



# 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

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



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.

<b>DC Output</b>	<b>ICL900 57V</b>	<b>ICL1200 85V</b>	<b>ICL1200 120V</b>	<b>ICL1200 57V</b>	<b>ICL1500 85V</b>	<b>ICL1500 120V</b>
Lithium final charging voltage	36-57 VDC	55-85 VDC	80-120 VDC	36-57 VDC	55-85 VDC	80-120 VDC
Lithium cells in series	9 to 16	14 to 24	21 to 34	9 to 16	14 to 24	21 to 34
Max DC output voltage	57 VDC	85 VDC	120 VDC	57 VDC	85 VDC	120 VDC
Max DC output current. $V_{in} > 200$	27.0 A	20.0 A	15.0 A	33.3 A	25.0 A	18.7 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 ( $V_{out} > 36V$ )	1500 W ( $V_{out} > 60V$ )	1500 W ( $V_{out} > 80V$ )
Max DC output current. $V_{in} < 200$	27.0 A	18.2 A	12.5 A	33.3 A	20.8 A	15.6 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 ( $V_{out} > 36V$ )	1200 W ( $V_{out} > 60V$ )	1200 W ( $V_{out} > 80V$ )
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					
<b>AC Input</b>	<b>ICL900 57V</b>	<b>ICL1200 85V</b>	<b>ICL1200 120V</b>	<b>ICL1200 57V</b>	<b>ICL1500 85V</b>	<b>ICL1500 120V</b>
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	13.0 A	13.0 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	11.1 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	7.2 A @ 230 VAC	7.2 A @ 230 VAC
Nominal AC power factor	>0.99 @ 120 VAC, >0.98 @ 230 VAC					
<b>Mechanical</b>	<b>ICL900 57V</b>	<b>ICL1200 85V</b>	<b>ICL1200 120V</b>	<b>ICL1200 57V</b>	<b>ICL1500 85V</b>	<b>ICL1500 120V</b>
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		
<b>Regulatory</b>	<b>All Models</b>					
Efficiency	93% peak efficiency; California Energy Commission (CEC) and Department of Energy (DoE) compliant					
Safety	<b>All Models:</b> UL1564, EN 60335-2-29, AZ/NZS60335 (RCM) <b>ICL900 57V and ICL1200 57V:</b> 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					
<b>Environmental</b>	<b>All Models</b>					
Enclosure	IP66 (NEMA4)					
Mechanical shock & vibration	Shock: ISO 16750-3 chap. 4.2.2. Vibration: ISO 16750-3 chap. 4.1.2.4 (Test IV: vehicle body) GMW 3172					
Operating temperature	-40°C to +65°C (-40°F to 149°F)					
Storage temperature	-40°C to +85°C (-40°F to 185°F)					
<b>Regulatory</b>	<b>All Models</b>					
	    					

Please note the above specifications are subject to change.

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