ECM40-60

- 40 & 60 Watt Models
- Small Size 2.0”x 4.0”x 1.2”
- Low Leakage Current
- Industrial & Medical Approvals
- Full Load Available Convection Cooled
- Wide Operating Temperature 0 °C to +70 °C
- Level B Conducted Emissions
- EN61000 Compliant
- Universal AC Input 90–264 VAC
- Input Frequency 47–63 & 440 Hz
- Single & Multiple Outputs
- Cover Kits Available
- Mating Connector & Loom Kits Available

Approved for Class I and Class II applications, the ECM range of single and multiple output AC-DC, 40-60 W power supplies from XP feature the world's smallest footprint for units of these ratings. Both are just 2" x 4" (50.8 mm x 101.6 mm) and 1.2" (30.48 mm) high. Furthermore, these high-density power supplies meet EN55032 Level B conducted emissions with maximum leakage currents of 100 µA at 115 VAC or 200 µA at 230 VAC. As a result, these switchers are equally suitable for industrial, IT and medical applications, with no price premium for meeting medical requirements.

The ECM40-60 series have single output versions from 5 V to 48 VDC, adjustable by ±10%, and dual and triple output versions covering combinations of 3.3 V, 5 V, 12 V, 15 V and 24 V. They are dual-fused for compliance with IEC60601-1 and efficiency is 80-85%, depending upon the model, so minimal excess heat is generated.

The power supplies deliver full power between 0 °C and +50 °C and will operate at up to +70 °C with derating and only 5 CFM of cooling. Comprehensive overvoltage, overload and short circuit protection is built in. Covers, looms and connector kits are available.

Input Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	90		264	VAC	120-370 VDC
Input Frequency	47	50/60	63	Hz	400 Hz operation available
Input Current - No load			41	mA	230 VAC
Input Current - Full load			1.38	A	90 VAC
Inrush Current			40	A	Cold start at 230 VAC
Power Factor		0.62			230 VAC
Earth Leakage Current			290	µA	264 VAC
Input Protection					T3.15 A/ 250 V internal fuse in line & neutral

All specifications are at nominal input, full resistance load at 25°C unless otherwise stated.

Output Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5.0		48.0	VDC	See modules table
Initial Set Accuracy			V^1: ±1, V^2 & V^3: ±5	%	
Output Voltage Trim	±10			%	V^1 (V^2 will track V^1 by the same %)
Minimum load	V^1: 0.5, V^2: 0.1			A	Not required on single output models
Start Up Delay			1.5	s	90 VAC
Start Up Rise Time			10	ms	
Hold Up Time	16		75	ms	115-230 VAC input
Drift			±0.2	%	
Line Regulation			±0.5	%	90-264 VAC
Load Regulation			±1.0	%	Single output
			V^1: ±3, V^2 & V^3: ±5	%	Dual output
Transient Response			4	%	Output voltage recovers to within 1% in less than 500 µs for 50% load change.
Ripple & Noise			1	%pk-pk	20 MHz bandwidth
Overvoltage Protection	115		135	VDC	Recycle input to reset
Overload Protection	110		170	% Imax	Auto-recovery
Short Circuit Protection					Trip & restart (hiccup mode)
Temperature Coefficient			0.05	%/ºC	

General Specifications

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	70			% (at 230 VAC full load)	3.3 & 5 V single output versions
	80				All other single output versions
	75				Dual output versions
Isolation Voltage		4000		VAC	Input to output
		1500			Input to ground
		500			Output to ground
Switching Frequency		70		kHz	Fixed
Power Density			6.25	W/In^3	For 60 W version
Weight		0.33 (150)		lbs (g)	
MTBF		600		kHrs	Mil HDBK 217F