbach - Germany  
info.germany@dwtgroup.com  
Tel. +49 2161 47388-0  
Fax +49 2161 47388-36



**DAB PUMPS CANADA INC.**  
333 Bay Street, Suite 4600, Toronto,  
Ontario, M5H 2S5, - Canada  
orders@dwtgroup.ca  
Tel. 1-833-322-7867



**PT DAB PUMPS INDONESIA**  
Satrio Tower lantai 26  
unit C-D, Jl. Prof. Dr. Satrio Kav. C4,  
Kel. Kuningan Timur, Kec. Setiabudi, Kota Adm.  
Jakarta Selatan, Prov. DKI Jakarta. - Indonesia  
Tel. +62 2129222850