MPE-600CM

600W, Single Output, Compact, Enclosed AC/DC Power Supplies

Key Features:

- 600W Output Power
- 85-277 VAC Input
- 4,000 VAC Isolation
- Efficiency to 94%
- -40°C to +70°C Temp
- Meets EN 55032 B
- >300 kHour MBTF
- Remote On/Off

Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions		Min.	Typ.	Max.	Units
Input Voltage Range		AC Input	85		277	VAC
		DC Input	100		390	VDC
Input Frequency			47		63	Hz
Input Current	See Model Selection Guide					
Inrush Current (Cold Start)					15	A
Power Factor	Full Load	115 VAC		0.99		--
		230 VAC		0.99		
Leakage Current		240 VAC / 50Hz			0.1	mA

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load	5V Standby		±2		%
		Other Outputs		±1		
Line Regulation	Rated Load	5V Standby		±0.5		%
		Other Outputs		±0.3		
Load Regulation	0-100% Load	5V Standby		±2		%
		Other Outputs		±0.5		
Ripple & Noise (20 MHz)		12/15V Outputs		150		mV P - P
		Other Outputs		200		
Hold-Up Time		230 VAC	15			ms
Standby Output	See Note 9		5V/1A			
Standby Power Consumption	Room temp., 230VAC, RC+/RC- add +5V signal			0.5		W
Remote Sense Compensation				500		mV
Temperature Derating	+50°C to +70°C		2.5			%/°C
Input Voltage Derating	80 - 85 VAC		2.0			%/VAC
	85 - 100 VAC		1.33			
Over Temperature Protection			Output voltage turn off, self-recover			
Over Current Protection	Output turned off after working 1s, self-recover		110		250	%Io
Short Circuit Protection	Recover 10s after short circuit		Continuous, Self-Recovery			

General

Parameter	Conditions		Min.	Typ.	Max.	Units
Isolation Voltage	See Note 4	Input - Ground	1,500			VAC
		Input - Output	4,000			
		Output - Ground	1,500			
Isolation Resistance	See Note 8		50			MΩ
Isolation Level	Input - Output		2 x MOPP			
	Output - Ground		1 x MOPP			

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operaring Temperature		-40		+70	°C
Storage Temperature		-40		+85	°C
Cooling	Forced Air Convection (See Derating Curves)				
Operating Humidity	Non-Condensing	20		95	%RH
Storage Humidity		10		95	

Physical

Case Material	Metal (AL1100, SGCC)
Size	4.00 x 8.00 x 1.60 in. (See Mechanical Drawing on Page 5)
Weight	33.51 oz (950g) (See Mechanical Drawing on Page 5)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHour
Safety Standards	UL/cUL 62368-1 Recognition (UL Certificate)				
Safety Class	Class I				

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MICROPOWER DIRECT

Model Selection Guide

Model Number	Input		Output				Over Voltage Protection (VDC) See Note 5	Output Capacitive Load (μF Max)	Efficiency (%, Typ)
	Current (A)		Voltage (VDC)	Voltage Adj. Range (VDC)	Current (A, Max)	Power (W)			
	115 VAC	230 VAC							
MPE-600CM-12	7.5	3.5	12	11.8 - 12.6	50	600	16	50000	92
MPE-600CM-15	7.5	3.5	15	14.7 - 15.8	40	600	20	50000	92
MPE-600CM-24	7.5	3.5	24	23.5 - 25.2	25	600	32	50000	94
MPE-600CM-27	7.5	3.5	27	26.4 - 28.5	22.3	600	35	50000	94
MPE-600CM-36	7.5	3.5	36	35.3 - 37.8	16.7	600	47	50000	94
MPE-600CM-48	7.5	3.5	48	47.0 - 50.4	12.6	600	60	50000	94

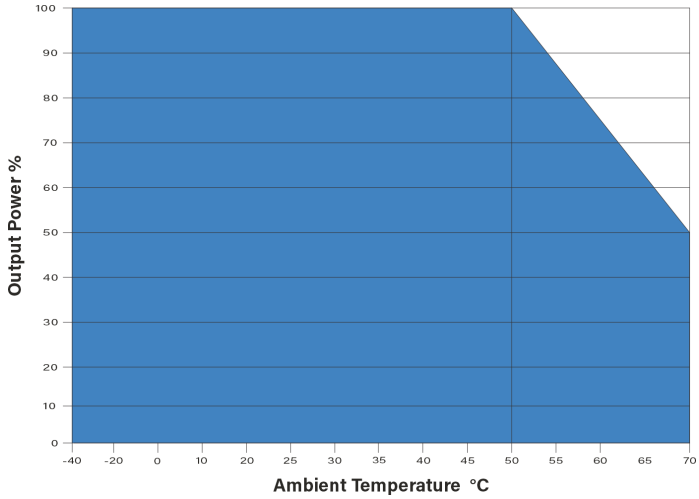
Notes:

1. The "tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
3. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically 10 seconds after the fault condition is removed.
4. Input-output isolation is tested for 60 seconds with a leakage current of <10 mA.
5. A temperature derating of 5°C/1000m is required for operating altitude greater than 2000m.
6. The output voltage can be adjusted by the ADJ knob. Turn clockwise to increase and counterclockwise to decrease.
7. Caution: double pole, neutral fusing. Disconnect mains before servicing.
8. Isolation resistance is given for input - output, input - ground and output - ground. It is tested at 500VDC, temperature 25 ± 5°C, relative humidity <95%RH, non-condensing.
9. Standby power provides 5V/1A independent output. It is recommended to use with the main circuit.
10. Under any conditions, the total power and output current should not exceed the rated specifications.

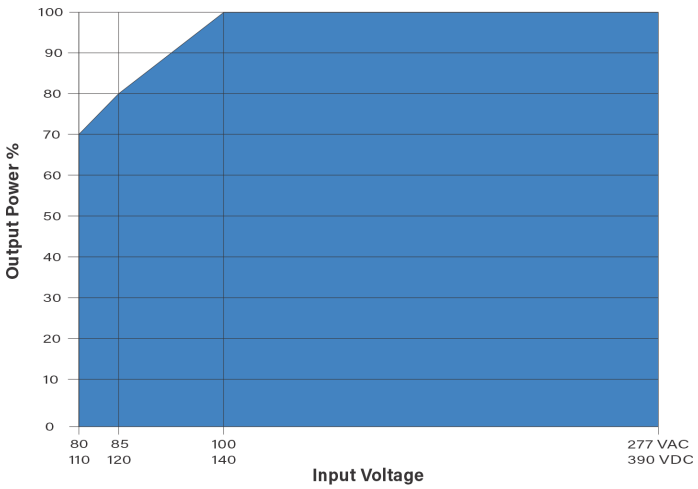
EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		B
Conducted Emissions (CE)	CISPR32/EN55032		B
Harmonic Current	IEC/EN61000-3-2		A/D
Voltage Flicker	IEC/EN61000-3-3		
ESD	IEC/EN61000-4-2	A	Contact ±8kV/Air ±15KV
RS	IEC/EN61000-4-3	A	10V/m
EFT	IEC/EN61000-4-4	A	±4KV
Surge	IEC/EN61000-4-5	A	line to line ±2KV/line to ground ±4KV
CS	IEC/EN61000-4-6	A	10 Vr.m.s
Voltage Dips, Short, Interruption	IEC/EN61000-4-11	B	0%, 70%

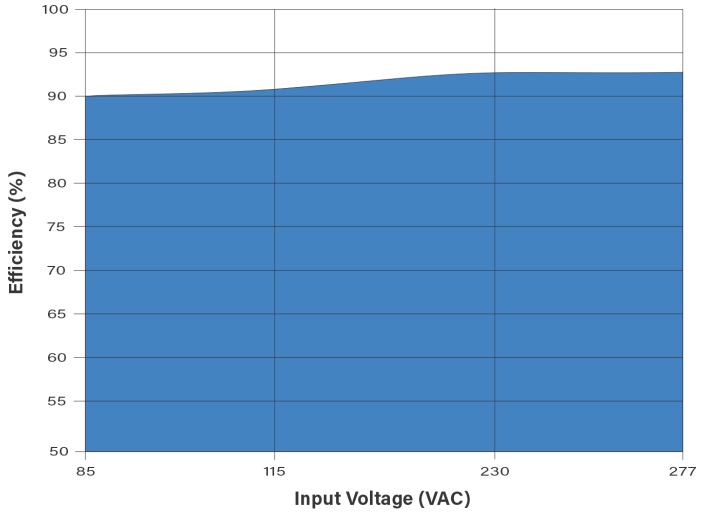
Temperature Derating



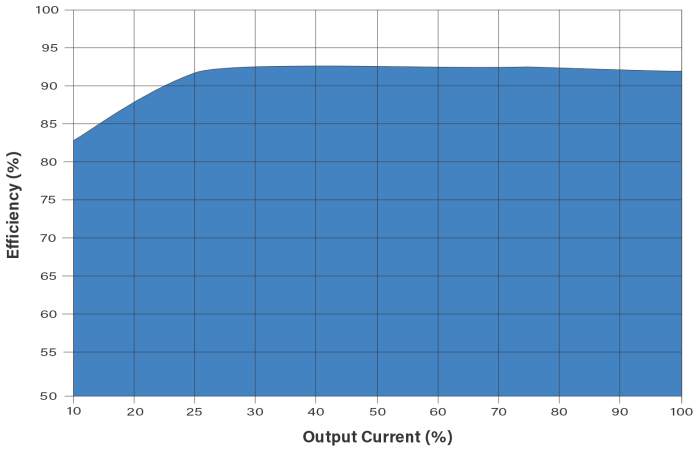
Input Voltage Derating



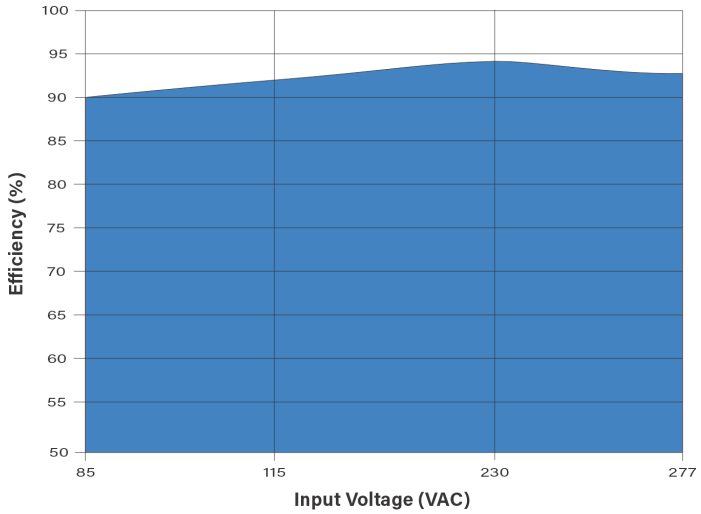
Efficiency vs Input Voltage: 12V (Full Load)



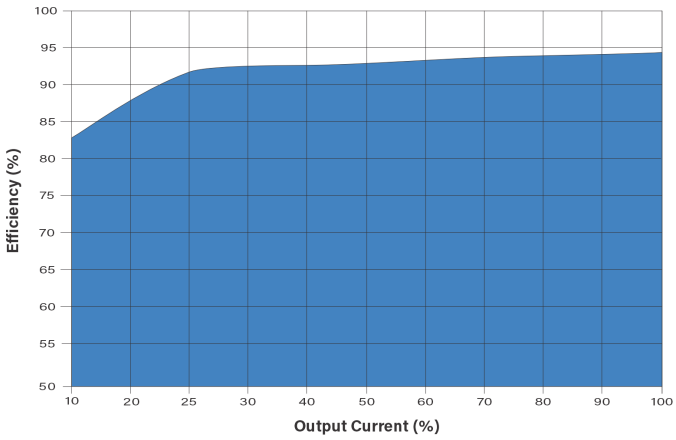
Efficiency vs Output Load: 12V (230VAC)



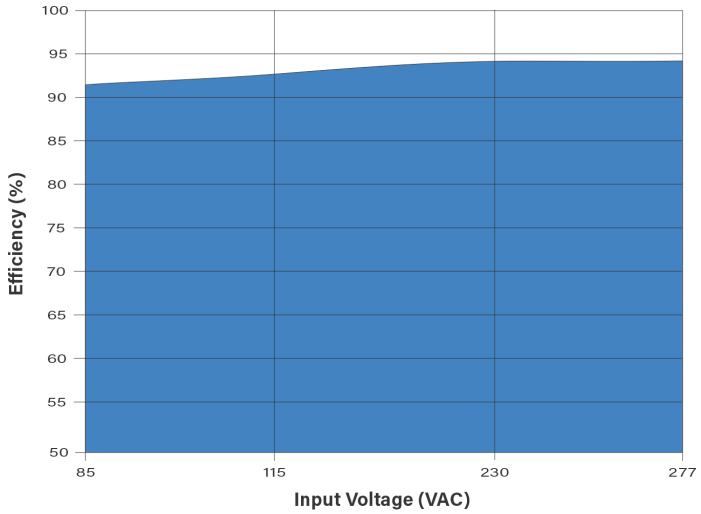
Efficiency vs Input Voltage: 24V (Full Load)



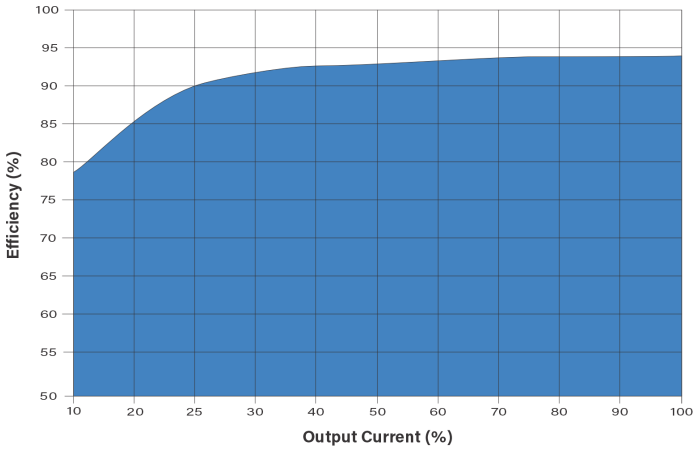
Efficiency vs Output Load: 24V (230VAC)



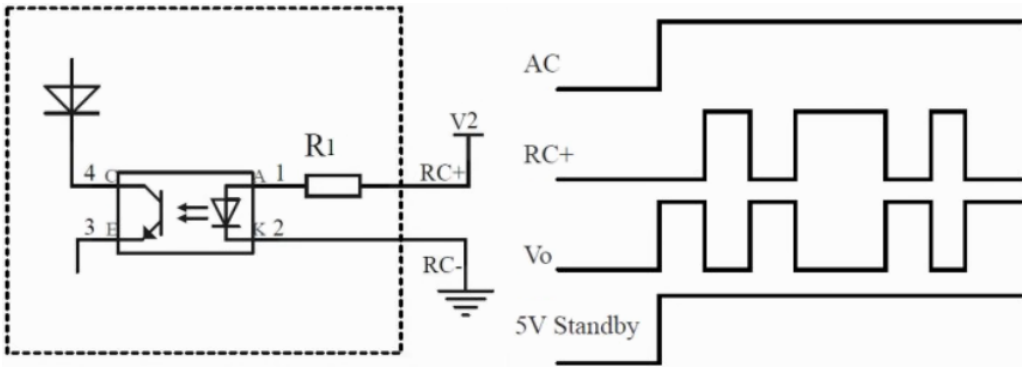
Efficiency vs Input Voltage: 48V (Full Load)



Efficiency vs Output Load: 48V (230VAC)



Remote ON/OFF

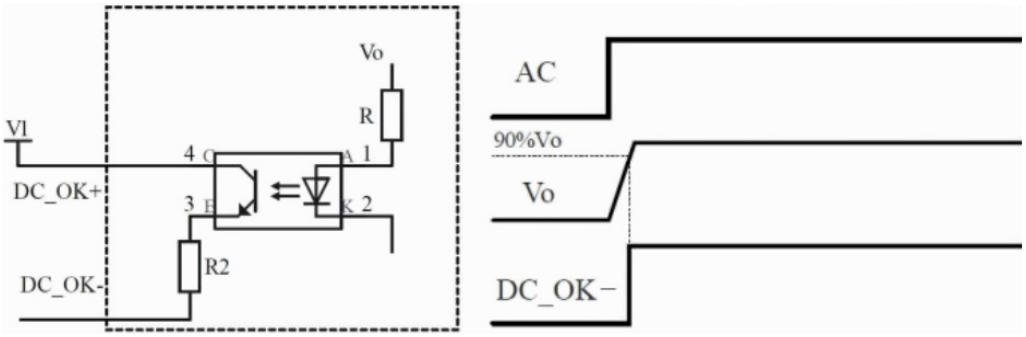


R1 (Product Inside)	2KΩ, 0.083W
V2 (User Side)	5 - 15V

Notes:

1. When the product is working normally, apply voltages (5 - 15V) to RC+ and RC- to trigger the remote ON/OFF function, and the output voltage will be off. Withdraw the voltage to reestablish the output voltage.
2. 5V standby power supply is not controlled by the remote ON/OFF function.

DC OK

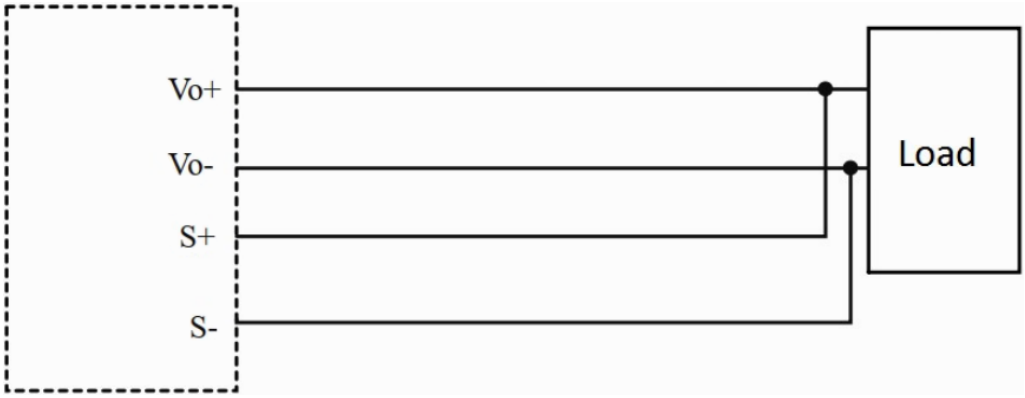


R1 (Product Inside)	2KΩ, 0.083W
V2 (User Side)	5 - 15V

Notes:

1. When the output voltage of the product reaches 90% of the rated value, DC OK+ will be connected to DC OK-.
2. It is recommended that users apply a certain voltage between DC OK+ and DC OK- to detect the signal.

Remote Sense Compensation

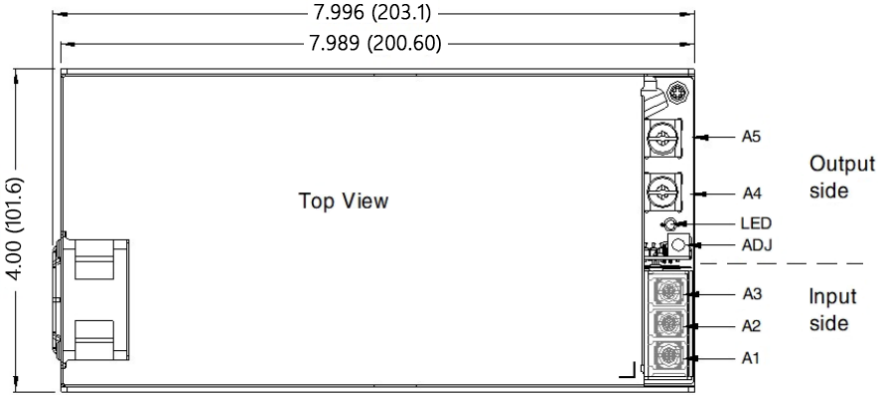


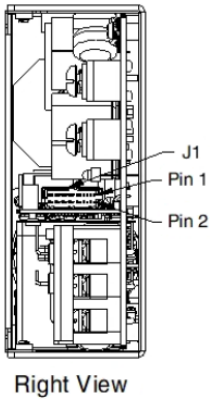
Notes:

1. The left side represents the internal schematic diagram of the product. The right side represents the customer system.
2. Twisted pair wires are needed for S+/S-.
3. If the Pin 14 terminal function is used for long-term matching, please use glue to secure it.

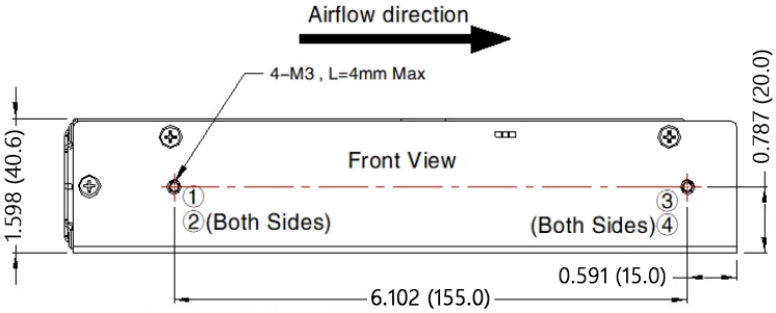
Mechanical Diagrams

THIRD ANGLE PROJECTION



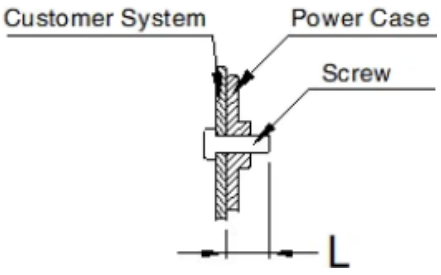


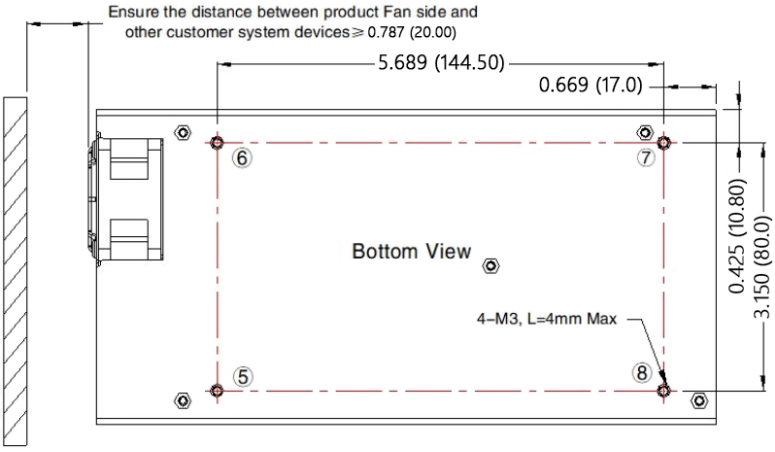
Pin-Out	
Pin	**Function**
A1	PE
A2	AC(L)
A3	AC(N)
A4	+Vo
A5	+Vo



Position	Screw	L (Max)	Torque (Max)
1 - 8	M3	4mm	0.4N ▪ m

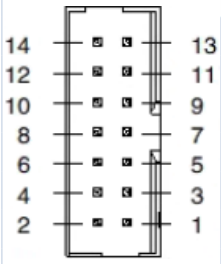
1 - 8 any position must be connected to earth





Notes:
- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- Input connector wire range: 22-14AWG
- Input connector tightening torque: M4, 1.2N ▪ m (max)
- Output connector (+Vo/-Vo) tightening torque: M5, 2.4N ▪ m (max)
- General tolerances: ±0.039 (±1.00)

Weight:
- 33.51 oz (950g)

Fig.	Output Connector J1				
	Pin	**Function**	**Pin**	**Function**	**Customer Connector**
	1	-S	2	+S	MOLEX P/N: 51110 - 1450 (without locking ramp) or 51110 - 1451 (with locking ramp) or equivalent
	3	NC	4	NC	
	5	DC OK -	6	DC OK+	
	7	+5VSB	8	5VSB RTN	
	9	RC+	10	RC-	
	11	+5VSB	12	+5VSB	
	13	5VSB RTN	14	5VSB RTN	