

OSM/IN DECISION

Standard: EN 61058-1:2002 + A2:2008	Sub clause: 7 – 8 – 17	Sheet N°: OSM/IN 242A
Subject: Rotary switches for “cooking range” (Classification and endurance test specifications)	Key words: - cooking range switch - multiple poles	Meeting N°: 20 (2010) Item: 5.1.2

Question: Rotary switch to be used in “cooking range”. Sample on attached photos, incorporates 10 contacts/poles, which are not switched on/off at the same time.

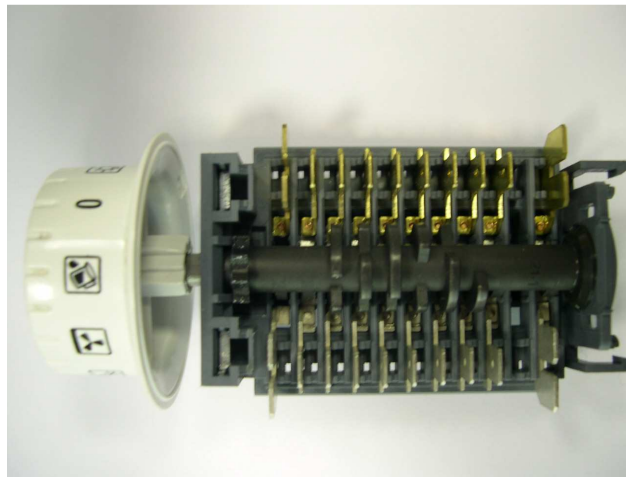


PHOTO 1

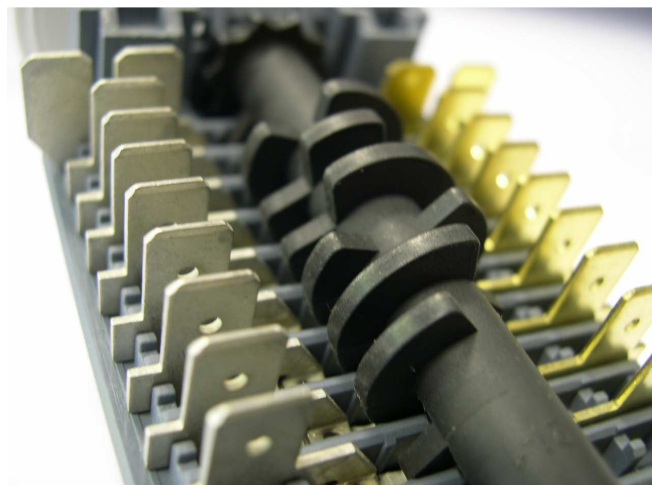


PHOTO 2

To be continued

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Question: During one 360° rotation of rotary switch (switch can rotate > 360°) some poles make only 1 (cycle) switching operation (switch on/off) while some poles make 3 (cycles) switching operations (switch on/off).

NOTE 1): “cycle” is defined as one 360° rotation.

<p>3.4.10 operation transfer of the moving contact(s) from one position to an adjacent position</p> <p>3.4.11 operating cycle succession of operations from one position to another and back to the first position through all other positions, if any [IEV 441-16-02]</p>
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NOTE 2): Operating cycles for

1) Rotary switches with limit position:

From „0“position over all „On“ positions to the end position and back to the „0“ position.

2) Rotary switches without a limit position:

From „0“position over all „On“ positions to the „0“ position. No turn backwards.

Explanation:

With limit position: 1 Cycle 0-1-2-3-2-1-0

Without limit position: 1 Cycle 0-1-2-3-0

- 1) How should this switch be classified according to Table 2 of EN 61058-1:2002?
- 2) Is it possible to declare different current rating for different poles? (how afterwards with the rating markings?)
- 3) Can endurance test be performed separately on each pole/contact (due to different make/break operation of different poles during one turn of the knob)?
- 4) To avoid confusion with definition of “operating cycle” in sub-clause 3.4.11 of EN 61058-1:2002, the question in this case is: is the operating cycle one 360° turn of the knob or one switching operation of the contact (switch on and off)?

To be continued

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<p>Decision:</p> <ol style="list-style-type: none"> 1) Table 2 gives examples of classification of type of connection. The switch can be classified as special design and the details shall be provided in the test report. 2) Yes, the manufacturer shall provide the circuit diagram (marking/documentation according to table 3, item 4.9). 3) Yes in principle, but taking into account opposite phase and multi phase circuits. 4) Operating cycles for <ol style="list-style-type: none"> 1) <u>Rotary switches with limit position:</u> From „0“ position over all „On“ positions to the end position and back to the „0“ position. 2) <u>Rotary switches without a limit position:</u> From „0“ position over all „On“ positions to the „0“ position. No turn backwards. <p>If the manufacturer declares only the number of operating cycles, the maximum number of switching operation corresponding to the worst case shall be tested (e.g. 5 contact operations of the single contact within one 360° turn).</p> <p>If the manufacturer declares, in addition, the number of switching operation for a single contact the number of operating cycles is defined consequently. The number of switching operation cannot be lower than the number of operating cycles.</p> <p>EN 60335-1 annex H is applicable.</p> <p>Explanatory notes: -</p>		