

# ACS 6000 marine data sheet

		Line Supply Unit	Input Reactor Unit (Transformerless)	Active Rectifier Unit
Output power range		Single INU: 3, 5, 7, 9, 11 MVA; double INU: 14, 18 & 22 MVA; quadruple INU: 28 MVA		
Main supply voltage (50/60 Hz)	+10/-10 % +15/-5 %	2 x 1'725 V (12p) <sup>1</sup> 2 x 1'650 V (12p) <sup>2</sup>	3'300 V (6p) 3'300 V (6p)	3'160 V (6p) 3'000 V (6p)
Motor voltage (max)		<sup>1</sup> 3'100 V <sup>2</sup> 3'000 V	3'000 V	3'300 V
Inverter output frequency	Single/multi-motor configuration	< 75 Hz (please contact ABB on availability of higher frequency)		
Input power factor		0.95		1.0
Output power factor		Asynchronous motor: typically > 0.84; synchronous motor: 1		
Efficiency at rated load		> 98.5 %		> 97.7 %
Auxiliary voltages	+10/-10 %	3 x 400...690 VAC		
Optional control	+10/-10 %	1 x 120/230 VAC from external uninterrupted power supply or 1 x 110/220 VDC		
External cooling water		Inlet temperature: min 10 °C; max 36 °C (max. 42 °C with derating) Pressure: 200...500 kPa (pressure drop ca 150 kPa)		

## General features

Power cable entry	Top or bottom
Control cable entry	Top or bottom
Water pipe entry	Top, bottom or side
Power cable length	Motor cables and transformer secondary cables < 300 m
Protection class	IP 32, optional IP 45
Applicable standards	IEC 60146, IEC 60721
Ambient temperature	Min. +5 °C, max. +45 °C For temporary standstill below 0 °C an antifreeze should be added to the cooling circuit. Please contact ABB for further information.
Cabinet color	RAL 7035, other colors are optional
Dimensions	See <i>Dimensional Drawing Example</i> overleaf
Weight	Approx. 800 kg/m length (see <i>Dimensional Drawing</i> , overleaf)
Process interfaces	ABB S800I/O modules, AC 80/800 (optional) NTAC encoders for position and speed monitoring (optional)
Serial communications interfaces	Options: ABB AF100, Profibus DP, Modbus. Please contact ABB for information on other industry-standard communications interfaces.

## Maritime properties

Marine standards	IEC 600092, IEC 721-3-6, IEC 68-2-(1,2,6,30,52) CE marking according to EU directives
Marine certification	Available for Lloyd's, DNV, ABS and others
Braking	1 MVA (Resistor Braking Unit – Internal Resistor) 3 MVA (Braking Chopper Unit – External Resistor)
Hardware	Optional inverter output isolator Optional customer signal I/Os Varnished control boards
Mechanics	Vibration dampers Maritime handgrips for doors Anticondensation heaters Locking device for 90° open doors Flame-retardant properties Halogen-free wiring and cable ducts
Redundancy	Various redundancy schemes (please contact ABB for further information)

## Standard ratings for single-motor drives

Configuration <sup>1</sup>		Input Power (MVA)	Input Current (A rms)	Output Power (MVA)	Output Current (A rms)
A	ACS 6103_L12 <sup>3</sup> _1a3 <sup>1,2</sup>	3	1 x 2 x 560	3	550
B	ACS 6105_L12 <sup>3</sup> _1a5 <sup>1,2</sup>	5	1 x 2 x 930	5	915
C	ACS 6107_L12 <sup>3</sup> _1a7 <sup>1,2</sup>	7	1 x 2 x 1300	7	1280
D	ACS 6109_L12_1a9 <sup>1,2</sup>	9	1 x 2 x 1670	9	1650
E	ACS 6114_L12_1s11 <sup>1,2</sup>	11	1 x 2 x 2050	11	2050
F	ACS 6209_L24_2s9 <sup>1,2</sup>	18	2 x 2 x 1670	18	2 x 1650
G	ACS 6214_L24_4s7 <sup>1,2,5</sup>	28	2 x 2 x 2600	28	2 x 2560

Further configurations on request.

## Examples of ratings for multi-motor drives

Configuration <sup>1</sup>		Input Power (MVA)	Input Current (A rms)	Output Power (MVA)	Output Current (A rms)
H	ACM 6114_L12 <sup>3</sup> _1a9_1a5 <sup>1,2</sup>	1 x 14	1 x 2 x 2600	9	1650
				5	915
I	ACM 6209_L24_1s9_1a5_1a3 <sup>1,2</sup>	2 x 9	2 x 2 x 1670	9	1650
				5	915
				3	550
J	ACM 6107_D06_1a3_1a3_1a3 <sup>1,2</sup>	7	1650	3	550
				3	550
				3	550

Further configurations on request.

If total output power is defined higher than total input power, shifted operation cycles are expected. This leads to installation savings on the input side.

## Examples of ratings for redundant drives

Configuration <sup>1</sup>		Input Power (MVA)	Input Current (A rms)	Output Power (MVA)	Output Current (A rms)
K	ACR <sup>4</sup> 6207_D06_2a3 <sup>1,2,5</sup>	2 x 3	1 x 1300	6	2 x 550
L	ACR <sup>4</sup> 6207_L24 <sup>3</sup> _2s7 <sup>1,2</sup>	2 x 7	2 x 2 x 1300	14	2 x 1280
M	ACR <sup>4</sup> 6209_L24 <sup>3</sup> _2s9 <sup>1,2</sup>	2 x 9	2 x 2 x 1670	18	2 x 1650
N	ACR <sup>4</sup> 6214_L24 <sup>3</sup> _4s7 <sup>1,2,5</sup>	2 x 14	2 x 2 x 2600	28	2 x 2560

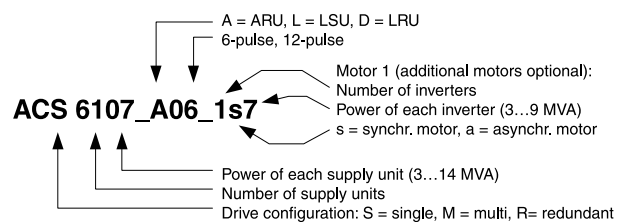
Further configurations on request.

Available as full-redundant (control and power hardware) or semi-redundant (power hardware) solution.

## Explanation

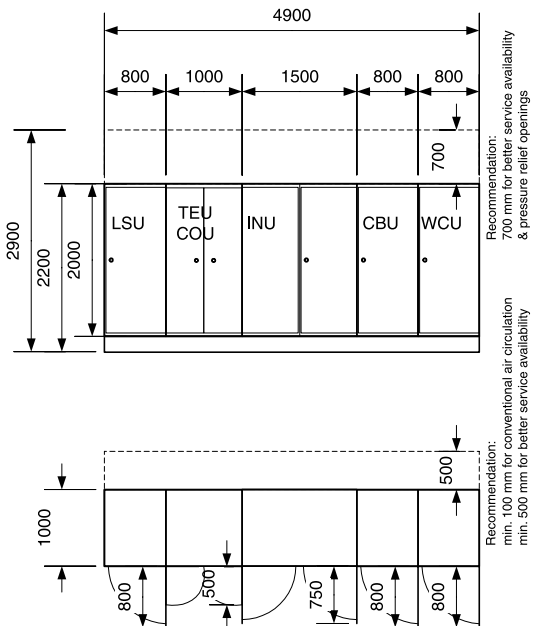
- <sup>1</sup> See *Type code* for explanation of drive configuration
- <sup>2</sup> Each configuration available for synchronous (s), asynchronous motors (a) or for both types mixed
- <sup>3</sup> Each configuration also available with transformerless Input Reactor Unit (D06)
- <sup>4</sup> Each configuration available as full- (control and power hardware) or semi-redundant (only power hardware) solution
- <sup>5</sup> For more information please contact ABB

## Type code

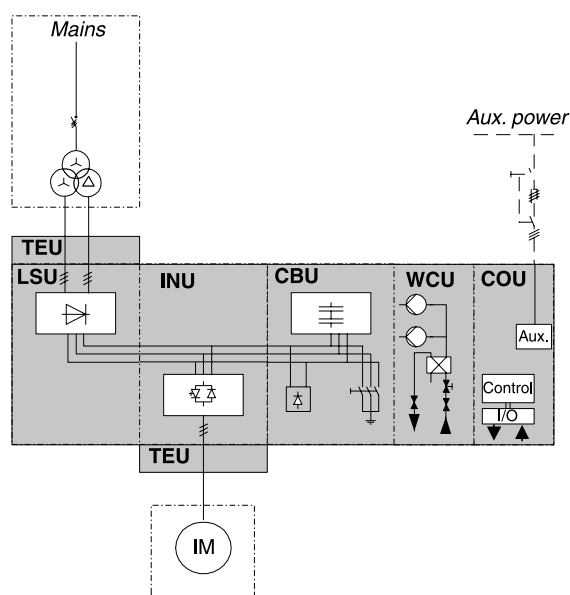


## Drawings configuration D

### Dimensions (9 MVA, single drive)

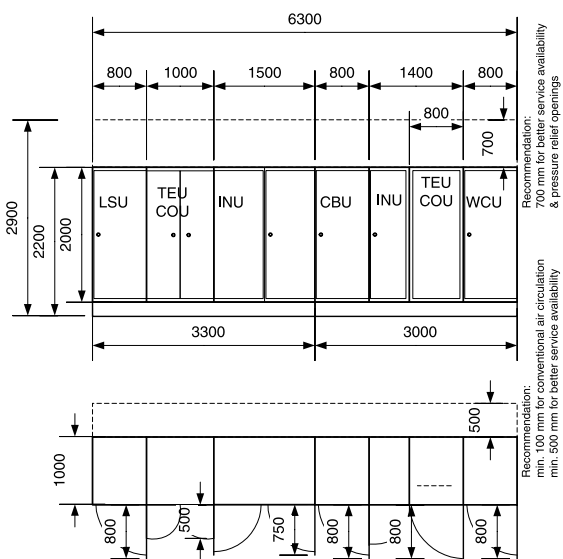


### Single line

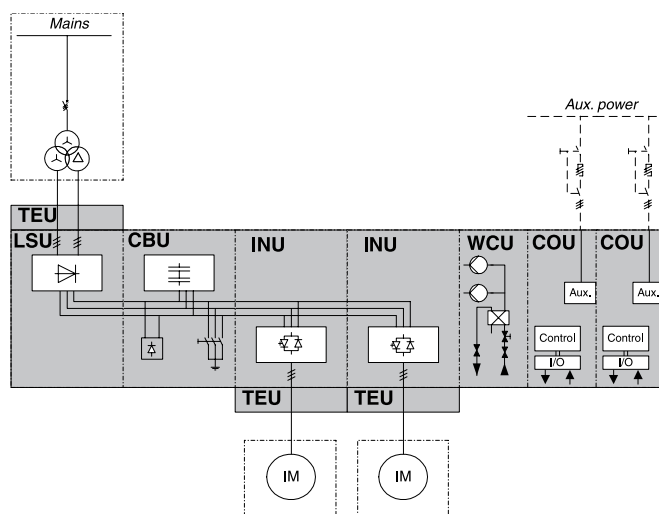


## Drawings configuration H

### Dimensions (9 MVA + 5 MVA, multi-motor drive)



### Single line

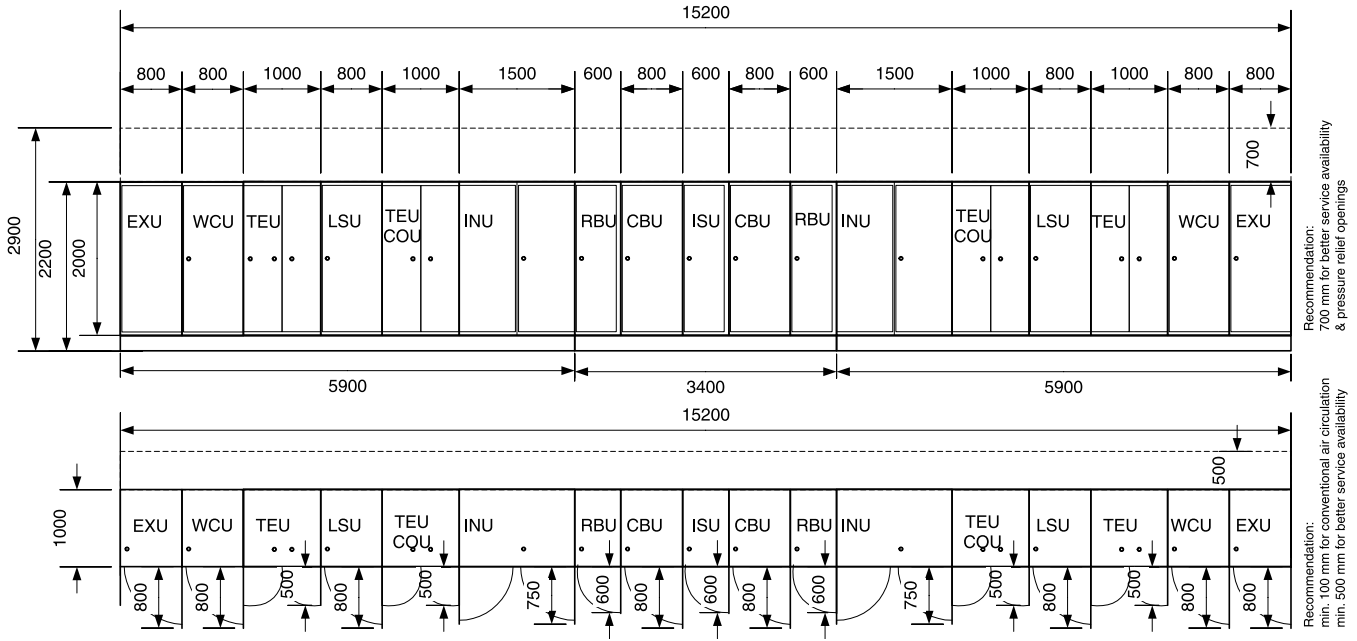


### Definitions:

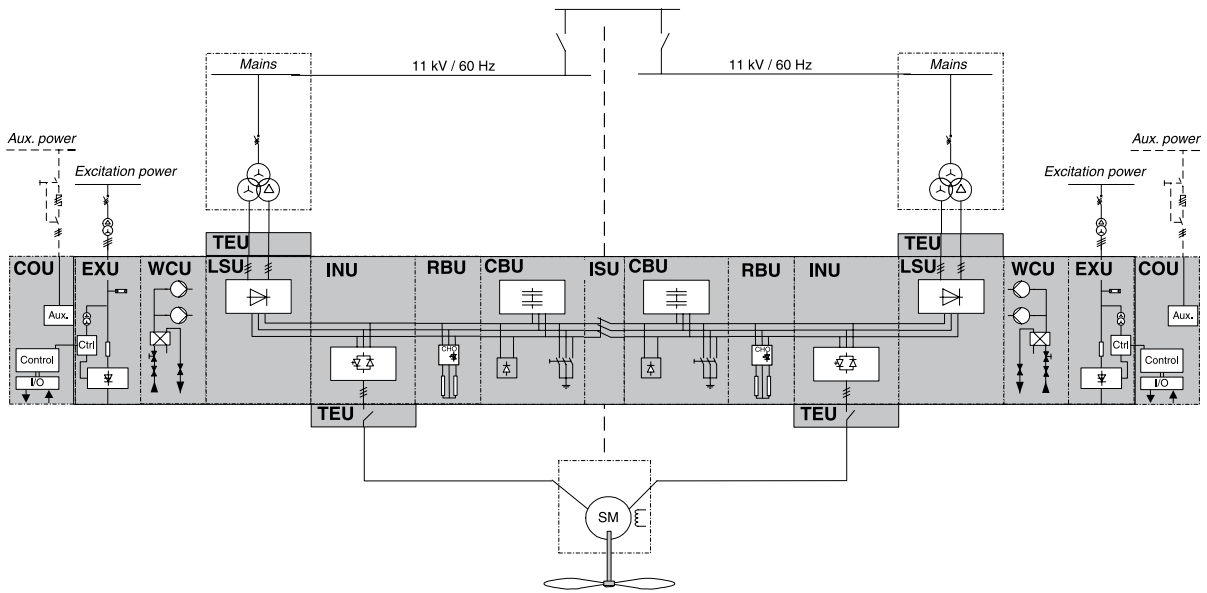
LSU	Line Supply Unit	RBU	Resistor Braking Unit
INU	INverter Unit	TEU&COU	Terminal Unit and Control Unit
CBU	Capacitor Bank Unit	WCU	Water Cooling Unit
EXU	EXcitation Unit	IRU	Input Reactor Unit (Transformerless)

# Drawings configuration K

## Dimensions (18 MVA, redundant)



## Single line (18 MVA, redundant)



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