

## Product Data Sheet efficiency Pack eP M 050.100 HP (v2)



**HEAT TO CLEAN ELECTRICITY**  
compact - modular - profitable

<b>Thermal Input Power</b>	560 - 1100 kW	
<b>Max. Rated Output (active electrical power)</b>	100 kW electric net 124 kW electric gross	
<b>Working Fluid</b>	Standard refrigerant (non-toxic, non-flammable) with POE oil	
<b>Design Guidelines</b>	<p>Designed and manufactured according to norms and standards:</p> <ul style="list-style-type: none"> <li>■ Pressure Equipment Directive 2014/68/EU</li> <li>■ Machinery Directive 2006/42/EC</li> <li>■ EMC Directive 2014/30/EU</li> <li>■ DNV-GL RU-Ship</li> </ul>	
<b>System Components</b>	Hot-water circuit	Safety devices for hot water circuit: safety relieve valve, pressure and temperature limit switches
	ORC system	Compact module containing: evaporator, expansion machine with integrated asynchronous generator, feed pump, bypass valves, plate condenser (water-cooled)
	Electric cabinet	ORC Control system, suitable for remote monitoring, IP54 Main circuit breaker, individual breakers for main consumers Power measurement (for controls, not calibrated for billing) Data interface
	Frequency converter	Variable speed drive for feed pump

## Hydraulic Interface

		High temperature water circuit (heat input)	Cooling circuit (condenser loop)	Low temperature water/ jacket cooling (heat input, optional)
Permissible operating temperature	°C	+110 ... +145	-5 ... +40	+75 ... +109 +95 (necessary for nominal rated power capacity)
Permissible temperature (TS)	°C		+165	+120
Volume flow	m <sup>3</sup> /h	≥ 25	≥ 32	≥ 11
Connection	EN1092-1	2 x DN80 / PN16	2 x DN80 / PN16	2 x DN65 / PN16
Pressure	bar <sub>g</sub>		5.0 ... 7.5	1 ... 7
Permissible pressure (PS)	bar <sub>g</sub>		9	10
Composition	-		DM-water with 40 % propylene glycol	DM-water with max. 50 % glycol

## Data and Signal Interface

- Data exchange to external (e.g. customer energy management system) via OPC UA or Modbus TCP
- External enabling signal (ext. floating NOC)
- External emergency stop signal (ext. floating NCC)
- ORC-OK signal (int. floating NOC)
- ORC in operation signal (int. floating NOC)
- Internet connection for remote maintenance must be supplied by site operator (ethernet, wireless or cellular)

## Maximum Sound Emission (full load)

Sound pressure level in 10 m distance L<sub>pA,10m</sub>: < 76 dB(A)

## Ambient Conditions

DIN EN 60721-3-6 (applied classes: 6K3, 6B1, 6C2, 6S2, and 6M2) max. +50 °C for electrical cabinet

## Dimensions

Approx. 1180 x 1400 x 1982 mm

## Weight (filled with refrigerant)

Approx. 2.300 kg plus electrical cabinet (130 kg)

## Storage

< 1 year, DIN EN 60721-3-1 (IE14), rel. humidity < 95 %

## Transport

DIN EN 60721-3-2 (IE 23)

## Operation

Operating time IEC S1 (continuous operation)

Time between overhaul (TBO) 15 years or 120.000 hours

## Electrical Data

<b>Auxiliaries Supply</b>			
$V_{nom}$	-	380-415 V (3~+PE), 50 Hz	440-480 V (3~+PE), 60 Hz
$P_{maxSupply}$	<i>kW</i>	29	29
$S_{maxSupply}$	<i>kVA</i>	36	36
$I_{maxSupply@0.9 \cdot VNom}$	<i>A<sub>eff</sub></i>	58	48
cos phi	-	0,8	0,8
Integrated main fuse $I_{CW}$ (max. 1 s)	-	none	
Short circuit current capability $I_{CW}$ (max. 1 s)	<i>kA</i>	2	
<b>Direct grid connection via generator connection box</b>			
$V_{nom}^1$	-	380-415 V (3~ + PE), 50 Hz	440-480 V (3~+PE), 60 Hz
$P_{nom/max}$	<i>kW</i>	124	124
$S_{nom}$	<i>kVA</i>	141	141
$I_{max@0.9 \cdot Vnom}$	<i>A<sub>eff</sub></i>	236	196
cos phi	-	0.6 ... 0.88	0.6 ... 0.88
Max. short circuit contribution acc. IEC 61363-1	<i>A<sub>peak</sub></i>	1551	1720
Short circuit current capability $I_{CW}$ (max. 1 s)	<i>kA</i>	4.8	
Max. short-circuit current breaking capacity $I_{CU}$	<i>kA</i>	55 55	
Integrated MCCB type and mains connection point	-	3VA2225-6HL32-0AA0	
Generator type	-	asynchronous	
Cooling	-	through refrigerant	
Synchronization	-	automatic	
Crank	-	through ORC	
Inrush current	<i>kA<sub>eff</sub></i>	~ 1.2 for 10 ms	
Integrated compensation	-	no	

<sup>1</sup>Further line voltages on request

**Dimensional Drawing**

