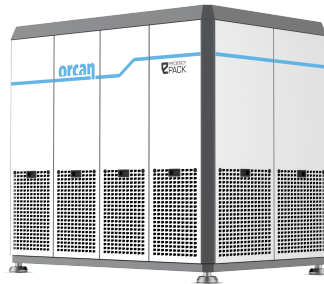


Product Data Sheet efficiency Pack eP M 150.200 HP



HEAT TO CLEAN ELECTRICITY
compact - modular - profitable

Thermal Input Power	1000 - 2100 kW	
Max. Rated Output (active electrical power)	200 kW electric net 240 kW electric gross	
Working Fluid	Standard refrigerant (non-toxic, non-flammable) with POE oil	
Design Guidelines	Designed and manufactured according to norms and standards: <ul style="list-style-type: none"> ■ Pressure Equipment Directive 2014/68/EU ■ Machinery Directive 2006/42/EC ■ EMC Directive 2014/30/EU ■ DNV RU-Ship 	
Product Components	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
Permissible temperature (TS)	°C		+165	+120
Volume flow	m ³ /h	≥ 60	≥ 80	≥ 20
Connection	EN1092-1	2 x DN100 / PN16	2 x DN125 / PN16	2 x DN65 / PN16
Pressure	bar _g		5.0 ... 7.5	1 ... 7
Permissible pressure (PS)	bar _g		10	10
Composition	-		Demineralized-water with 40 % propylene glycol	Demineralized-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_{pA,10m}: < 78 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. 2200 x 1650 x 2060 mm

Weight (filled with refrigerant)

Approx. 4.600 kg plus electrical cabinet (approx. 300 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

Auxiliaries Supply			
V_{nom}	-	380-415 V (3~+PE), 50 Hz	440-480 V (3~+PE), 60 Hz
$P_{maxSupply}$	<i>kW</i>	45	45
$S_{maxSupply}$	<i>kVA</i>	57	57
$I_{maxSupply@0.9 \cdot VNom}$	<i>A_{eff}</i>	92	76
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	
Direct grid connection via generator connection box			
V_{nom}^1	-	380-415 V (3~ +PE), 50 Hz	440-480 V (3~ +PE), 60 Hz
$P_{nom/max}$	<i>kW</i>	240	240
S_{nom}	<i>kVA</i>	255	255
$I_{max@0.9 \cdot Vnom}$	<i>A_{eff}</i>	390	340
cos phi	-	0.95	0.95
Max. short circuit contribution acc. IEC 61363-1	<i>A_{peak}</i>	2028	2052
Short circuit current capability I_{CW} (max. 1 s)	<i>kA</i>	6.0	
Max. short-circuit current breaking capacity I_{CU}	<i>kA</i>	55	
Integrated MCCB type and mains connection point	-	3VA2450-5JP32-0AA0	
Generator type	-	asynchronous	
Cooling	-	through refrigerant	
Synchronization	-	automatic	
Crank	-	through ORC	
Start-up current (3 cycle RMS)	<i>kA_{eff}</i>	< 0.5	
Peak inrush current	<i>kA_{peak}</i>	< 1,5	
Integrated compensation	-	yes	