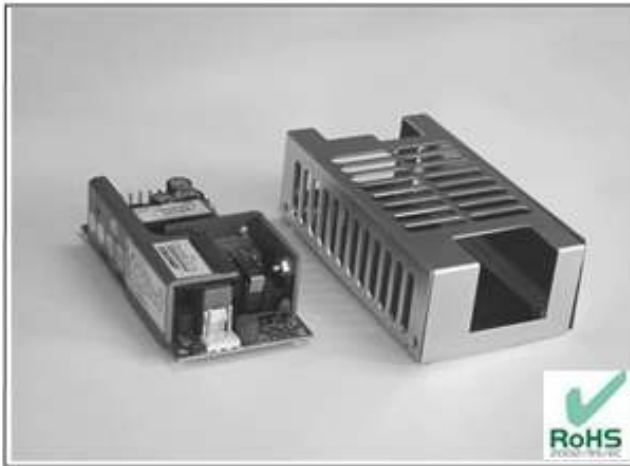


ECM SERIES

AC/DC Single & Multi Output: 40-100 Watts



Specifications

INPUT VOLTAGE:	85-264VAC (120-370VDC)
INPUT FREQUENCY:	47-63Hz
INPUT CURRENT:	40W: 0.4A max @ 230VAC 60W: 0.6A max @ 230VAC 100W: 0.9A max @ 230VAC
INRUSH CURRENT:	40A max @ 230VAC
EARTH LEAKAGE CURRENT:	<100µA @ 115VAC, <200µA @ 230VAC
INPUT PROTECTION:	Internal 3.15A fuse in line and neutral
OUTPUT VOLTAGE:	See tables
OUTPUT VOLTAGE TRIM:	±5% on 3V3 and 5V versions, ±10% on other single output models and V1 of multi-output models. See note 1
MINIMUM LOAD:	See tables
START UP DELAY:	2s max
START UP RISE TIME:	50ms
HOLD UP TIME:	16/75ms min @ 115/230VAC
LINE REGULATION:	±0.5%
LOAD REGULATION:	±1% single output models ±3% V1 ±5% V2 & V3 ECM40/60 multi-output models ±1% V1 & V2, ±5% V3 & V4 ECM100
CROSS REGULATION:	2% on ECM40/60
OVER/UNDERSHOOT:	None at turn on/off
TRANSIENT RESPONSE:	4% max deviation, recovery to within 1% in 500µs for a 25% load change
RIPPLE & NOISE:	1% pk-pk, 20MHz bandwidth
OVP:	115-135% Vnom, recycle input to reset
OVERLOAD PROTECTION:	110-150% on primary power limit, auto recovery
SHORT CIRCUIT PROTECT:	Trip and restart (Hiccup mode)
TEMP. CO-EFFICIENT:	0.05%/°C
EFFICIENCY:	80-85% depending on model
ISOLATION:	4000VAC Input to Output 1500VAC Input to Ground 1500VAC Output to Ground
SWITCHING FREQUENCY:	70KHz typical
COOLING:	Convection cooled
HUMIDITY:	5-95% RH non-condensing
MTBF:	250kHrs per MIL-HDBK-217F
OPERATING TEMP:	0°C to +80°C. Refer to derating curves for specific operating limitations
STORAGE TEMP:	-20°C to +85°C
OPERATING ALTITUDE:	3000m
SHOCK:	30 G pk, half sine, 6 axis

Features

- Universal input 85~264VAC
- Medical approval EN60601-1
- Compact size: 4 x 2 in. package (ECM40-60) • Short circuit and overvoltage protection
- Harmonic correction EN61000-3-2
- Immunity EN61000-4
- EMC to EN55022 Level B
- Wide range of output voltage options
- Single, dual and triple output models
- Convection cooled
- Voltage trim pot for V1 on all models

Specifications (cont)

VIBRATION:	2G rms, 5Hz to 500kHz, 3 axis
EMISSIONS:	EN60601-1-2, EN61204-3, FCC20780, EN55022 & EN55011, level B conducted
HARMONIC CURRENTS:	EN61000-3-2
VOLTAGE FLICKER:	EN61000-3-3
ESD IMMUNITY:	EN61000-4-2, level 2 Perf Criteria B
RADIATED IMMUNITY:	EN61000-4-3, 10 V/m Perf Criteria B
EFT/BURST:	EN61000-4-4, level 2 Perf Criteria B
SURGE:	EN61000-4-5, level 3 Perf Criteria B
CONDUCTED IMMUNITY:	EN61000-4-6, 10V Pef Criteria B
DIPS & INTERRUPTIONS:	EN61000-4-11, 30% 10ms, 60% 100ms, 100% 5000ms Perf Criteria A, B, B
SAFETY APPROVALS:	EN60950, UL60950, CSA22.2 601.1, EN60601-1, UL60601-1, EN61010-1 for ECM100
DIMENSIONS:	ECM40/60: 102 x 50.8 x 30.5mm ECM100: 115 x 64 x 30.5mm
WEIGHT:	ECM40/60: 150 grams ECM100: 180 grams

ECM SERIES

AC/DC Single & Multi Output: 40-100 Watts

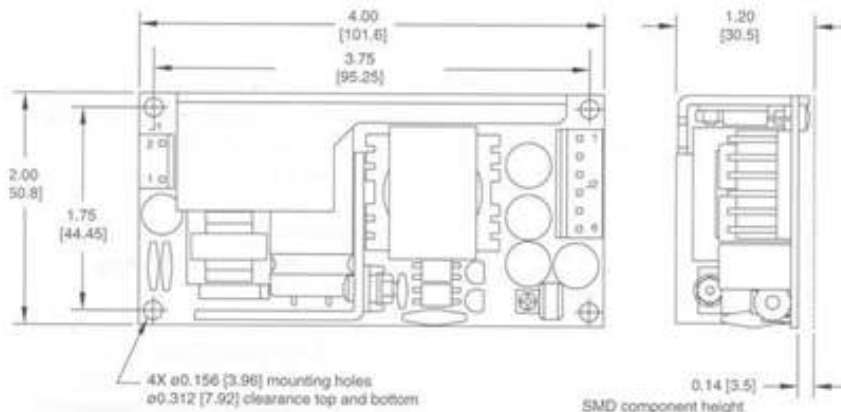
MODEL	Output						Power W
	V1		V2		V3		
ECM40US05	5V	0.0A - 8.0A					40W
ECM40US07	7V	0.0A - 5.7A					40W
ECM40US09	9V	0.0A - 4.4A					40W
ECM40US12	12V	0.0A - 3.5A					40W
ECM40US15	15V	0.0A - 2.7A					40W
ECM40US18	18V	0.0A - 2.2A					40W
ECM40US24	24V	0.0A - 1.7A					40W
ECM40US33	33V	0.0A - 1.2A					40W
ECM40US48	48V	0.0A - 0.9A					40W
ECM40UD21	5V	0.5A - 6.0A	+12V	0.1A - 2.0A			40W
ECM40UD22	5V	0.5A - 6.0A	+15V	0.1A - 1.5A			40W
ECM40UT31	5V	0.5A - 6.0A	+12V	0.1A - 2.0A	-12V	0.0A - 0.5A	40W
ECM40UT32	5V	0.5A - 6.0A	+24V	0.1A - 1.0A	-12V	0.0A - 0.5A	40W
ECM40UT33	5V	0.5A - 6.0A	+15V	0.1A - 1.5A	-15V	0.0A - 0.5A	40W
ECM40UT34	3.3V	0.5A - 6.0A	+5V	0.1A - 1.5A	+12V	0.0A - 0.5A	40W
ECM40UT35	5V	0.5A - 6.0A	+3.3V	0.1A - 1.5A	+12V	0.0A - 0.5A	40W

MODEL	Output						Power W
	V1		V2		V3		
ECM60US05	5V	0.0A - 12A					60W
ECM60US07	7V	0.0A - 8.6A					60W
ECM60US09	9V	0.0A - 6.7A					60W
ECM60US12	12V	0.0A - 5.0A					60W
ECM60US15	15V	0.0A - 4.0A					60W
ECM60US18	18V	0.0A - 3.3A					60W
ECM60US24	24V	0.0A - 2.5A					60W
ECM60US33	33V	0.0A - 1.8A					60W
ECM60US48	48V	0.0A - 1.25A					60W
ECM60UD21	5V	0.5A - 8.0A	+12V	0.1A - 3.0A			60W
ECM60UD22	5V	0.5A - 8.0A	+15V	0.1A - 2.5A			60W
ECM60UT31	5V	0.5A - 8.0A	+12V	0.1A - 3.0A	-12V	0.0A - 0.5A	60W
ECM60UT32	5V	0.5A - 8.0A	+24V	0.1A - 1.5A	-12V	0.0A - 0.5A	60W
ECM60UT33	5V	0.5A - 8.0A	+15V	0.1A - 2.5A	-15V	0.0A - 0.5A	60W
ECM60UT34	3.3V	0.5A - 8.0A	+5V	0.1A - 1.5A	+12V	0.0A - 0.5A	60W
ECM60UT35	5V	0.5A - 8.0A	+3.3V	0.1A - 1.5A	+12V	0.0A - 0.5A	60W

Notes ECM 40 - 60 watts:

1. V2 will track a change in V1 by the same percentage change in voltage as V1 is trimmed.
2. To receive unit with cover fitted, add suffix 'C' to model number. For Class 1 operation only.
3. A 120% peak load can be taken for up to 100ms with a 25% duty cycle.

ECM40-60



Input Connector J1	
Pin 1	Line
Pin 2	Neutral

J1 mates with Molex housing 09-50-3031 and Molex series 2878 crimp terminals

Output Connector J2		
Pin	Single	Multi
1	+V1	+V1
2	+V1	+V1
3	RTN	RTN
4	RTN	RTN
5	NC	-V3
6	NC	+V2

J2 mates with Molex housing 09-50-3061 and Molex series 2878 crimp terminals

Notes:

1. All dimensions in inches (mm). Tolerance .xx = ± 0.02 (0.50); .xxx = ± 0.01 (0.25).
2. Cable harness with 300mm wire available. For single output models, order Part No ECM40/60S LOOM. For multi-output models order Part No. ECM40/60DT LOOM.
3. Mating connector kit available. Order Part No. ECM40/60 CONKIT
4. Covers available. Order Part No. ECM40/60 COVER. Cover dimensions are 4.49 x 2.52 x 1.52 (114 x 64 x 38.5)

ECM SERIES

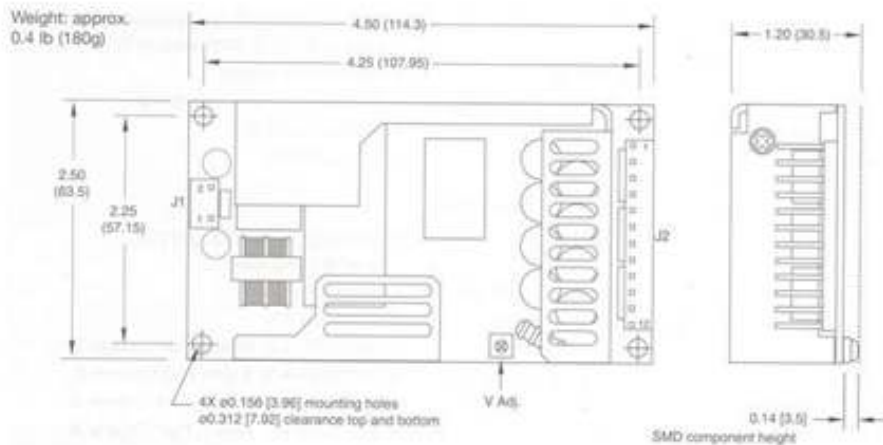
AC/DC Single & Multi Output: 40-100 Watts

MODEL	Output						Power W
	V1		5 CFM Cooling	V2		V3	
ECM100US03	3.3V	0.0A - 16.0A	20.0A				100W
ECM100US05	5V	0.0A - 16.0A	20.0A				100W
ECM100US07	7V	0.0A - 11.4A	14.3A				100W
ECM100US09	9V	0.0A - 8.8A	11.1A				100W
ECM100US12	12V	0.0A - 7.5A	8.3A				100W
ECM100US15	15V	0.0A - 6.0A	6.6A				100W
ECM100US18	18V	0.0A - 5.0A	5.5A				100W
ECM100US24	24V	0.0A - 4.1A	4.1A				100W
ECM100US33	33V	0.0A - 3.0A	3.0A				100W
ECM100US48	48V	0.0A - 2.1A	2.1A				100W
ECM100UD21	5V	0.0A - 12.0A	12.0A	+12V	0.0A / 3.0A		100W
ECM100UD22	5V	0.0A - 12.0A	12.0A	+15V	0.0A / 3.0A		100W
ECM100UT31	5V	0.5A - 10.0A	10.0A	+12V	0.0A / 3.0A	-12V 0.0A / 0.8A	100W
ECM100UT32	5V	0.5A - 10.0A	10.0A	+24V	0.0A / 2.0A	-12V 0.0A / 0.8A	100W
ECM100UT33	5V	0.5A - 10.0A	10.0A	+15V	0.0A / 3.0A	-15V 0.0A / 0.8A	100W
ECM100UT34	5V	0.5A - 10.0A	10.0A	+5V	0.0A / 5.0A	+12V 0.0A / 0.8A	100W
ECM100UT35	5V	0.5A - 10.5A	10.0A	+3.3V	0.0A / 5.0A	+12V 0.0A / 0.8A	100W
ECM100UT36	5V	0.5A - 10.0A	10.0A	+12V	0.0A / 3.0A	-5V 0.0A / 0.8A	100W
ECM100UT37	5V	0.5A - 10.0A	10.0A	+15V	0.0A / 3.0A	-5V 0.0A / 0.8A	100W
ECM100UQ41	5V	0.5A - 10.0A	10.0A	+3.3V	0.10A / 5.0A	+12V 0.0A / 0.8A	100W
ECM100UQ42	3.3V	0.5A - 10.0A	10.0A	+5V	0.10A / 5.0A	+12V 0.0A / 0.8A	100W
ECM100UQ43	5V	0.5A - 10.0A	10.0A	+24V	0.10A / 2.0A	+12V 0.0A / 0.8A	100W
ECM100UQ44	5V	0.5A - 10.0A	10.0A	+24V	0.10A / 2.0A	+15V 0.0A / 0.8A	100W
ECM100UQ45	5V	0.5A - 10.5A	10.0A	+12V	0.10A / 3.0A	-12V 0.0A / 0.8A	100W
ECM100UQ46	5V	0.5A - 10.5A	10.0A	+15V	0.10A / 3.0A	-15V 0.0A / 0.8A	100W

Notes:

- To receive unit with cover fitted, add suffix 'C' to model number. For Class 1 operation only.
- Available Q4 2005
- Maximum power with 5 CFM cooling is W (66W for 03 version). For maximum power with convection cooling, see derating curves.

ECM100



Input Connector J1	
Pin 1	Line
Pin 2	Neutral

J1 mates with Molex housing 09-50-3031 and Molex series 2878 crimp terminals. Optional ground (0.25 faston) tab available

Output Connector J2		
Pin	Single	Multi
1	+V1	+V1
2	+V1	+V1
3	+V1	+V1
4	+V1	+V1
5	V1 RTN	RTN
6	V1 RTN	RTN
7	V1 RTN	RTN
8	V1 RTN	RTN
9	N/C	+V2
10	N/C	+V2
11	N/C	±V3
12	N/C	V4

Derating Curves



Notes:

- All dimensions in inches (mm). Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25).
- Cable harness with 300mm wire available. For single output models, order Part No ECM100S LOOM. For multi-outputs, p/n ECM100DT LOOM order Part No. ECM40/60DT LOOM.
- Mating connector kit available. Order Part No. ECM100 CONKIT
- Covers available. Order Part No. ECM100 COVER - dimensions: 115 x 64 x 39mm.