ICL Series

Delta-Q Technologies ICL Series

900W-1500W Battery Charger for Lithium Battery Chemistries

The ICL Series is Delta-Q Technologies' lithium-specific line of battery chargers for industrial and motive applications. Designed to optimally charge lithium battery systems with any chemistry (e.g. LCO, NCA, NMC, LMO, LFP, LTO). CAN bus communication, with the battery management system (BMS), ensures seamless machine integration to grant original equipment manufacturers (OEMs) wide flexibility in their design and deployment.

ICL1500

Available Models

	57V	58V	85V	120V
ICL900 Models	✓			
ICL1200 Models	✓		✓	✓
ICL1500 Models		✓	✓	✓

ICL1200

OEM Features

- CAN bus communication for machine BMS/telematic integration with CANopen and J1939 protocols
- Charge cycle data logging for insight into usage and troubleshooting
- OEM customizable, field replaceable cable design
- Optional multi-colored remote or charger mounted LED indicator for battery charging status, error and fault indication
- Interlock prevents vehicle from moving while charging

Application Examples

Charger Features

High Reliability

IP66-rated, rugged, sealed aluminum die-cast enclosure protects against vibration, shock, dirt, chemicals, and fluids. Automotive reliability and tested to an 8-year service life.

Charge Quality

Charge algorithms to precisely charge lithium batteries while balancing charge time, battery life and application requirements.

Lithium Safety

Custom lithium algorithms providing the first line of safety for lithium battery charging; state-of-the-art battery labs and experts for testing and validating of battery packs and BMS.

Global + Efficient

Wide AC input voltage range capable of operating on any single-phase grid worldwide. 93% efficient and meets energy efficiency standards, such as CEC.

OEM System Integration

CAN bus enables OEMs to update the software of the charger, algorithms, and extract charger status, charger history, fault and error logs.

Global Standard Compliance

Compliance with North American, UNECE R10 and European touch-safe voltage regulations allows for easy integration into electric vehicles.

ICL900 | ICL1200 Specifications				
DC Output	ICL900 **57V**	ICL1200 **85V**	ICL1200 **120V**	ICL1200 **57V**
Lithium final charging voltage	36-57 VDC	55-85 VDC	80-120 VDC	36-57 VDC
Lithium cells in series	9 to16	14 to 24	21 to 34	9 to 16
Max DC output voltage	57 VDC	85 VDC	120 VDC	57 VDC
Max DC output current. $V_{in} > 200$	27.0 A	20.0 A	15.0 A	33.3 A
Max DC output power. $V_{in} > 200$	900 W ($V_{out} > 36V$)	1200 W ($V_{out} > 60V$)	1200 W ($V_{out} > 80V$)	1200 W ($V_{out} > 36V$)
Max DC output current. $V_{in} < 200$	27.0 A	18.2 A	12.5 A	33.3 A
Max DC output power. $V_{in} < 200$	900 W ($V_{out} > 36V$)	1000 W ($V_{out} > 60V$)	1000 W ($V_{out} > 80V$)	1200 W ($V_{out} > 36V$)
Dry contact interlock current rating	0.3 A			
Reverse polarity	Poka-Yoke DC terminals and electronic protection with auto-reset			
Short circuit	Electronic current limit			
AC Input	ICL900 **57V**	ICL1200 **85V**	ICL1200 **120V**	ICL1200 **57V**
AC input voltage range	85-270 VAC			
Nominal AC input voltage range	100-240 VAC			
Nominal AC input frequency	50/60 Hz			
Max AC input current	10.5 A	11.5 A	11.5 A	14.0 A
Nominal AC input current	8.4 A @ 120 VAC	9.3 A @ 120 VAC	9.3 A @ 120 VAC	11.1 A @ 120 VAC
	4.4 A @ 230 VAC	5.7 A @ 230 VAC	5.7 A @ 230 VAC	5.7 A @ 230 VAC
Nominal AC power factor	>0.99 @ 120 VAC, >0.98 @ 230 VAC			
Mechanical	ICL900 **57V**	ICL1200 **85V**	ICL1200 **120V**	ICL1200 **57V**
Dimensions	300 x 179 x 80 mm (11.8 x 7.0 x 3.2")			
Weight	3.65 kg (8.0 lbs)	3.55 kg (7.8 lbs)		
AC input connector	IEC320/C14 with Delta-Q country-specific AC cord			
DC output connector	Poka-Yoke threaded fasteners for ring terminals. Negative: M6; Positive: M8			
Mounting holes	M6 diameter slots			
Cooling	Natural convection			Forced convection with variable speed fan
Regulatory	**All Models**			
Efficiency	93% peak efficiency; Natural Resources of Canada (NRCAN), California Energy Commission (CEC), and Department of Energy (DoE) compliant			
Safety	**All Models:** UL1564, EN 60335-2-29, AZ/NZS60335 (RCM) **ICL900 57V and ICL1200 57V:** Voltage Class A (less than 60 VDC)			
Emissions	FCC Part 15 / ICES 003 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-3, CISPR 14.1, UNECE R10			
Immunity	CISPR 14.2, EN 61000-6-2, UNECE R10			
Environmental	**All Models**			
Enclosure	IP66 (NEMA4)			
Thermal fatigue/ Shock/ Vibration	GMW 3172			
Operating temperature	-40°C to +65°C (-40°F to 149°F) Full nominal output power -35°Cto +40°C(-31°F to 104°F)			
Storage temperature	-40°C to +85°C (-40°F to 185°F)			
Regulatory	**All Models**			

Please note the above specifications are subject to change.

ICL1500 Specifications			
DC Output	ICL1500 **58V**	ICL1500 **85V**	ICL1500 **120V**
Lithium final charging voltage	36-58 VDC	55-85 VDC	80-120 VDC
Lithium cells in series	9 to 16	14 to 24	21 to 34
Max DC output voltage	58.1 VDC	85 VDC	120 VDC
Max DC output current. $V_{in} > 200$	33.3 A	25.0 A	18.7 A
Max DC output power. $V_{in} > 200$	1500 W ($V_{out} > 36V$)	1500 W ($V_{out} > 60V$)	1500 W ($V_{out} > 80V$)
Max DC output current. $V_{in} < 200$	33.3 A	20.8 A	15.6 A
Max DC output power. $V_{in} < 200$	1200 W ($V_{out} > 36V$)	1200 W ($V_{out} > 60V$)	1200 W ($V_{out} > 80V$)
Dry contact interlock current rating	0.3 A	0.3 A	0.3 A
Reverse polarity	Poka-Yoke DC terminals and electronic protection with auto-reset		
Short circuit	Electronic current limit		
AC Input	ICL1500 **58V**	ICL1500 **85V**	ICL1500 **120V**
AC input voltage range	85-270 VAC		
Nominal AC input voltage range	100-240 VAC		
Nominal AC input frequency	50/60 Hz		
Max AC input current	14.0 A	13.0 A	13.0 A
Nominal AC input current	11.1 A @ 120 VAC	11.1 A @ 120 VAC	11.1 A @ 120 VAC
	7.2 A @ 230 VAC	7.2 A @ 230 VAC	7.2 A @ 230 VAC
Nominal AC power factor	>0.99 @ 120 VAC, >0.98 @ 230 VAC		
Mechanical	ICL1500 **58V**	ICL1500 **85V**	ICL1500 **120V**
Dimensions	300 x 179 x 80 mm (11.8 x 7.0 x 3.2")		
Weight	3.55 kg (7.8 lbs)		
AC input connector	IEC320/C14 with Delta-Q country-specific AC cord		
DC output connector	Poka-Yoke threaded fasteners for ring terminals. Negative: M6; Positive: M8		
Mounting holes	M6 diameter slots		
Cooling	Forced convection with variable speed fan		
Regulatory	**All Models**		
Efficiency	93% peak efficiency; Natural Resources of Canada (NRCAN), California Energy Commission (CEC), and Department of Energy (DoE) compliant		
Safety	**All Models:** UL1564, EN 60335-2-29, AZ/NZS60335 (RCM) **ICL1500 58V:** Voltage Class A (less than 60 VDC)		
Emissions	FCC Part 15 / ICES 003 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-3, CISPR 14.1, UNECE R10		
Immunity	CISPR 14.2, EN 61000-6-2, UNECE R10		
Environmental	**All Models**		
Enclosure	IP66 (NEMA4)		
Thermal fatigue/Shock/Vibration	GMW 3172		
Operating temperature	-40°C to +65°C (-40°F to 149°F) Full nominal output power -35°Cto +40°C(-31°F to 104°F)		
Storage temperature	-40°C to +85°C (-40°F to 185°F)		
Regulatory	**All Models**		

Please note the above specifications are subject to change.

© 2021 Delta-Q Technologies Corp. All rights reserved.