

File E151204
Project 98ME61326

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REPORT

on

COMPONENT - MOTOR OPERATED WATER PUMPS

ULKA COSTRUZIONI ELETTROMECCANICHE SRL
Pavia, Italy

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DESCRIPTION

PRODUCT COVERED:

USR, CNR: Component (Not For General Use) - Water Oscillating Pumps, Model NME, Types 1, 1C, 1S, 2, 2S, 3, 3S, 4, 5.

Model NMEHP, Types 1, 2, 3 and 4.

Model NMECC

ELECTRICAL RATINGS:

Model	Volt	Hz	W
NME, Types 1, 1C, 1S, 2, 3, 3S, 4	120 ac	60	16
NME, type 5	120	60	11
*NME, type 2S	120	60	12
NMEK	120	60	13
NMEHP, Types 1, 2, 3, 4	120 ac	60	17
NMECC	25 dc	(+)	27

(+) See condition of acceptability No 7.

TECHNICAL CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

General - The products covered by this Report are one-way solenoid type oscillating pumps. The oscillating action of the pump piston is accomplished by using the pumps inherent diode and half-wave rectifying the supply voltage in the end product.

The UL Standard used for the investigation of the pumps was UL778, 4th Edition Dated December 2002, revised February 1, 2006.

The Canadian Standard used for the investigation of the pumps was CAN/CSA-C22.2 No. 108-01, Published July 2001 .

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - In determining the acceptability of these pumps, the following shall be determined in the end-use application:

1. The pump and quick connect terminals must be provided with a suitable enclosure in accordance with the requirements of the end-use Standard.
2. The quick connect terminals are not suitable for field wiring purposes.
3. These pumps were tested for continuous operation only. The pump model NMECC was tested with a duty cycle 5 seconds ON and 15 seconds OFF.

4. The suitability of the pump for control of a water source greater than atmospheric pressure, or at a water temperature greater than 25° must be evaluated in the end product for model NME and model **NMECC**. The suitability of the pump for control of a water source greater than atmospheric pressure, a water temperature greater than 35° and ambient temperature greater than 25°C must be evaluated in the end product for model NMEHP. **The suitability of the pump for a water temperature greater than 25° and ambient temperature greater than 25°C must be evaluated in the end product for model NMEK.**

5. Temperatures of the coil windings are to be monitored in the end product by the change-of-resistance method, and are not to exceed the limits for the insulation class, as follows:

Model Series	Class	Max Coil Winding Temperature, °C
NME, NMEHP, NMECC, NMEK	C1.F	155°C

6. The suitability of the permanence of marking shall be determined in the end product.
7. The pump model NMECC was tested with a supply voltage of 28VDC. The wave had a duty cycle 15ms ON (25VDC) and 20 ms OFF (0VDC). The use of other type of supply wave or voltage should be determined on end use application.

CONSTRUCTION DETAILS:

General - For details of construction, reference should be made to the following photographs and their accompanying descriptions. The general design, shape, and arrangement shall be as depicted unless otherwise specified.

Dimensions - All dimensions are approx unless designated as max or min.

Corrosion Protection - All ferrous metal parts of the frame and enclosure are suitably protected against corrosion by plating, painting, or the equivalent.

Spacings - A min spacing of 6.4 mm shall be maintained over surfaces of insulating materials. A min spacing of 2.4 mm shall be maintained through air between uninsulated live parts of opposite polarity on the coil and between uninsulated live parts and dead-metal parts.

Mechanical Assembly - All electrical components are rigidly secured by screws, bolts, rivets, or a combination of bolts and lockwashers, so as to prevent rotation about their mounting axis. All metal edges are free from burrs and sharpness.

Markings - Recognized company's name and model and type number.

The following markings are optional: Electrical ratings, duty cycle (continuous operation), date code, the statement "Water Only Max 25°C" or the equivalent for Models NME and NMECC and "Water Only Max 35°C" for Model NMEHP.

Manufacturing Date Code - Consists of six digits, first two representing day, second two representing month and the last two representing year. Example: 02 06 98 = 2nd June 1998.

MODEL DIFFERENCES:

The pumps are identical except for performance capability.

Model Series NME: See below

Types	Performance
1	200 ccm/min, 2.5 bar max
1C	220 ccm/min, 2.0 bar max
1S	180 ccm/min, 3.2 bar max
2	110 ccm/min, 2.5 bar max
3	90 ccm/min, 2.5 bar max
3S	85 ccm/min, 3.2 bar max
4	50 ccm/min, 2.5 bar max
5	30 ccm/min, 1.2 bar max
2S	110 ccm/min, 3.2 bar max
NMEK	180 ccm/min, 5 bar max

LOCATION

(867811-001) 570417 (Party Site)
CEME S.p.A. a Socio Unico
Via dell'Industria, 5
27020 Trivolzio PV ITALY
Factory ID: T
UL Contracting Party for above site is: UL GmbH

(100533-359) 575887 (Party Site)
CEME ZHONGSHAN CO LTD
INDUSTRIAL RD 38
XIAOLAN TOWN
ZHONGSHAN
GUANGDONG 528415 CHINA
Factory ID: C
UL Contracting Party for above site is: UL GmbH