



Lloyd's
Register

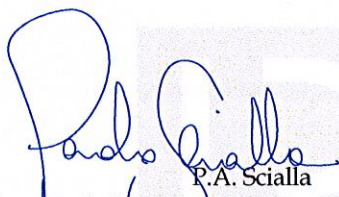
Type Approval Certificate

This is to certify that the undernoted products have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	ELECTRO ADDA S.p.A. Via Nazionale, 8 23883 Beverate di Brivio (LC) Italy	
PLACE OF PRODUCTION	ELECTRO ADDA S.p.A. Via Nazionale, 8 23883 Beverate di Brivio (LC) Italy	
DESCRIPTION	Three Phases Asynchronous Motors	
TYPE	C2A Line	C3A Line
APPLICATION	Marine, Offshore and Industrial use.	
SPECIFIED STANDARDS	IEC 60034-1:2010 IEC 60034-2-1:2014 (IEC 60034-30:2008) IEC 60034-30-1:2014 Lloyd's Register Rules and Regulation for the Classification of Ships, 2015 - Part 6, Chapter 2, Section 9	
RATINGS	Rated Power [kW]:	0.75 ÷ 90
	Rated Voltage [V]:	220 ÷ 690
	Rated Frequency [Hz]:	50 / 60 or Frequency Converter Fed
Certificate No.	16/00038	
Issue Date	14 June 2016	
Expiry Date	13 June 2021	
Sheet	1 of 5	

Lloyd's Register EMEA
71 Fenchurch Street, London, EC3M 4BS


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RATINGS (continued)

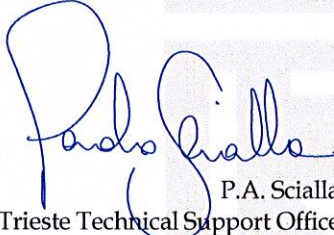
Efficiency Classes: IE2 (C2A line),
IE3 (C3A line)
Shaft Height [mm]: 80 ÷ 315
Poles Number: 2 - 4 - 6
Insulation Class: F
Ambient Temperature [°C]: 40
Degree of Protection IP 55 or IP 56
Duty Type S1

RANGE

2 poles						
shaft height	Efficiency IE2			Efficiency IE3		
	Type	Power [kW] (*)	Eff. (**)	Type	Power [kW] (*)	Eff. (**)
80	C2A 80-a	0.75	77.4	C3A 80-a	0.75	80.7
	C2A 80-b	1.1	79.6	C3A 80-b	1.1	82.7
90	C2A 90S	1.5	81.3	C3A 90S	1.5	84.2
	C2A 90L	2.2	83.2	C3A 90L	2.2	85.9
100	C2A 100L	3	84.6	C3A 100L	3	87.1
112	C2A 112MT-a	4	85.8	C3A 112M	4	88.1
132	C2A 132S-a	5.5	87	C3A 132S-a	5.5	89.2
	C2A 132S-b	7.5	87	C3A 132S-b	7.5	90.1
160	C2A 160M-a	11	89.4	C3A 160M-a	11	91.2
	C2A 160M-b	15	90.3	C3A 160M-b	15	91.9
	C2A 160L	18.5	90.9	C3A 160L	18.5	92.4
180	C2A 180MT	22	91.3	C3A 180LT	22	92.7
200	C2A 200LT-a	30	92	C3A 200LT	30	93.3
	C2A 200LT-b	37	92.5	C3A 200L	37	93.7
225	C2A 225MT (#)	45	92.9	C3A MT	45	94
250	C2A 250MT	55	93.2	C3A 250MT	55	94.3
280	C2A 280ST	75	93.8	C3A 280ST	75	94.7
	C2A 280MT	90	94.1	C3A 280MT	90	95

(*) Duty S1, 400V, 50 Hz, T.amb.=40°C, height<=1000m a.s.l. - (**) at 100% load
(#) temperature rise within class F limits.

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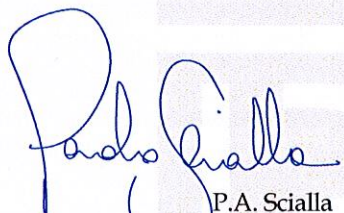
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4 poles						
shaft height	Efficiency IE2			Efficiency IE3		
	Type	Power [kW] (*)	Eff. (**)	Type	Power [kW] (*)	Eff. (**)
80	C2A 80-b	0.75	79.6	C3A 80-b	0.75	82.5
90	C2A 90S	1.1	81.4	C3A 90S	1.1	84.1
	C2A 90L	1.5	82.8	C3A 90L	1.5	85.3
100	C2A 100L-a	2.2	84.3	C3A 100L-a	2.2	86.7
	C2A 100L-b	3	85.5	C3A 100L-b	3	85.5
112	C2A 112M	4	86.6	C3A 112M	4	88.6
132	C2A 132S	5.5	87.7	C3A 132S-a	5.5	89.6
	C2A 132M	7.5	88.7	C3A 132M-a	7.5	90.4
	C2A 132M-b	9.2	89.3			
160	C2A 160M	11	89.8	C3A 160M	11	91.4
	C2A 160L	15	90.6	C3A 160L	15	92.1
180	C2A 180MT	18.5	91.2	C3A 180MT	18.5	92.6
	C2A 180L	22	91.6	C3A 180L	22	93
200	C2A 200LT	30	92.3	C3A 200L	30	93.6
225	C2A 225ST	37	92.7	C3A 225ST	37	93.9
	C2A 225M	45	93.1	C3A 225M	45	94.2
250	C2A 250MT	55	93.5	C3A 250M	55	94.6
280	C2A 280ST	75	94	C3A 280ST	75	95
	C2A 280MT	90	94.2	C3A 280MT	90	95.2

(*) Duty S1, 400V, 50 Hz, T.amb.=40°C, height<=1000m a.s.l. - (**) at 100% load

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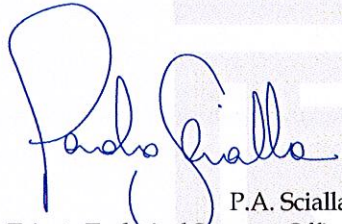
6 poles						
shaft height	Efficiency IE2			Efficiency IE3		
	Type	Power [kW] (*)	Eff. (**)	Type	Power [kW] (*)	Eff. (**)
90	C2A 90S	0.75	75.9	C3A 90S	0.75	78.9
	C2A 90L	1.1	78.1	C3A 90L	1.1	81
100	C2A 100L	1.5	79.8	C3A 100L	1.5	82.5
112	C2A 112M	2.2	81.8	C3A 112M	2.2	84.3
132	C2A 132S	3	83.3	C3A 132S	3	85.6
	C2A 132M-a	4	84.6	C3A 132M-a	4	86.8
	C2A 132M-b	5.5	86	C3A 132M-b	5.5	88
160	C2A 160M	7.5	87.2	C3A 160M	7.5	89.1
	C2A 160L	11	88.7	C3A 160L	11	90.3
180	C2A 180LT	15	89.7	C3A 180L	15	91.2
200	C2A 200L-a	18.5	90.4	C3A 200LT	18.5	91.7
	C2A 200L-b	22	90.9	C3A 200L-b	22	92.2
225	C2A 225M	30	91.7	C3A 225M	30	92.9
250	C2A 250MT	37	92.2	C3A 250M	37	93.3
280	C2A 280ST	45	92.7	C3A 280ST	45	93.7
	C2A 280MT	55	93.1	C3A 280MT	55	94.1
315	C2A 315ST	75	93.7	C3A 315S	75	94.6
	C2A 315M-a	90	94	C3A 315M-a	90	94.9

(*) Duty S1, 400V, 50 Hz, T.amb.=40°C, height<=1000m a.s.l. - (**) at 100% load

OTHER CONDITIONS

- Temperature Rise for Lloyd's Register application have to be within insulation class F limits, as per Lloyd's Register Rules and Regulation for the Classification of Ships, 2015 - Part 6, Chapter 2, Section 9.
- Temperature Rise for Power Frequency applications satisfies class B limits, except for (#).
- Motors suitable for Inverted-Fed application, without any needs of power de-rating. Temperature Rise within class F limits.
- Frame: Aluminium; Shields: Aluminium or Cast Iron

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"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No.16/00038 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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