DPIC Series Datasheet

- *Input / output transformer isolated*
- *Eliminates ground potential problems*
- *Low voltage AC and DC inputs*
- *Optimal four stage charging*
- *State of charge / service LEDs*
- *Low standby battery drain*
- *Customizable charge algorithm*
- *Optional control / status signals*
- *Optional temperature compensation*
- *Vibration resistant*
- *Reverse polarity protected*
- *Over temperature protected*
- *Over current / voltage protected*
- *Waterproof / hermetically sealed*
- *Two year warranty*

Description

The DPIC series is a DC/DC battery charger line designed pursuant to customization and flexibility. With the ability to accept low voltage AC and DC inputs, diverse requirements ranging from marine to automotive can be met. The input and output are transformer isolated, eliminating ground loops and allowing battery charging at potentials not referenced to the input. With a wide operating temperature range (-20°C to 50°C), the charger is especially suited for high end industrial applications. The DPIC is factory programmable to accommodate several charging algorithms and an LED display to indicate status. The charger is controlled by an embedded microcontroller that contains software developed by and which is proprietary to Chargetek.

Part number definitions

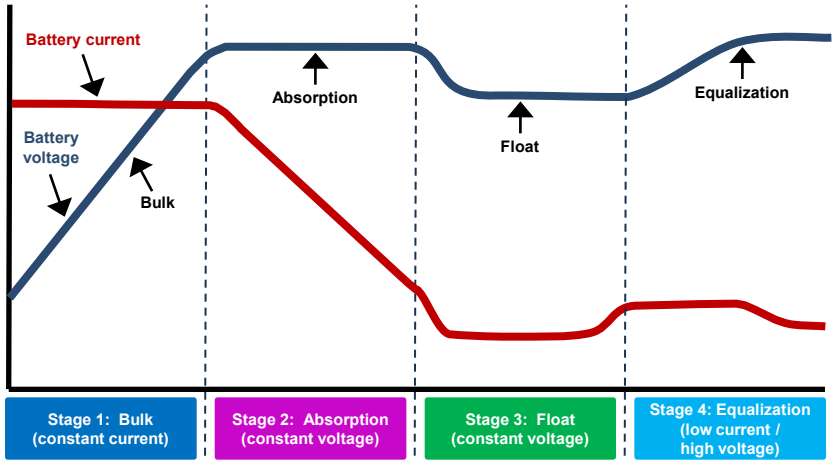
DPIC model numbers are in the form DPIC-WXYZ-O, where W specifies the input voltage, X specifies the output voltage, YZ specifies the output current and O specifies options (consult factory for temperature compensation and status output option availablity). The available standard product offerings are shown below. Special output configurations are available. Please contact us for any variations required.

DPIC part numbers are easily configured. For example, the DPIC2301 has a 24V input (W=2), 36V battery voltage (X=3) and 1 amp charging current (YZ=01).

	DPIC input voltage range			
	12V (10V - 20V)	24V (17V - 42V)	36V (28V - 60V)	48V (34V - 80V)
Battery voltage				
12V	1103	2103	3103	4103
24V	1202	2202	3202	4202
36V	1301	2301	3301	4301
48V	1401	2401	3401	4401

Charging specifications

Four stage charging curve



Charging algorithm: Supplies constant current to battery until absorption voltage is reached (V_{FSTERM}). Transition to absorption mode follows and regulates battery voltage at V_{FSTERM} until current decreases to $I_{ABTERM.}$ Float mode follows and regulates battery voltage at $V_{FL.}$. At the user's discretion, an equalization mode can be initiated. The equalization voltage V_{EQ} is approximately 2.5V/cell and the battey current is limted to a small value. For more information, please refer to this presentation at our website: www.chargetek.com/images/pdfs/equal.pdf

12V battery bank

PARAMETER	DESCRIPTION / CONDITIONS	MIN	NOM	MAX	UNITS
V_{FSTERM}	Fast charge termination voltage, 25°C	14.3	14.4	14.5	VDC
V_{FL}	Float voltage, $I_{OUT} < I_{FS}$, 25°C	13.4	13.5	13.6	VDC
I_{FS}	Fast charge current, $V_{BATTERY}$ = XY volts	3.0	3.2	3.4	Amps
I_{ABTERM}	Absorption mode charge termination current, transition from fast to absorption	1.2	1.3	1.4	Amps
I_{FLTERM}	Float charge termination current	0.3	0.4	0.5	Amps
V_{EQ}	Charge current less than 1A		15.6		volts
I_{SBY}	Standby current, AC off			1.0	ma

24V battery bank

PARAMETER	DESCRIPTION / CONDITIONS	MIN	NOM	MAX	UNITS
V_{FSTERM}	Fast charge termination voltage, 25°C	28.6	28.8	29.0	VDC
V_{FL}	Float voltage, $I_{OUT} < I_{FS}$, 25°C	26.8	27.0	27.2	VDC
I_{FS}	Fast charge current, $V_{BATTERY}$ = XY volts	2.0	2.2	2.4	Amps
I_{ABTERM}	Absorption mode charge termination current, transition from fast to absorption	0.8	0.9	1.0	Amps
I_{FLTERM}	Float charge termination current	0.2	0.3	0.4	Amps
V_{EQ}	Charge current less than 1A		31.2		volts
I_{SBY}	Standby current, AC off			1.0	ma

36V battery bank

PARAMETER	DESCRIPTION / CONDITIONS	MIN	NOM	MAX	UNITS
V_{FSTERM}	Fast charge termination voltage, 25°C	42.9	43.2	43.4	VDC
V_{FL}	Float voltage, $I_{OUT} < I_{FS}$, 25°C	40.2	40.5	40.7	VDC
I_{FS}	Fast charge current, $V_{BATTERY}$ = XY volts	1.0	1.1	1.2	Amps
I_{ABTERM}	Absorption mode charge termination current, transition from fast to absorption	0.5	0.6	0.7	Amps
I_{FLTERM}	Float charge termination current	0.2	0.25	0.3	Amps
V_{EQ}	Charge current less than 1A		46.8		volts
I_{SBY}	Standby current, AC off			1.0	ma

48V battery bank

PARAMETER	DESCRIPTION / CONDITIONS	MIN	NOM	MAX	UNITS
V_{FSTERM}	Fast charge termination voltage, 25°C	57.8	58.0	58.2	VDC
V_{FL}	Float voltage, $I_{OUT} < I_{FS}$, 25°C	53.8	54.0	54.2	VDC
I_{FS}	Fast charge current, $V_{BATTERY}$ = XY volts	1.0	1.1	1.2	Amps
I_{ABTERM}	Absorption mode charge termination current, transition from fast to absorption	0.5	0.6	0.7	Amps
I_{FLTERM}	Float charge termination current	0.2	0.25	0.3	Amps
V_{EQ}	Charge current less than 1A		62.4		volts
I_{SBY}	Standby current, AC off			1.0	ma

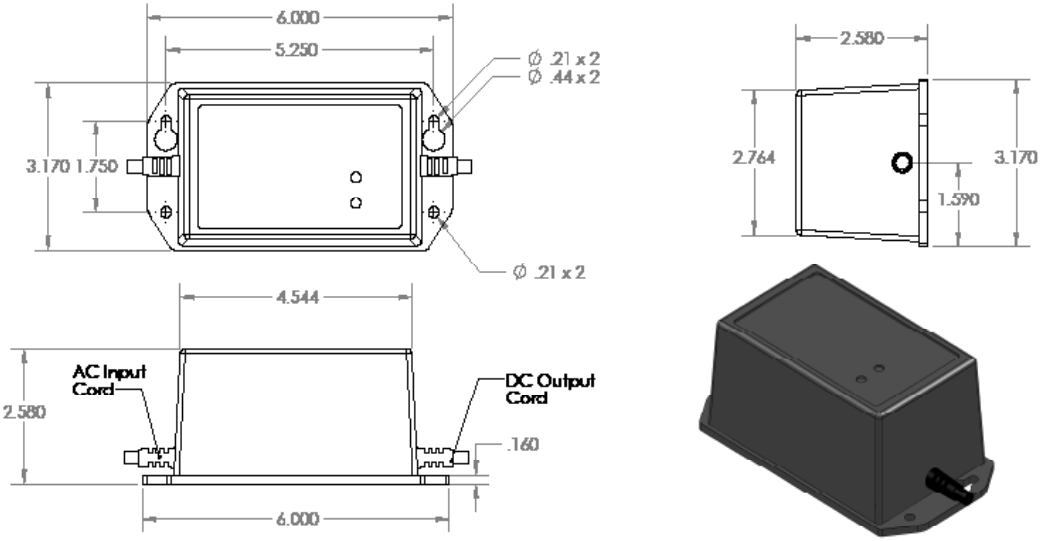
Environmental specifications

PARAMETER	DESCRIPTION / CONDITIONS
Storage temperature	-40°C - 80°C
Operating temperature	-20°C - 50°C
Relative humidity	0 - 95°C relative humidity (non-condensing)
Input to output / chassis voltage isolation	1KV (leakage current less than 1mA)
Output to chassis voltage isolation	50V (can be increased / consult factory)

LED indicators

PARAMETER	DESCRIPTION	RED	RED/GREEN	GREEN
Charging mode	Indicates state of charge	Bulk	Absorption	Float
Service indicator	Indicates a charger failure	Fault		Normal

Outline and mounting



Dimensions in inches

NOTE: Chargetek products are not authorized for use as components in life support systems, hazardous environments, nuclear control systems or other similar applications without the express written consent of the President of Chargetek , Inc. The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.