

MCA15

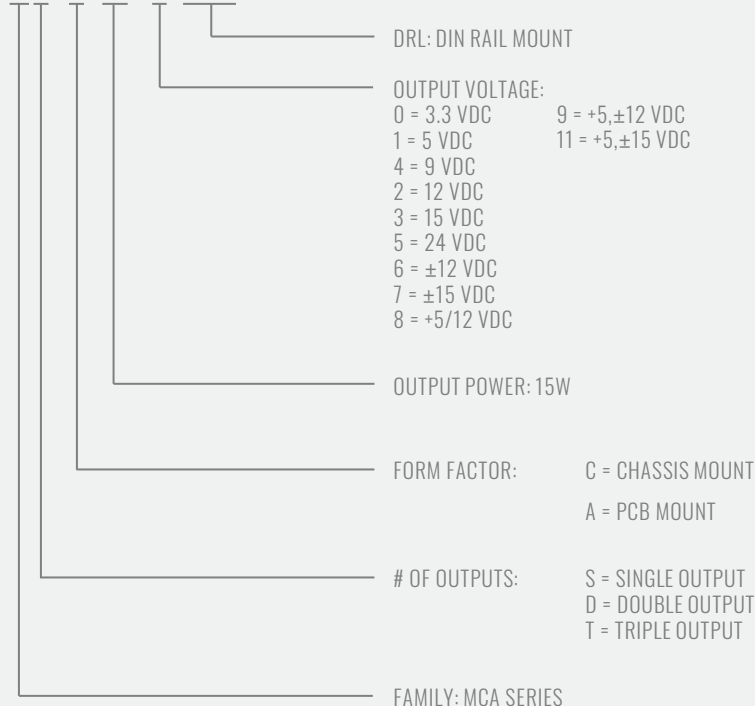
15W ULTRAMINIATURE MODULAR SWITCHING POWER SUPPLIES

The MCA-15 series is a line of 15W ultraminiature modular switching power supplies designed for high efficiency and reliability across various applications. Available in single, dual, and triple output configurations, they feature a universal 90 to 264VAC input for global use without additional converters. The output voltage ranges from 3.3VDC to 24VDC, meeting diverse electronic needs. With 3,000 input-to-output isolation, they ensure safety against electrical surges. Available in PCB and chassis mount packages, they offer versatile installation options. The MCA-15 series also has full safety approvals, ensuring compliance with



HOW TO ORDER

MSCC-1500/DRL



FEATURES

INPUT VOLTAGE

90-264 VAC (100-240 VAC, nom.)

INPUT FREQUENCY

47-440Hz, 50-60Hz nom.

OPERATING TEMPERATURE

0 to $+50^{\circ}\text{C}$ (FL) See Derate* (Free-air Convection)

SAFETY APPROVALS

UL/cUL: UL60950-1 2nd ed./
C22.2 60950-1 2nd ed.
UL-EU: EN60950-1 2nd ed.
CE: EN60601-1-2
CB: IEC60950-1 2nd ed.

INPUT-OUTPUT ISOLATION

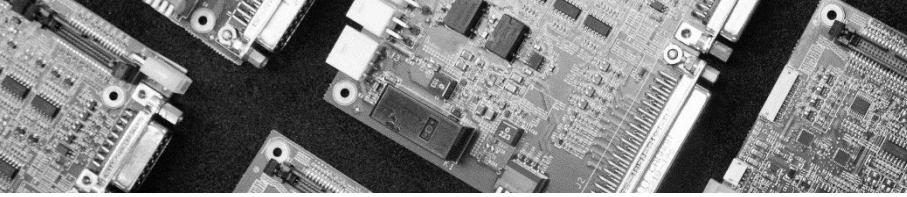
3000VAC, 60S

OPERATING FREQUENCY

140 kHz, typ., fixed

EFFICIENCY

See the model selection chart



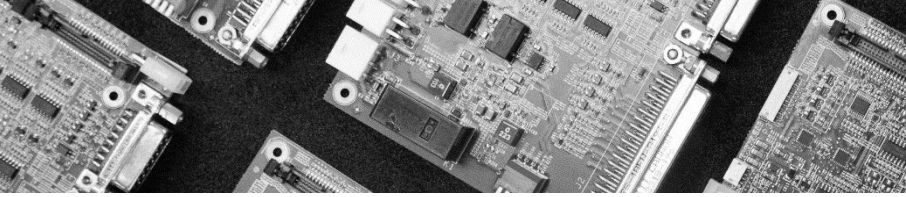
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PARAMETERS

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Input Voltage	90-264VAC (100-240VAC, nom.)
Input Frequency	47-440Hz, 50-60Hz Nom.
Input Current (LL/HL)	0.6A / 0.3A max.
Inrush Current (Note 1)	20A@100VAC, 40A@200VAC, typ
Leakage Current	<3.5mA at 264Vin, 50Hz
Output Voltage/Current	See Model Selection Chart
Preset Accuracy	Single & Matched Dual: $\pm 1\%$ nom.
Unmatched	Dual -0108 (5V, 12V): $\pm 2\%$, $\pm 5\%$ nom. Triple O/P (5, $\pm$ O/P): $\pm 1\%$, $\pm 5\%$ nom.
Voltage Adjust	$\pm 6\%$, typ
Load/Line Regulation (Note 3)	See Model Selection Chart
Cross Regulation (Note 11)	Dual O/P: 3% max.
Unmatched	Dual 0108 (5V, 12V): $\pm 1\%$, $\pm 5\%$ max. Triple O/P: N/A, $\pm 0.5\%$ max.
Temperature Coefficient	$\pm 0.03\%/^{\circ}\text{C}$
Ripple/Noise (Note 2)	See Model Selection Chart
Over Voltage Protection	Clamp*
Start Up	<4S
Hold Up Time	30mS, typ
Rise Time	<20mS
Over-Shoot/Under-Shoot	<10% nominal O/P voltage
Short Circuit Protection	Continuous, self-recovering*
* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long-term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.	
On/Off Control (Note 4)	Open Collector Logic "1"/Open=ON Logic "0"/GND=OFF
Input-Output Isolation	3000VAC, 60S
Insulation Resistance (Note 6)	$\geq 20\text{M}\Omega$
Operating Frequency	140 kHz, typ., fixed
Efficiency	See Model Selection Chart
Safety UL/cUL:	UL60950-1 2 nd ed. C22.2 60950-1 2 nd ed.
UL-EU:	EN60950-1 2 nd ed.
CE:	EN60601-1-2
CB:	IEC60950-1 2 nd ed.



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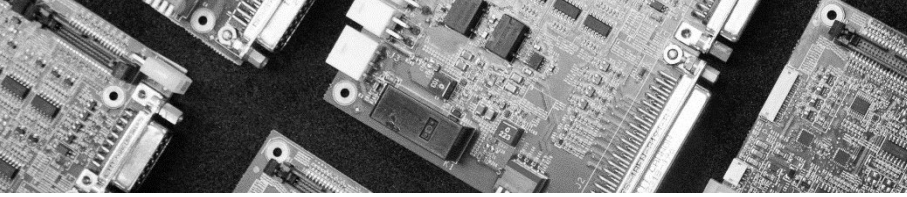
PARAMETERS

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Oper. Temperature	0 to +50°C FL See Derate* (Free-air Convection)
Relative Humidity (Note 5)	0-95%, Non-Condensing
Storage Temperature	-25 to +71°C *
MTBF, Single/Multi O/P (Note 9)	180,000 / 110,000 Hrs
Vibration (Note 10)	2G Peak, 10~500Hz, 3 Axes
Drop Test	70 cm
EMS:	ESD: EN61000-4-2, 6kV Contact, 8kV Air RS: EN61000-4-3 EFT: EN61000-4-4, 2kV on AC Line Surge: EN61000-4-5, 1kV L-N CS: EN61000-4-6, 3V EMF Dips (Note 8): EN61000-4-11
EMI	CISPR EN55011 class B
Case Material	Rynite, 94V-0 Rated
Construction	Encapsulated, Soft Pot
Weight PCS/CHA	5.6 oz (159g) / 8.9 oz (252g)

NOTES

1. Cold Start and 25°C
2. Test by DC loading side parallel with a 0.1uF ceramic capacitor and measured bandwidth with DC-20MHz.
3. Regulation includes line, cross temperature drift, and tolerance variation Load regulation measured from 20% to Full load. All other outputs at nominal load.
4. No termination is necessary with the Control pin to maintain constant "On" operation.
5. Operating or Storage
6. 500Vdc, 1 Sec between primary to secondary
7. FR: 80MHz-2.5GHz; Field Strength 3V/M
8. 95% 250Cy, 70% 25Cy, 40% 5Cy, 5% 0.5Cy
9. MIL STD 217, 25°C
10. Tested with a shipping container for 30 minutes
11. Measured at nominal load with the other output(s) varied between 20% and 100% nominal load.

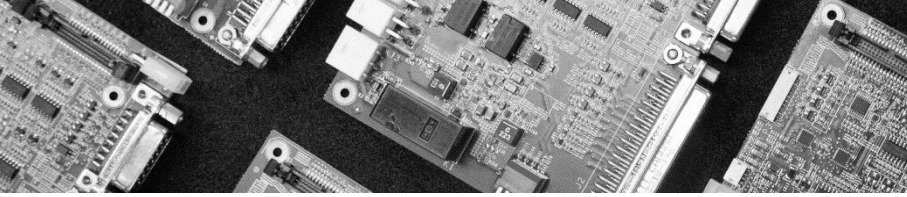


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MODEL NUMBER OUTPUT VOLTAGE OUTPUT AMPS OUTPUT WATTS RIPPLE & NOISE MAX. (NOTE 2) LINE/LOAD REG. MAX. (NOTE 3) EFFICIENCY

SINGLE OUTPUT – PCB Mount						
MSCA-1500	3.3VDC	3.5	12W	100mV pk-pk	1% / 3%	66% nom.
MSCA-1501	5VDC	3	15W	100mV pk-pk	1% / 1%	73% nom.
MSCA-1504	9VDC	1.66	15W	75mV pk-pk	0.5% / 1%	75% nom.
MSCA-1502	12VDC	1.25	15W	75mV pk-pk	0.5% / 0.5%	77% nom.
MSCA-1503	15VDC	1	15W	75mV pk-pk	0.5% / 0.5%	78% nom.
MSCA-1505	24VDC	0.63	15W	75mV pk-pk	0.5% / 0.5%	80% nom.
SINGLE OUTPUT – Chassis Mount						
MSCC-1500	3.3VDC	3.5	12W	100mV pk-pk	1% / 3%	66% nom.
MSCC-1501	5VDC	3	15W	100mV pk-pk	1% / 1%	73% nom.
MSCC-1504	9VDC	1.66	15W	75mV pk-pk	0.5% / 1%	75% nom.
MSCC-1502	12VDC	1.25	15W	75mV pk-pk	0.5% / 0.5%	77% nom.
MSCC-1503	15VDC	1	15W	75mV pk-pk	0.5% / 0.5%	78% nom.
MSCC-1505	24VDC	0.63	15W	75mV pk-pk	0.5% / 0.5%	80% nom.
SINGLE OUTPUT – DIN Rail Mount						
MSCC-1500/DRL	3.3VDC	3.5	12W	100mV pk-pk	1% / 3%	66% nom.
MSCC-1501/DRL	5VDC	3	15W	100mV pk-pk	1% / 1%	73% nom.
MSCC-1504/DRL	9VDC	1.66	15W	75mV pk-pk	0.5% / 1%	75% nom.
MSCC-1502/DRL	12VDC	1.25	15W	75mV pk-pk	0.5% / 0.5%	77% nom.
MSCC-1503/DRL	15VDC	1	15W	75mV pk-pk	0.5% / 0.5%	78% nom.
MSCC-1505/DRL	24VDC	0.63	15W	75mV pk-pk	0.5% / 0.5%	80% nom.
DUAL OUTPUT – PCB Mount						
MDCA-1506	±12VDC	±0.63	15W	75mV pk-pk	1% / 3%	72% nom.
MDCA-1507	±15VDC	±0.5	15W	75mV pk-pk	1% / 3%	74% nom.
MDCA-1508	+5/12 VDC	1.5/0.63	15W	100/150mV pk-pk	1% / 1%,5%	74% nom.
DUAL OUTPUT – Chassis Mount						
MDCC-1506	±12VDC	±0.63	15W	75mV pk-pk	1% / 3%	72% nom.
MDCC-1507	±15VDC	±0.5	15W	75mV pk-pk	1% / 3%	74% nom.
MDCC-1508	+5/12VDC	1.5/0.63	15W	100/150mV pk-pk	1% / 1%,5%	74% nom.
DUAL OUTPUT – DIN Rail Mount						
MDCC-1506/DRL	±12VDC	±0.63	15W	75mV pk-pk	1% / 3%	72% nom.
MDCC-1507/DRL	±15VDC	±0.5	15W	75mV pk-pk	1% / 3%	74% nom.
MDCC-1508/DRL	+5/12VDC	1.5/0.63	15W	100/150mV pk-pk	1% / 1%,5%	74% nom.

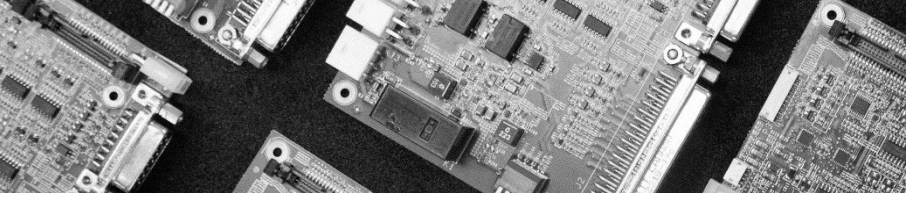


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MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT AMPS	OUTPUT WATTS	RIPPLE & NOISE MAX. (NOTE 2)	LINE/LOAD REG. MAX. (NOTE 3)	EFFICIENCY
TRIPLE OUTPUT – PCB Mount						
MTCA-1509	+5,±12 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	70% nom.
MTCA-1511	+5,±15 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	71% nom.
TRIPLE OUTPUT - Chassis Mount						
MTCC-1509	+5,±12 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	70% nom.
MTCC-1511	+5,±15 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	71% nom.
TRIPLE OUTPUT– DIN Rail Mount						
MTCC-1509/DRL	+5,±12 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	70% nom.
MTCC-1511/DRL	+5,±15 VDC	2.5,0.1/0.1	15W	75, ±75mV pk-pk	0.6%, ±0.2/0.6%, ±0.5%	71% nom.

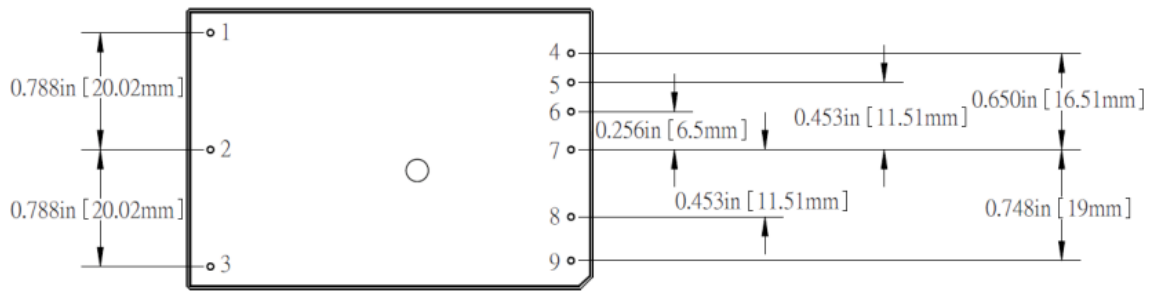
*These Specifications are subject to change at any time without prior notification
All Specifications are typical at nominal input, full load, and 25°C unless otherwise noted*



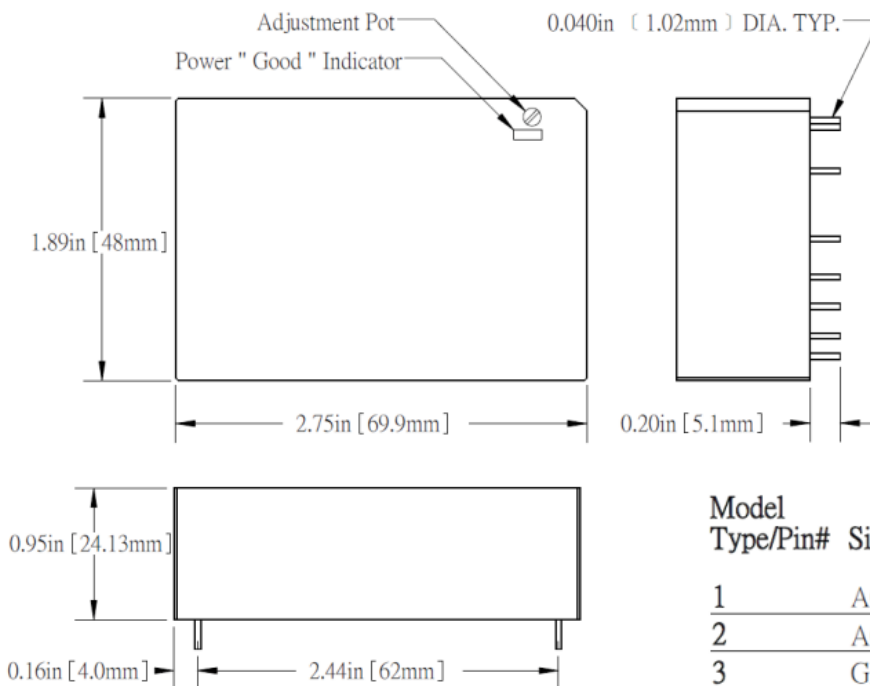
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MECHANICAL DIMENSION- PCB MOUNT

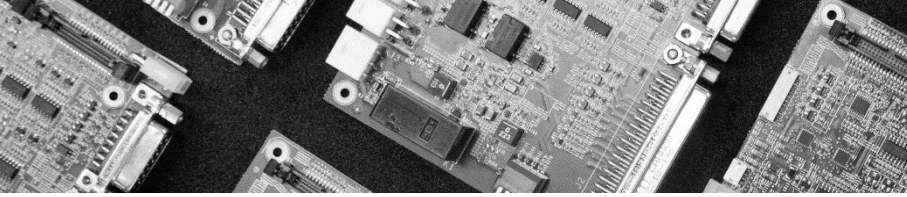


PIN-OUT VIEWED FROM BOTTOM



Model Type/Pin#	Single	Dual Matched	Dual 5/12V	Triple
1	AC HI	AC HI	AC HI	AC HI
2	AC LO	AC LO	AC LO	AC LO
3	GND	GND	GND	GND
4	No Pin	No Pin	No Pin	+Vout
5	+Vout	+Vout	12Vout	+/-Com
6	No Pin	No Pin	No Pin	-Vout
7	No Pin	Out Com	+5Vout	+5Vout
8	-Vout	-Vout	Out Com	+5V Ret
9	Ctrl	Ctrl	Ctrl	Ctrl

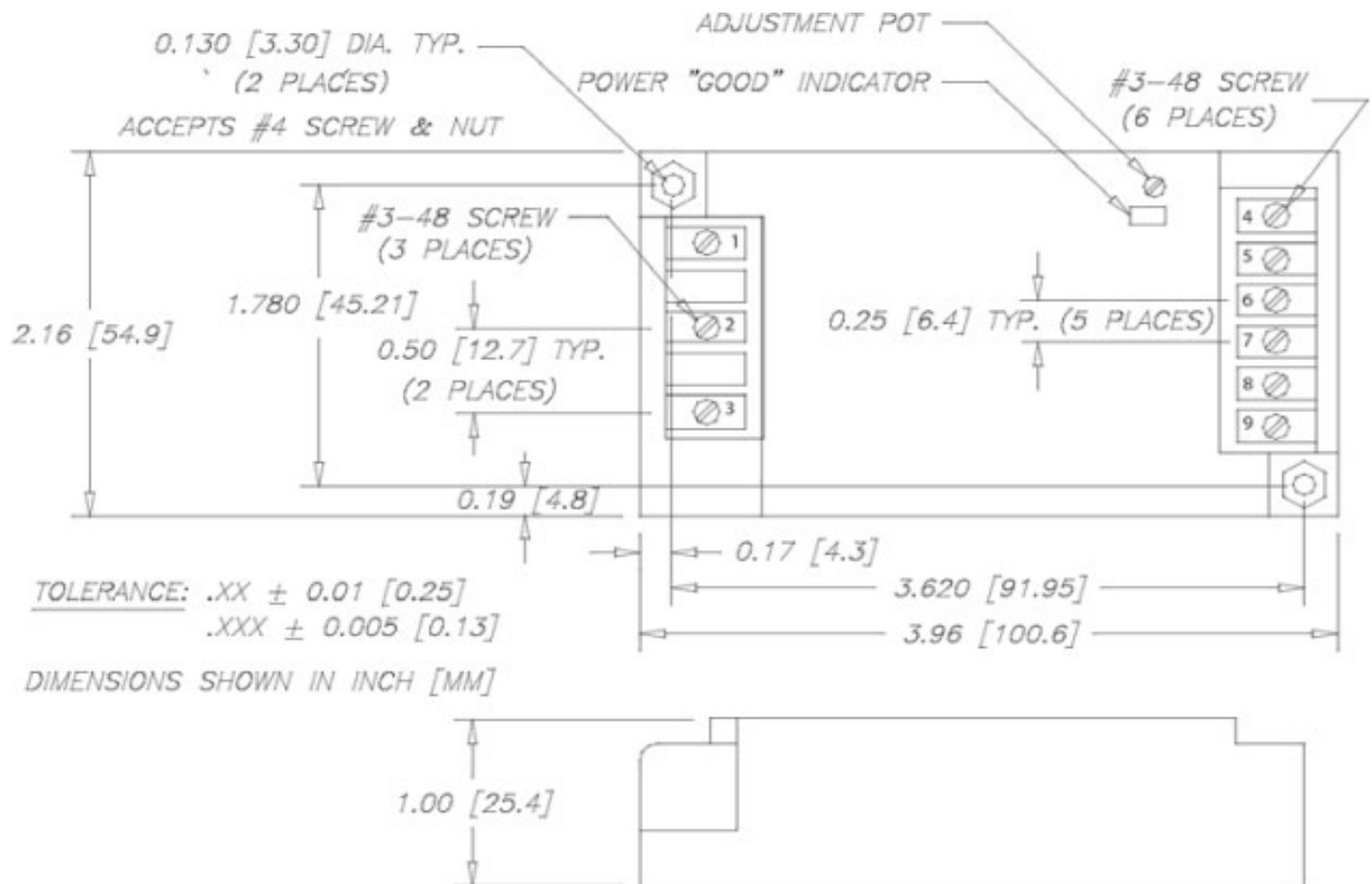
Tolerance : .XX $\pm$ 0.01 [0.254]
.XXX $\pm$ 0.005 [0.13]
Dimensions shown in inch [mm]



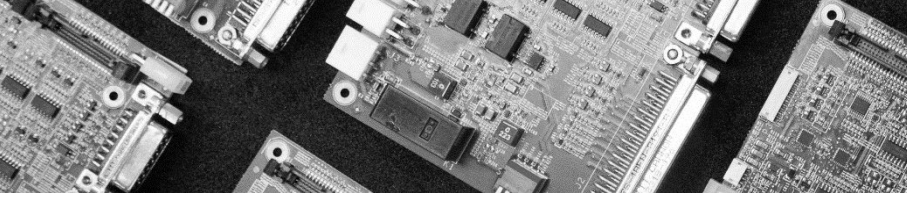
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MECHANICAL DIMENSION- CHASSIS MOUNT



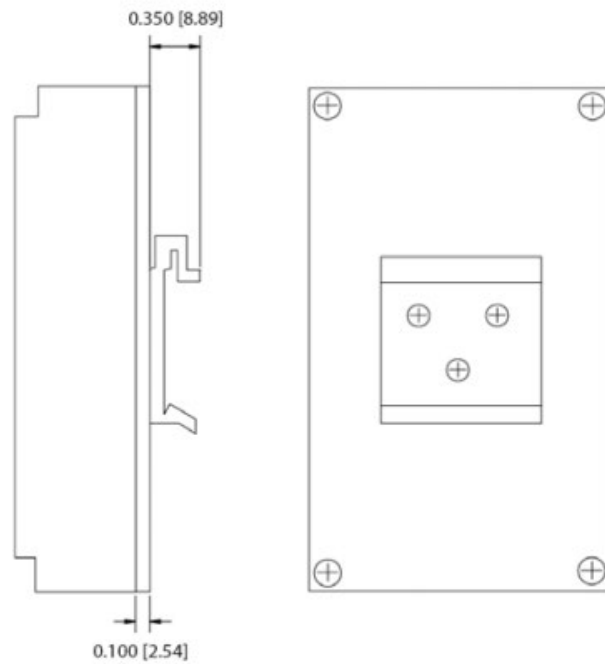
Model Type / Pin#	Single	Match Dual	Unmatch Dual	Triple
1	AC LO	AC LO	AC LO	AC LO
2	GND	GND	GND	GND
3	AC HI	AC HI	AC HI	AC HI
4	Ctrl	Ctrl	Ctrl	Ctrl
5	-Vout	-Vout	Com	+5 Ret
6	-Vout	Com	Com	+5Vout
7	+Vout	Com	+5Vout	-Vout
8	+Vout	+Vout	+12Vout	+/- Com
9	N/C	N/C	N/C	+Vout



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MECHANICAL DIMENSION- DIN RAIL



DIN Rail mounting kit available for Chassis-mount modules, specify part # M-DRL-15. Kit includes mounting plate, DIN Rail clip, and assembly hardware.

DERATE CURVE

