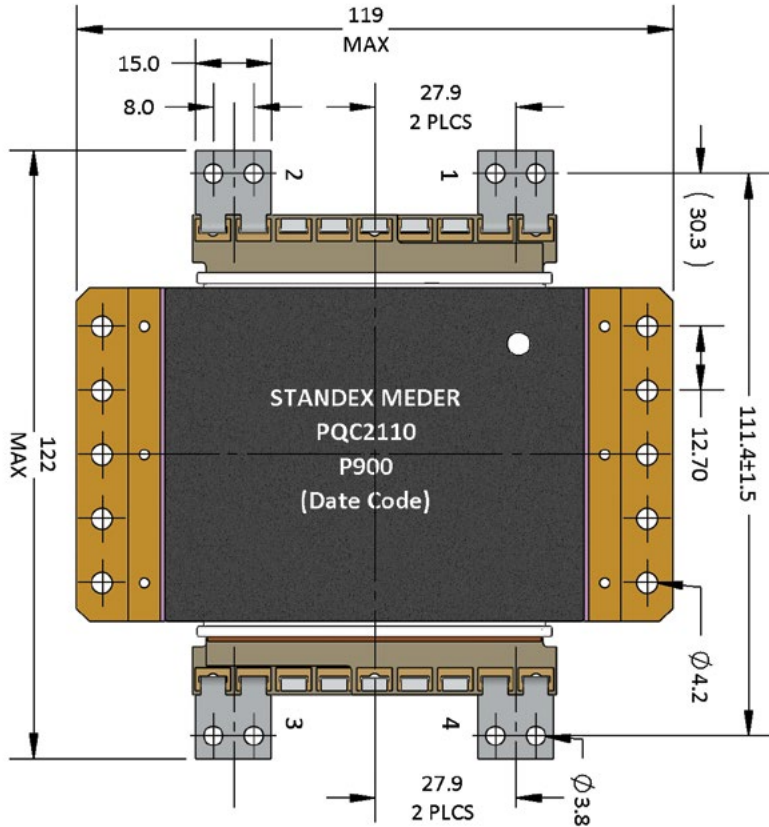
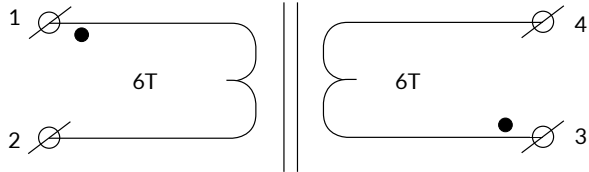
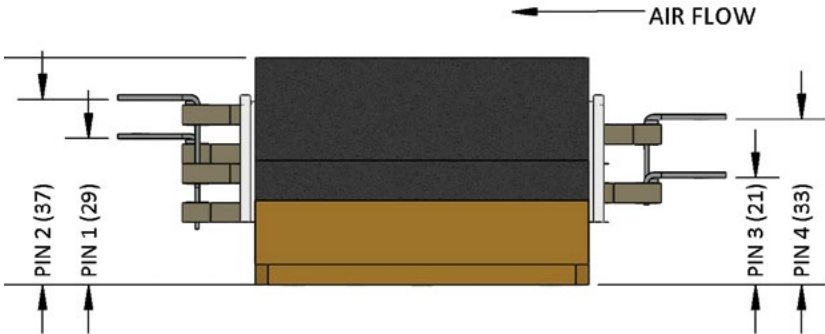
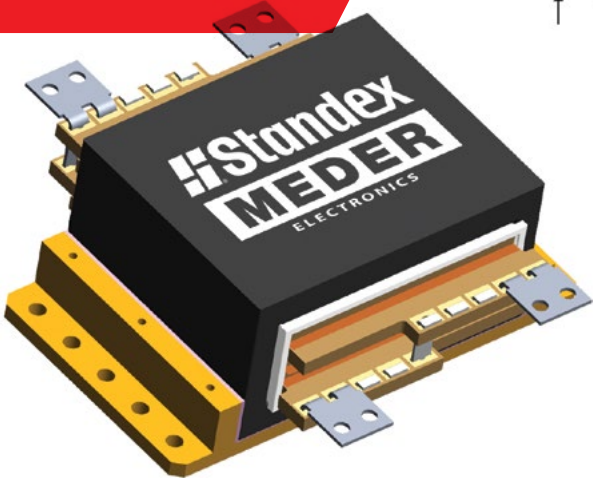


SIZE 900
10kW-20kW
 DESIGN EXAMPLE



TRANSFORMER DESIGN | EXAMPLE - PQC2110

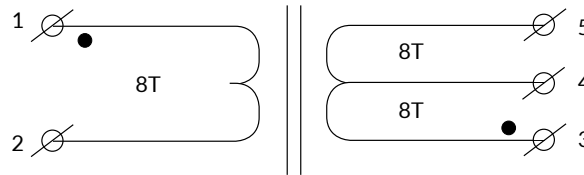
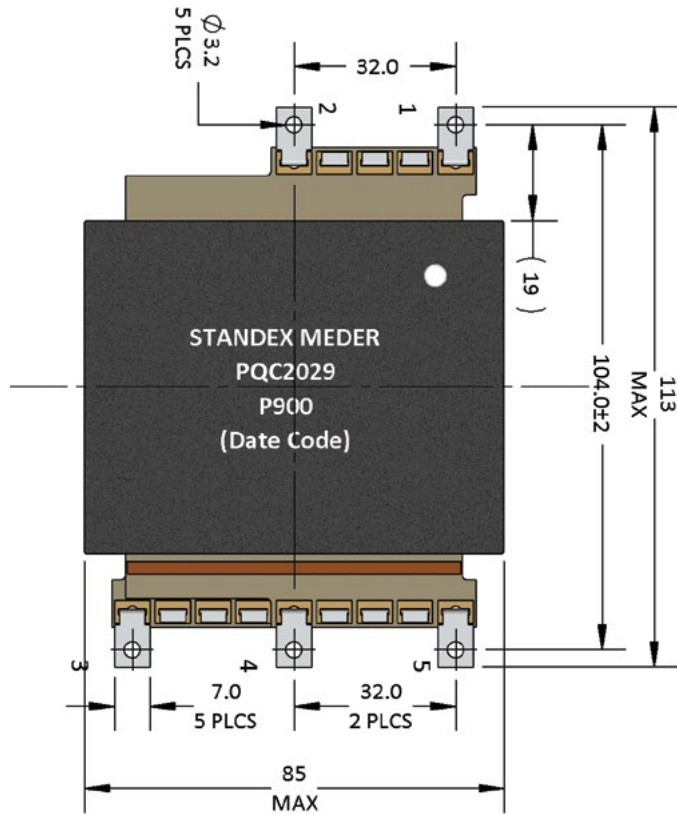
ELECTRICAL SPECIFICATIONS	Topology	LLC Resonant
	Input Voltage	350-450VDC
	Output Voltage/Current After Rectification	24kW ave. (400VDC/60ADC)
	Turns Ratio - Np/Ns	6T to 6T
	Switching Frequency	100kHz
	Duty Cycle At 410VDC Input, Max.	98%
	Max. Efficiency 24kW Output & Vin=410VDC	99.59% (99W losses calc.)
	Ambient Temperature Max.	+65°C
	External Heatsink Temperature Max.	+60°C
	Temp. Rise Hot Spot Baseplate*, Max.	+59°C

*Airflow Of Cooling Fan (Required)	50CFM
Minimum Isolation Voltage	
Primary To Secondary And Core	4000VAC
Secondary To Core	4000VAC
Primary Inductance, Np, Min.	540µH
Primary Resistance, Rdc, Np, Max.	1.5mOhm
Secondary Resistance, Rdc, Ns, Max.	3mOhm
Leakage Inductance 1-2/3-4 Shorted, Typ.	220µH
Weight Range	800-1600grams

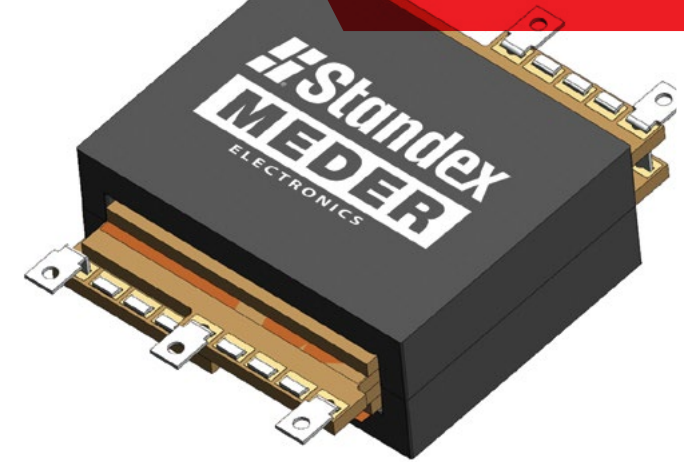
NOTES:

- 1) CUSTOM TOOLED CORE UNIQUE TO STANDEX PRODUCT OFFERING
- 2) LARGE CROSS-SECTIONAL AREA REDUCES MAGNETIC FLUX DENSITY
- 3) MULTI LAYER PCB'S REDUCE AC LOSSES

DESIGN GUIDE | Planar Transformers & Inductors



SIZE 900
10kW-20kW
 DESIGN EXAMPLE



TRANSFORMER DESIGN | EXAMPLE - PQC2029

ELECTRICAL SPECIFICATIONS

Topology	LLC Resonant
Input Voltage	400VDC
Output Voltage/Current After Rectification	10kW max. (400VDC/25ADC)
Secondary Current Nom. Rms Half Sec. Current	19A RMS sinusoidal
Turns Ratio - N_p/N_s1+N_s2	8T/8T + 8T
Switching Frequency	100kHz fixed
Duty Cycle Max.	100% (50% + 50%)
Efficiency At Full Power (Calculated)	99.5% (50W losses)
External Heatsink Temperature Max.	+80°C
Temp. Rise Hot Spot External Heatsink*, Max.	+25°C

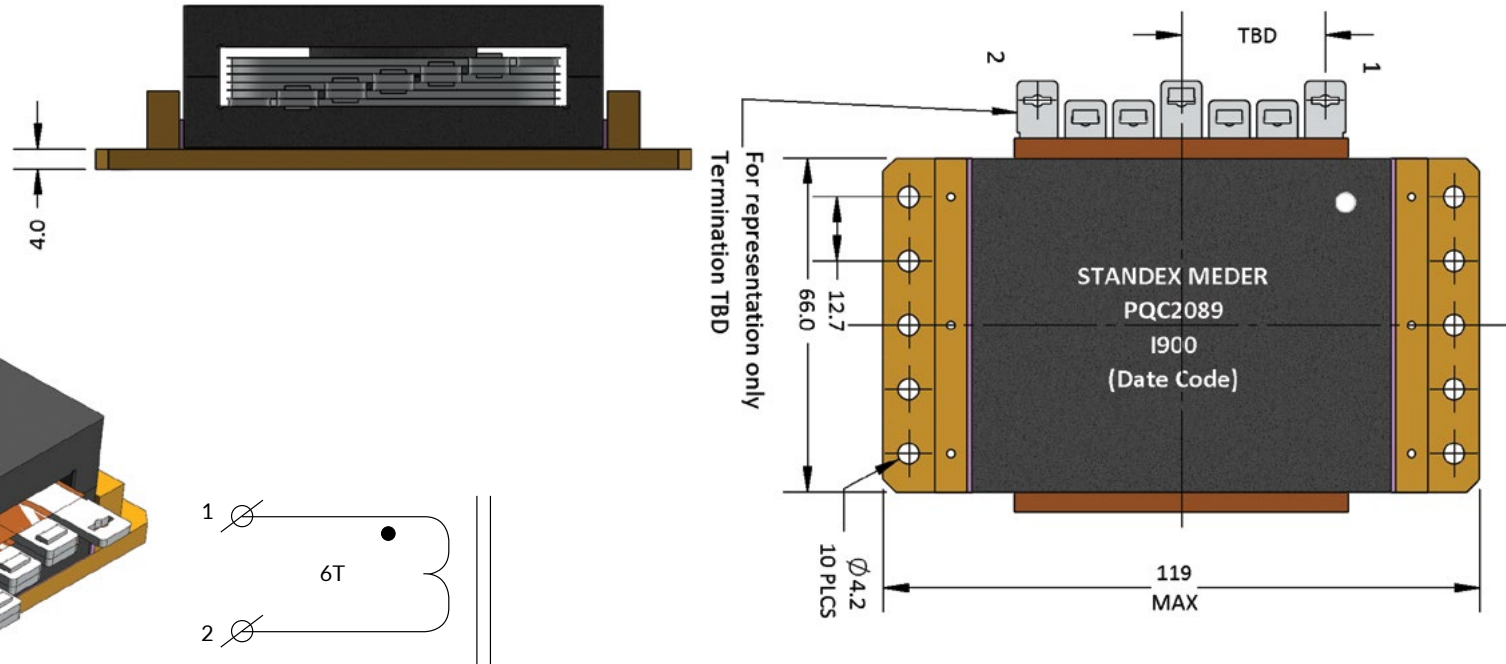
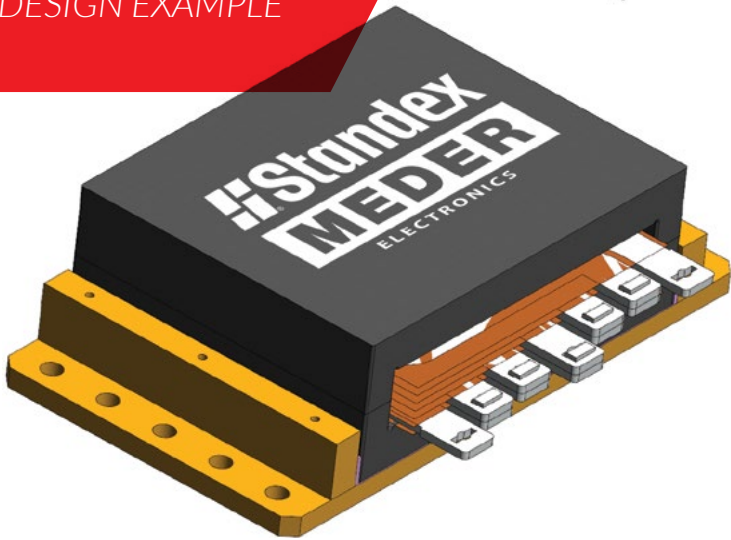
Minimum Isolation Voltage	
Primary To Secondary	2500VAC for 1min
Primary To Core	2500VAC for 1min
Secondary To Core	2500VAC for 1min
Primary Inductance, N_p , Min.	1000µH
Primary Resistance, N_p , Max.	5mOhm
Secondary Resistance, N_s , Max.	10mOhm
Leakage Inductance 1-2/3-4-5 Shorted, Typ.	0.7µH
Weight Range	800-1600grams

NOTES:

- 1) CUSTOM TOOLED CORE UNIQUE TO STANDEX PRODUCT OFFERING
- 2) LARGE CROSS-SECTIONAL AREA REDUCES MAGNETIC FLUX DENSITY
- 3) MULTI LAYER PCB'S REDUCE AC LOSSES

SIZE 900
10kW-20kW

DESIGN EXAMPLE



INDUCTOR DESIGN | EXAMPLE - PQC2089

ELECTRICAL SPECIFICATIONS

Inductance At Rated Current	12μH	Temp. Rise Hot Spot Baseplate, Typ.	+19°C
Rated Current	120ADC	Heatsink/Baseplate Temperature Max.	+70°C
Ripple Frequency	100kHz	Resistance Max.	2mOhm
Minimum Isolation Voltage (Winding To Core/Heatsink)	500VDC	Total Losses At Max. Current (Estimated Calc.)	25W

NOTES:
 1) CUSTOM TOOLED CORE UNIQUE TO STANDEX PRODUCT OFFERING
 2) LARGE CROSS-SECTIONAL AREA REDUCES MAGNETIC FLUX DENSITY

HIGH POWER // 10kW-250kW

“Renewable Energy”

Size 900, 2100, and 4000 are ideally suited for high power applications with an optimal power range of 10kW-250kW. This size offers volumetric efficiency with low AC losses in a low profile, ultra compact package, as well as excellent repeatability and thermal management characteristics.

TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT

Optimum Power Range: 10kW - 250kW

Current Rating Max.: 500A (+30% for THT)

Optimum Frequency Range: 40 - 125kHz

Mounting Options:

Through-Hole (THT)

Topologies:

Full Bridge, Full Bridge (ZVS), Half Bridge,

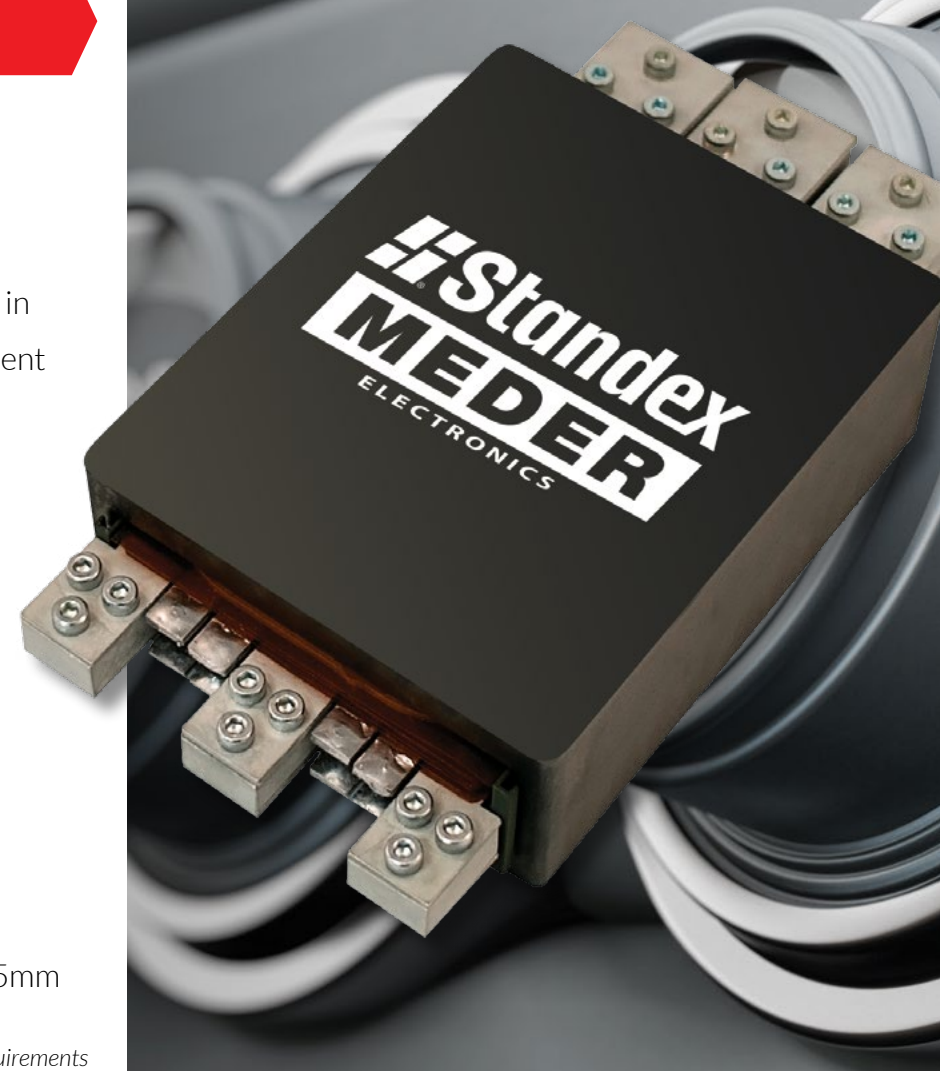
Half Bridge (ZVS), Push-Pull, Resonant

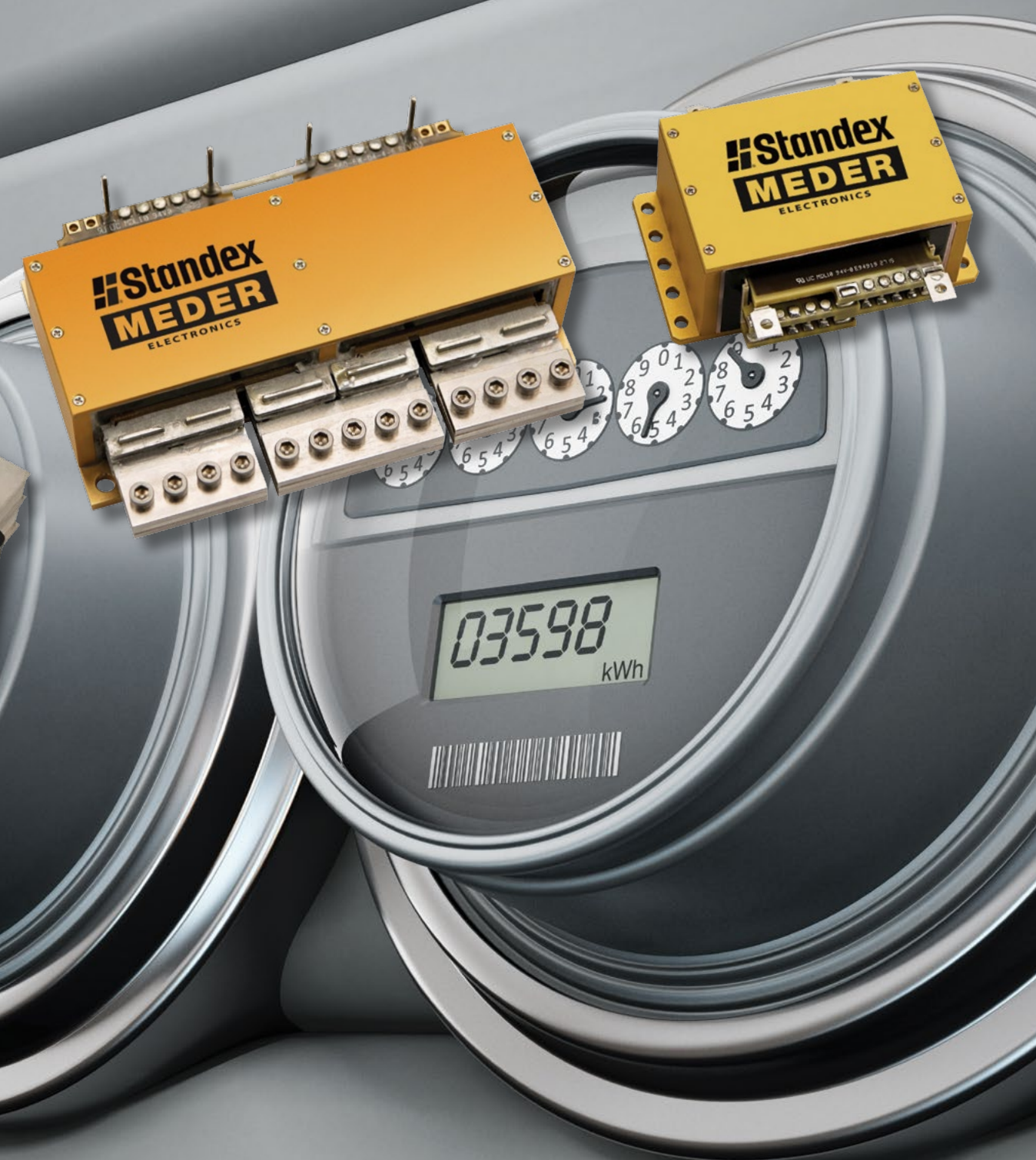
Typical Dimensions:

L	W	H
120-145mm	94-111mm	38-45mm

Length (L) May Vary Depending On Terminals

Height (H) Depending On Input & Output Requirements





APPLICATIONS

- Fast Charging
- Electric & Hybrid Transportation
- Renewable Energy - Wind & Photovoltaic Systems
- Aerospace & Military (high/repeat reliability)
- Welding, Lasers, & Test Equipment
- DC-DC Converters
- AC-DC resonant designs
- Switch Mode Power Supplies
- Distributed Isolated Power
- Grid Energy Storage

CUSTOMER CONFIGURATIONS

- Quick assembly often w/o start-up or tooling costs
- Soft switching, single or multiple outputs
- Wide switching frequency range
- Input/output voltages
- Optimized turns ratio
- Thermal solutions heat sinks, etc.
- Multiple terminal/termination options
- Value-added assemblies

That's **Standex** | Smart.

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