



# TEST REPORT

MODEL NAME : UPF180S12MH

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## 1. DESIGN VERIFY TEST

### 1-1. INPUT FUNCTION TEST

TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
VOLTAGE RANGE	90~305VAC	I/P: testing O/P:full load Ta:25 °C	test ok	P
FREQUENCY RANGE	47~63Hz no damage osc	I/P:90~305VAC O/P:full~min. load Ta:25 °C	test ok	P
POWER FACTOR	0.9 min.	I/P:115VAC I/P:230VAC O/P:full load	PF=0.99/115VAC PF=0.97/230VAC	P
EFFICIENCY	89% typ.	I/P:230VAC O/P:full load Ta:25 °C	89.5%	P
AC CURRENT	1.85A/115VAC typ. 0.9A/230VAC typ.	I/P:115VAC I/P:230VAC O/P:full load Ta:25 °C	1.8A/115VAC 0.88A/230VAC	P
INRUSH CURRENT	60A typ. cold start	I/P:230VAC O/P:full load Ta:25 °C	50A	P
LEAKAGE CURRENT	2.5mA max.	I/P:230VAC O/P:min. load Ta:25 °C	1mA	P

### 1-2. OUTPUT FUNCTION TEST

TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
VOLTAGE Tolerance	12V±3%	I/P:230VAC O/P:CV mode Ta:25 °C No variable resistance	test ok	P
RIPPLE&NOISE	150mVp-p max.	I/P:230VAC O/P:full load Ta:25 °C	70mV p.p	P
LINE REGULATION	12V±1%	I/P:90~305VAC O/P:full load Ta:25 °C	±0.1%	

<b>LOAD REGULATION</b>	12V±2%	I/P:230VAC O/P:full load Ta:25 °C	±1.1%	
<b>SETUP TIME</b>	3000ms/115VAC max. 3000ms/230VAC max.	I/P:115VAC I/P:230VAC O/P:full load Ta:25 °C	770ms/115VAC 400ms/230VAC	<b>P</b>
<b>RISE TIME</b>	100ms/115VAC max. 100ms/230VAC max.	I/P:115VAC I/P:230VAC O/P:full load Ta:25	42ms/115VAC 40ms/230VAC	<b>P</b>
<b>HOLD UP TIME</b>	20ms/115VAC typ. 20ms/230VAC typ.	I/P:115VAC I/P:230VAC O/P:full load Ta:25	22ms/115VAC 23ms/230VAC	<b>P</b>

## 1-3. PROTECTION FUNCTION TEST

TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
<b>SHORT PROTECTION</b>	short every output 1 hour no damage	I/P:305VAC O/P:full load Ta:25 °C	no damage, recovers automatically after fault removed	<b>P</b>
<b>OVER LOAD PROTECTION</b>	110% min	I/P:230VAC O/P:testing Ta:25 °C	115%/115VAC 115%/230VAC recovers automatically after fault removed	<b>P</b>
<b>OVER VOLTAGE PROTECTION</b>	115~140%	I/P:115VAC I/P:230VAC O/P:min. load Ta:25 °C	118%/115VAC 118%/230VAC recovers automatically after fault removed	<b>P</b>
<b>OVER TEMP. PROTECTION</b>	temp. sensor: 110±10 °C damage	no I/P:230VAC O/P:full load	O.T.P active, automatically after fault removed	<b>P</b>

## 2. SAFETY & EMC TEST

TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC/1min<10mA I/P-F/G:2KVAC/1min<10mA O/P-F/G:1.5KVAC/1min<10mA	I/P-O/P:3.75KVAC/1min I/P-F/G:2KVAC/1min O/P-F/G:1.5KVAC/1min Ta:25℃	I/P-O/P:3.8mA I/P-F/G:2.9mA O/P-F/G:2.4mA no damage	P
ISOLATION RESISTANCE	I/O-O/P:500VDC>100MΩ I/O-F/G:500VDC>100MΩ O/P-F/G:500VDC>100MΩ	I/P-O/P:500VDC I/P-F/G:500VDC O/P-F/G:500VDC Ta:25℃	I/P-O/P: ∞ I/P-F/G: ∞ O/P-F/G: ∞ no damage	P
SURGE	IEC61000-4-5 industry L-N:2KV L,N-PE:4KV	I/P:230VAC/50Hz O/P:full load Ta:25℃	criteria A	P

### 3. RELIABILITY TEST

TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
LOW TEMP. TURN ON TEST	turn on after 2hour	I/P:230VAC O/P:full load Ta:-40℃	test ok	P
STORAGE TEMP. TEST	no damage	1.thermal shock temp.: -40~+80℃ 2.test time low & high temp.:30min/each 3.total cycle:5cycle 4.input/output condition:static	test ok	P
HIGH VOLT. HIGH TEMP. HIGH HUMI. TEST	no damage after 12hour	I/P:305VAC O/P:full load Ta:70℃ HUMI.:95%RH	test ok	P
THERMAL SHOCK TEST	no damage	1.thermal shock temp.: -40~+70℃ 2.test time low & high temp.:30min/each 3.total cycle:10cycle 4.input/output condition: 230VAC full load, AC on/off test (turn on 58sec,turn off 2sec)	test ok	P

# Test Report : UPF180S12MH

VIBRATION TEST	no damage	1.CATON&1SET 1.wave form:sine wave 2.frequency:10~500Hz 3.sweep time:12min./sweep cycle 4.acceleration:5G 5.test time:72min. in each(X,Y,Z) 6.Ta:25℃	test ok	P
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