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Certificate No.: EM/2001/50127

CERTIFICATE OF EMC COMPLIANCE

Model No: UP-7000
Product Name: BOOSTER PUMP OR DIAPHRAGM PUMP
Applicant: PURICOM WATER INDUSTRIAL CORPORATION
Address of Applicant: No. 3-5, Ching-Nan Lane, Shui-Ching Li, Pei Tun District, Taichung City,
Taiwan, R.O.C.
Test Report Number(s): EM/2001/50127
Date of Receipt: 31 MAY 2001
Date of Test(s): 01 JUNE 2001
Date of Issue: 04 JUNE 2001
Test(s) Required: EN55014-1 (1993), EN61000-3-2 (2000), EN61000-3-3 (2000)

Conclusion

The apparatus meets the requirements of the above standards and hence fulfills the requirements of EMC Directive 89/336/EEC as amended by Directives 92/31/EEC and 93/68/EEC within CE marking requirement.

*This certificate is only valid for the equipment and configuration described, and in conjunction with the test report as detailed above.

Authorized Signatory:

SGS TAIWAN LTD.
Jason Lin

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**EMC
TEST REPORT**

Test Report No. : EM/2001/50127

Applicant : PURICOM WATER INDUSTRIAL CORPORATION

Equipment Under Test (EUT) :

Name : BOOSTER PUMP OR DIAPHRAGM PUMP

Model No. : UP-7000

Standard : EN55014-1 (1993), EN61000-3-2 (2000), EN61000-3-3 (2000)

Date of Receipt : 31 MAY 2001

Date of Test : 01 JUNE 2001

Date of Issue : 04 JUNE 2001

Test Result :

PASS

In the configuration tested, the EUT complied with the standards specified above.

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS EMC Services or testing done by SGS EMC Services in connection with distribution or use of the product described in this report must be approved by SGS EMC Services in writing.

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1. General Information

1.1 Client Information

Applicant : PURICOM WATER INDUSTRIAL CORPORATION
Address of Applicant : NO. 3-5, CHING-NAN LANE, SHUI-CHING LI, PEI TUN
DISTRICT, TAICHUNG CITY, TAIWAN, R.O.C.

1.2 General Description of EUT

Name of E.U.T. : BOOSTER PUMP OR DIAPHRAGM PUMP
The EUT is a pump. Its power rating is using adaptor AC 230 V,
50 Hz to DC 24 V, 25 VA.

1.3 Details of EUT

Power Supply : 230 V, 50 Hz
Power Cord : Nonshielded

1.4 Description of Support Units

The EUT has been tested as an independent unit.

1.5 Standards Applicable for Testing

Table of tests to be carried out under EN55014-1 : 1993.

Test Items	Status
Conducted Emission	<input checked="" type="checkbox"/>
Radiated Power	<input checked="" type="checkbox"/>
Discontinuous	<input type="checkbox"/>

Indicates that the test is not applicable

Indicates that the test is applicable

1.6 Deviation from test Standards

The discontinuous test was not carried out because the EUT only contains a switch for the purpose of mains connection or disconnection only. See subclause 4.2.3.3 of EN55014-1 : 1993.



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Radio Disturbance
EN55014-1 : 1993

2.1 Test Results

EN55014-1	Result
Conducted Emission	PASS
Radiated Power	PASS

2.2 Frequency Range

Conducted Emission : 150 kHz - 30 MHz
Radiated Power : 30 MHz - 300 MHz

2.3 Methods and Procedures

Standard	Date	Description
EN55014-1	1993	Limits and methods of measurement of radio disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes, electric tools and similar electric apparatus.

2.4. Test of Conducted Emission

2.4.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
EMI Test Receiver	ESCS 30	828985/004	Jan. 22, 2001
Coaxial Cables	No. 3, 4	-	N/A
Rolf-Heine L.I.S.N	NNB-2/16Z	99012	JAN. 25, 2001

2.4.2 Test Site

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2.4.3 Operation of EUT

Input voltage : 230 V, 50 Hz

Operating Environment :

Temperature : 25 degree C

Humidity : 70 % RH

Atmospheric Pressure : 795 mBar

Operating the EUT :

To power on and the EUT was tested in normal operating.

2.4.4 Measurement Data

6 dB Bandwidth : 10 kHz

Line : L

Freq. [MHz]	L Level [dB (uV)]		Limit [dB (uV)]		Margin [dB (uV)]	
	QP	AV	QP	AV	QP	AV
0.16	42.1	34.3	65.46	58.30	-23.36	-
0.24	41.3	33.2	62.10	53.93	-20.80	-
0.52	37.2	31.1	56.00	46.00	-18.80	-
0.71	28.4	20.3	56.00	46.00	-27.60	-
2.15	21.7	14.1	56.00	46.00	-34.30	-
11.31	23.5	15.8	60.00	50.00	-36.50	-

Remarks: 1. QP and AV are abbreviations of quasi-peak and average respectively
2. The measurements are the worst case.

6 dB Bandwidth : 10 kHz

Line : N

Freq. [MHz]	N Level [dB (uV)]		Limit [dB (uV)]		Margin [dB (uV)]	
	QP	AV	QP	AV	QP	AV
0.16	40.2	32.3	65.46	58.30	-25.26	-
0.24	41.1	33.1	62.10	53.93	-21.00	-
0.52	38.2	30.3	56.00	46.00	-17.80	-
0.71	29.2	20.7	56.00	46.00	-26.80	-
2.15	21.4	14.8	56.00	46.00	-34.60	-
11.31	23.3	15.2	60.00	50.00	-36.70	-

Remarks: 1. QP and AV are abbreviations of quasi-peak and average respectively
2. The measurements are the worst case.

2.5 Test of Radiated Power

2.5.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
HP EMC Analyzer	8594EM	3624A00203	Oct. 15, 2000
FCC Absorbing Clamp	F-201	294	Jan. 11, 2001
Coaxial Cables	No. 1, 2	-	N/A

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2.5.2 Test Site
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2.5.3 Operation of EUT

Input voltage : 230 V, 50 Hz

Operating Environment :

Temperature : 25 degree C Humidity : 75 % RH

Atmospheric Pressure : 974 mBar

Operating the EUT :

To power on and the EUT was tested in normal operating.

2.5.4 Measurement Data

There were no EUT Quasi-Peak emissions within 10 dBuV of average limit in the shielded room.

2.6 Photographs

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Harmonics

EN61000-3-2 : 2000

3.1 Test Results

EN61000-3-2 : 2000	PASS
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3.2 Methods and Procedures

Standard	Date	Description
EN61000-3-2	2000	Disturbances in supply systems caused by household appliances and similar electrical equipment.

3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
CHROMA ATE Power Analyzer	6630	000110	Dec. 03, 2000
CHROMA ATE Programmable AC Power Source	6530	0159	June 21, 2000

3.4 Test Site

SGS Taiwan LTD.

3.5 Operation of EUT

Input voltage : 230 V, 50 Hz

Operating Environment :

Temperature : 25 degree C

Humidity : 70 % RH

Atmospheric Pressure : 795 mBar

Operating the EUT :

To power on and the EUT was tested in normal operating.

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3.6 Measurement Data

V : 230.62 V

Power Factor : 8.35 W

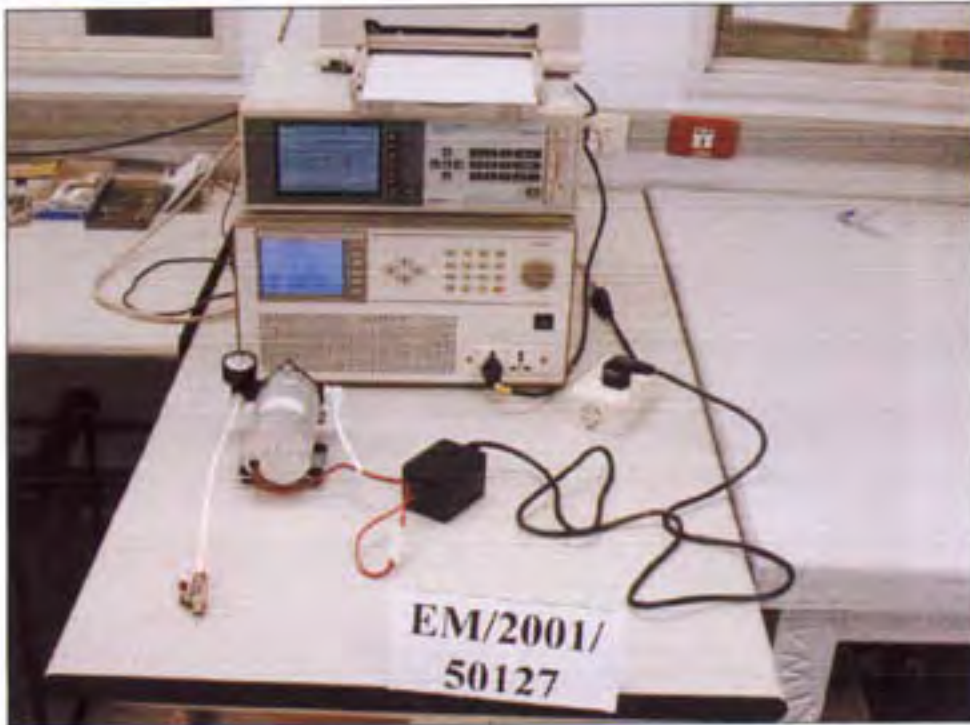
Harm. Order	mA	Limit mA
1	41.58	-
3	20.26	-
5	16.59	-
7	7.56	770.00
9	2.57	400.00
11	1.43	330.00
13	1.62	210.00
15	0.87	150.00
17	0.58	132.35
19	0.68	118.42
21	0.45	107.14
23	0.34	97.83
25	0.37	90.00
27	0.27	83.33
29	0.22	77.59
31	0.23	72.58
33	0.18	68.18
35	0.15	64.29
37	0.15	60.81
39	0.13	57.69

RMS I : 49.91 mA

Freq : 50 Hz

Harm. Order	mA	Limit mA
2	1.07	-
4	0.18	430.00
6	0.11	300.00
8	0.09	230.00
10	0.06	184.00
12	0.02	153.33
14	0.01	131.43
16	0.00	115.00
18	0.02	102.22
20	0.01	92.00
22	0.02	83.64
24	0.01	76.67
26	0.00	70.77
28	0.01	65.71
30	0.01	61.33
32	0.01	57.50
34	0.01	54.12
36	0.01	51.11
38	0.00	48.42
40	0.00	46.00

3.7 Photographs





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Flicker
EN61000-3-3 : 2000

4.1 Test Results

EN61000-3-3 : 2000	PASS
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4.2 Methods and Procedures

Standard	Date	Description
EN61000-3-3	2000	Disturbances in supply systems caused by household appliances and similar electrical equipment.

4.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
CHROMA ATE Power Analyzer	6630	000110	Dec. 03, 2000
CHROMA ATE Programmable AC Power Source	6530	0159	June 21, 2000

4.4 Test Site

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4.5 Operation of EUT

Input voltage : 230 V, 50 Hz

Operating Environment :

Temperature : 25 degree C

Humidity : 70 % RH

Atmospheric Pressure : 795 mBar

Operating the EUT :

To power on and the EUT was tested in normal operating.



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4.6 Measurement Data

Type of observation period : 120 minutes

Volt : 230.6 V

I : 47.75 mA

Freq : 49.999 Hz

PF : 0.720

Test Parameter	Measurement Value	Limit	Remark
Pst	Note 1	1.0	PASS
Plt	Note 1	0.65	PASS
Tdt (ms)	Note 1	200	PASS
dmax (%)	Note 1	4%	PASS
dc (%)	Note 1	3%	PASS

Note 1 : The parameter is too small to measure.

Note :

The full description of the Test Parameters is as below :

Pst : short-term flicker indicator.

Plt : long-term flicker indicator.

Tdt : maximum time that dt exceeds 3%

dmax : maximum relative voltage change.

4.7 Photographs

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