150 Watt QBR Series
10:1 Encased DC/DC Converter

PRELIMINARY

Typical unit

Output Voltage (V)	Output Current (A)	Input Voltage (V)
12	12.5	16-160
24 In Development	6.25	16-160
48 In Development	3.13	16-160

Optimized for harsh environments in industrial/railway applications, the QBR DC-DC converter series offer regulated outputs in an industry-standard quarter brick fully encased package.

FEATURES

- Efficiency up to 91% @ 72Vin, 12Vout.
- Ultra-wide input range: 16V-160V
- Output voltage: 12V, 24V, 48V
- Vout trim
- Output power 150W
- Package Dimension (inches): 2.41 x 1.56 x 0.53, standard quarter-brick
- OVP, OCP, OTP.
- Positive or Negative Remote ON/OFF.
- Operating Baseplate Temperature range -40°C to +100°C.
- 4242VDC input to output isolation, reinforced.
- Hold Up Time (10-30mS, with external C)
- UVLO Set up (resistor programmable)
- Meets requirements for EN50155

SAFETY FEATURES

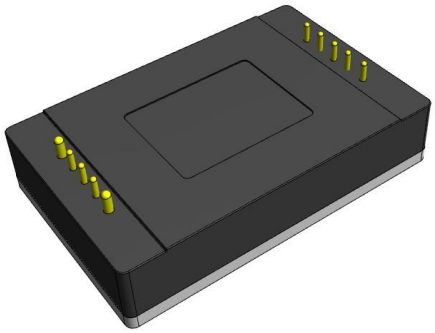
- Reinforced insulation
- UL 60950-1, 2nd Edition
- CSA-C22.2 No. 60950-1
- IEC/EN60950-1, 2nd edition
- RoHS compliant

PRODUCT OVERVIEW

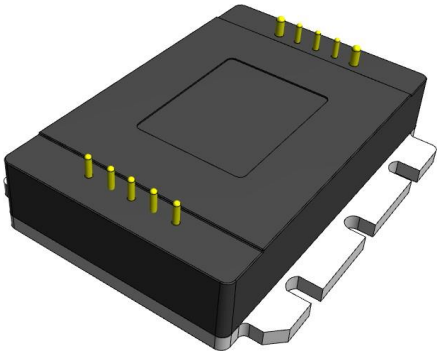
The QBR series of isolated, regulated converter modules deliver an impressive 150W output power from an ultra-wide 10:1 input voltage range, complying with the 24V to 110V input battery voltages including transients as per EN50155 (2017) standard. The converter comes in a fully encased industry standard quarter brick package offering astonishing efficiencies. The fully isolated (3000 Vrms) QBR series features a 16 to 160 Volt DC input voltage range. Typical applications include industrial, railway and transportation. The QBR's diode rectifier topology and fixed frequency operations means excellent efficiencies of up to 91%. A wealth of electronic protection features include input under voltage lockout, output over voltage lockout protection, output current limit, current sharing, short circuit hiccup, Vout overshoot, and over temperature shutdown.

The QBR series is designed to meet all UL and IEC emissions, safety, and flammability certifications.

W/O FLANGE BASEPLATE



FLANGED BASEPLATE



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PERFORMANCE SPECIFICATIONS SUMMARY AND ORDERING GUIDE [1] [2]													
Root Model [1]	Output							Input				Efficiency	Package (w/o flange)
	V_{out} (V)	I_{out} (A, max.)	Power (W)	Ripple & Noise (mV pk-pk)		Regulation [3] (max.)		V_{in} Nom. (V)	V_{in} Range (V)	I_{in}, no load (mA)	I_{in}, full load (A)		
				Typ.	Max.	Line	Load					Typ.	Case (inches)
72WS12.150QBR	12	12.5	150	100	160	±0.5%	±0.5%	72	16-160	50	7.2	91%	2.41 x 1.56 x 0.53
In Development	24	6.25	150	200	280	±0.5%	±0.5%	72	16-160	70	7.2	91%	2.41 x 1.56 x 0.53
In Development	48	3.13	150	300	400	±0.5%	±0.5%	72	16-160	90	7.2	91%	2.41 x 1.56 x 0.53

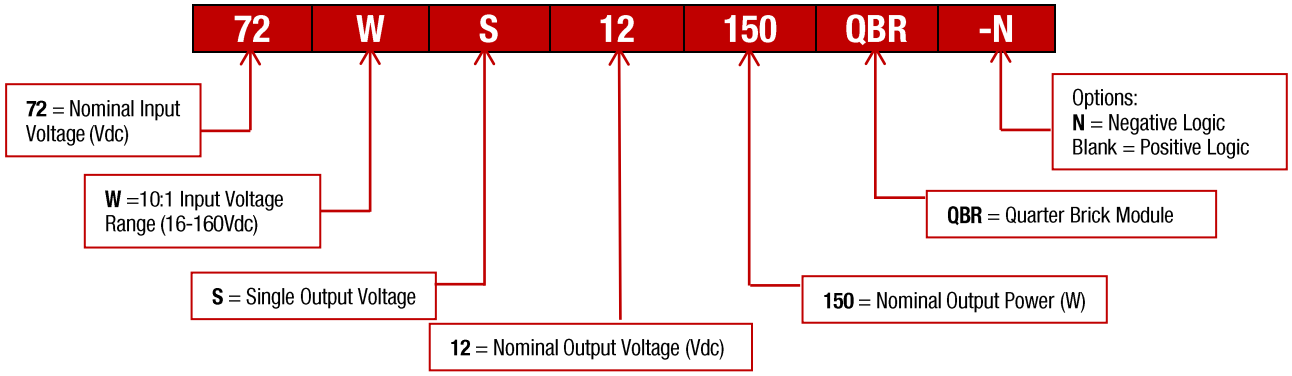
Notes:

[1] Please refer to the Part Number Structure when ordering.

[2] All specifications are at nominal line voltage and full load, +25°C unless otherwise noted. See detailed specifications. Output capacitors are 1µF ceramic multilayer in parallel with 10µF. I/O caps are necessary for our test equipment and may not be needed for your application.

[3] Regulation specifications describe output voltage deviations from a nominal/midpoint value to either extreme (50% load step).

PART NUMBER STRUCTURE



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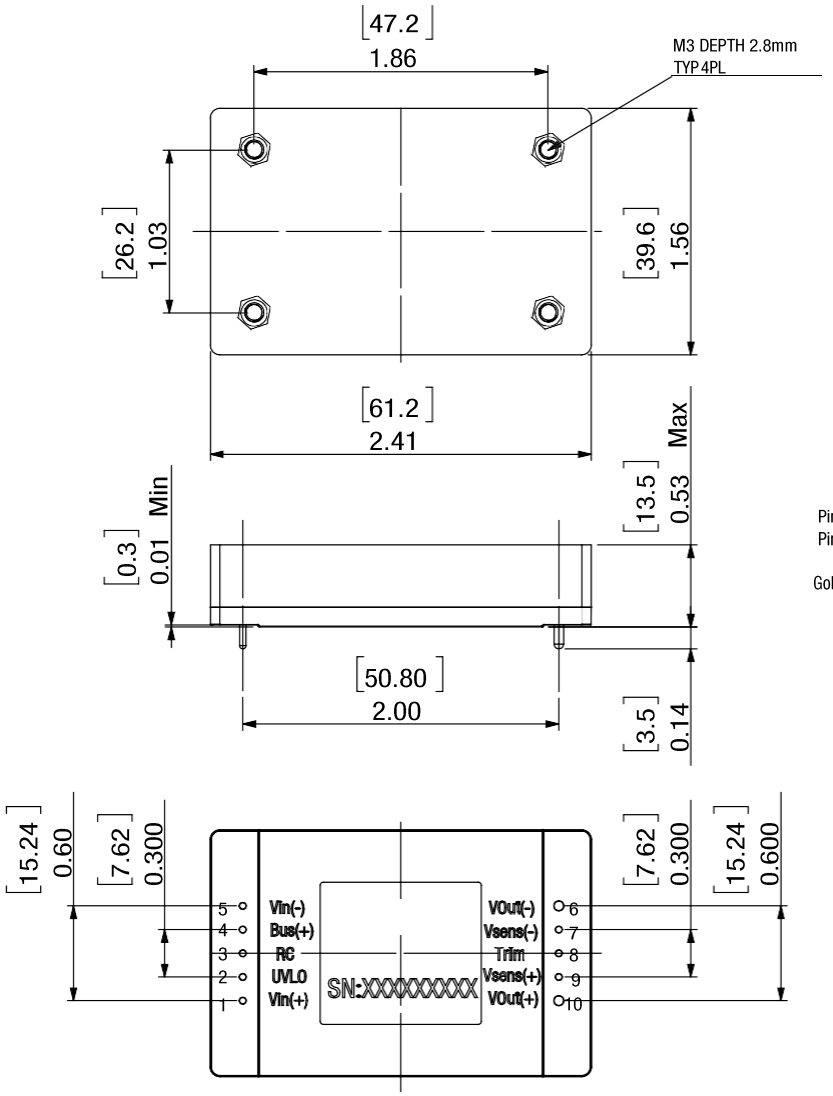
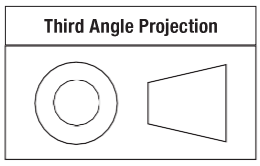
MECHANICAL SPECIFICATIONS (BASEPLATE WITHOUT FLANGE)



Pin Material
Pin No. 1-5: 7-9 Dia 0.04", Copper Alloy
Pin No. 6,10: Dia 0.06", Copper Alloy
Finish: (All Pins)
Gold (5u"Min) Over Nickel (100u"Min)

Dimensions are in inches (mm) shown for ref. only.



Tolerances (unless otherwise specified):
.XX ± 0.02 (0.5)
.XXX ± 0.010 (0.25)
Angles ± 1˚

Components are shown for reference only and may vary between units.

Pin	Function	Pin	Function
1	Vin(+)	6	Vout(-)
2	UVLO	7	Vsense(-)
3	RC	8	Trim
4	Bus(+)	9	Vsense(+)
5	Vin(-)	10	Vout(+)

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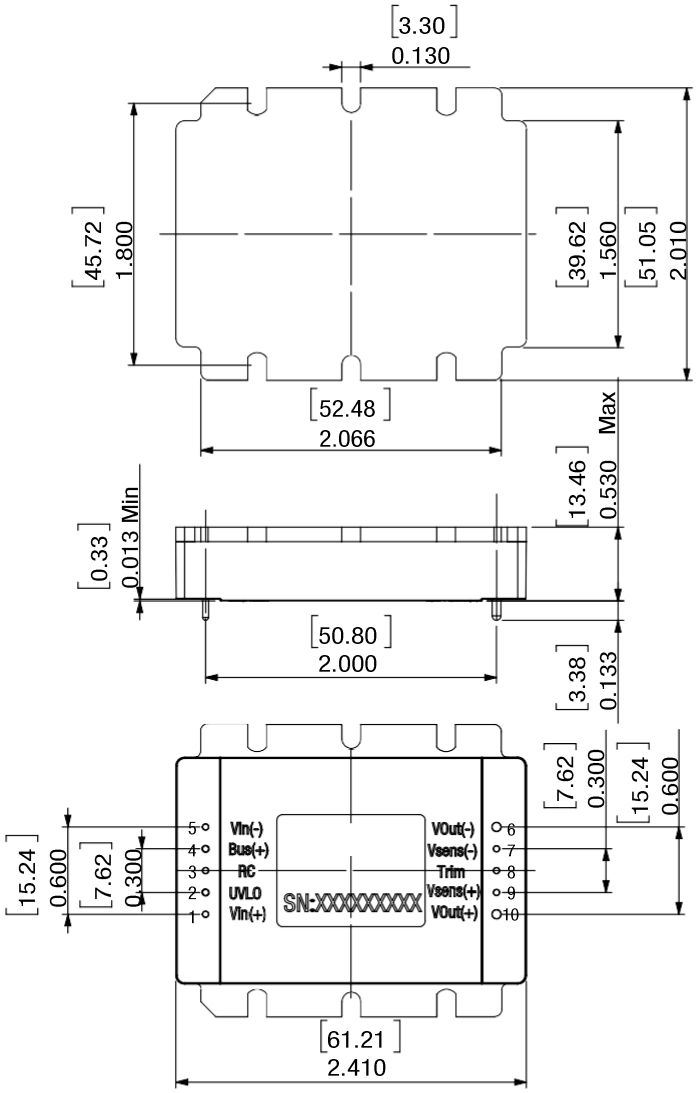
MECHANICAL SPECIFICATIONS (FLANGED BASEPLATE)



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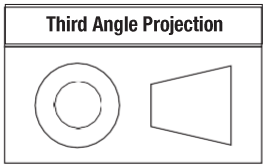

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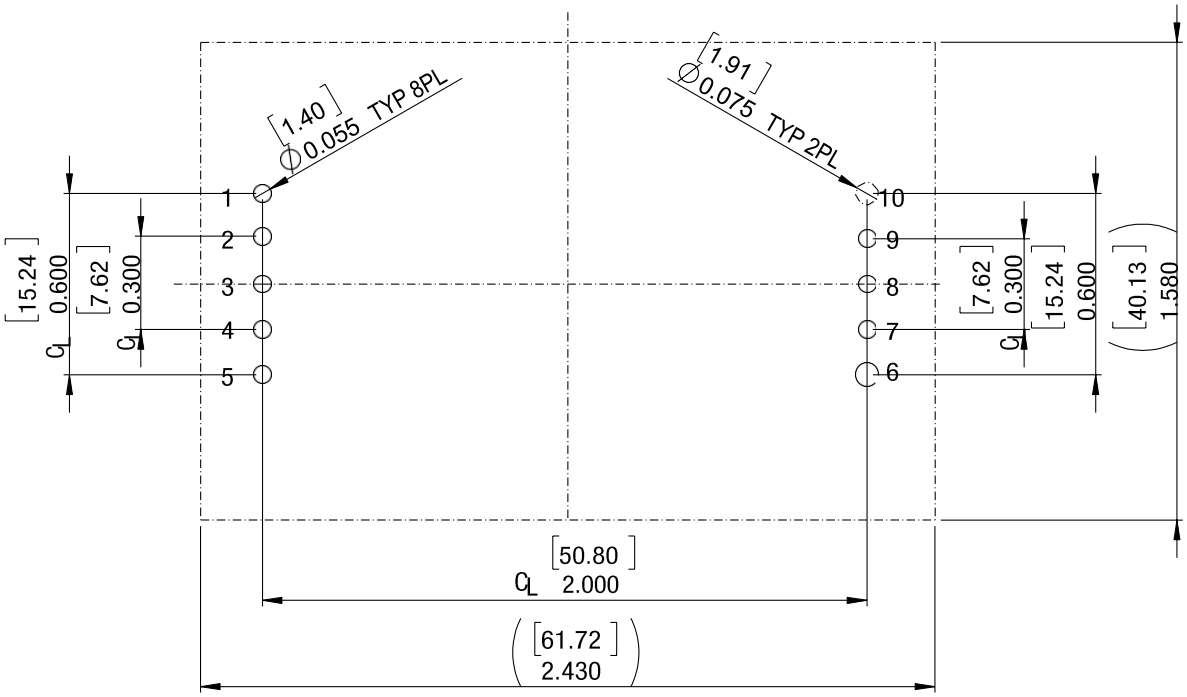
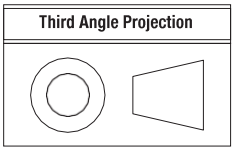
RECOMMENDED FOOTPRINT SPECIFICATIONS



FOOTPRINT RECOMMENDATION

Dimensions are in inches (mm) shown for ref. only.



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.XXX ± 0.010 (0.25)
Angles ± 1°

Components are shown for reference only and may vary between units.

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