DOCUMENT CHANGE REQUEST

DCR number 1121	Changes required for: General	Originator: Steve Thacker
Date: 2018/02/26	Date sent: 2017/11/17	Organisation: ESCC Executive Secretariat
Status: IMPLEMENTED		

Title:	Switches Thermostatic Bimetallic SPDT Opening Contact		
Number:	3702/001	Issue:	5

Other documents affected:

Page:

Total reformat/re-write of ESCC Detail Specification 3702/001 issue 5 as part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format as well as reflecting changes resulting from the conversion of ESCC Generic Specification No. 3702 issue 4 to 5.

The layout, format and general content of 3702/001 Draft 6 is based on other converted ESCC Detail Specifications (see attached for proposed 3702/001 Draft 6).

The technical content of ESCC 3702/001 Draft 6 remains closely based on the original ESCC 3702/001 issue 5 except as detailed herein.

Paragraph:

All

Original wording:

See ESCC 3702/001 issue 5

Proposed wording:

Total reformat of this Detail Specification as part of the ongoing conversion of legacy specifications to the ESCC format.

See below for summary of changes, also see attached the proposed 3702/001 Draft 6 that implements all the proposed changes.

Note: known support for active procurement against this specification includes the following Manufacturers:
• Comepa (ESCC QPL listed)

.....
Summary of changes to the current format, layout and content is as follows:

General
Rewording and restructure of various sections and paragraphs of the specification, plus other editorial changes based on the layout and editorial content of other Detail Specifications already converted to ESCC format.

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In addition, editorial and technical amendments resulting from the changes made to the test requirements of the Generic Specification No. 3702, plus additional changes as proposed by Manufacturer Comepa.

Specific amendments include:
• Spec Title:
Amended to include term “with snap action (to be consistent with the Generic spec).
Add option for both opening and closing contact types.
Based on type “TH47” (Comepa part number) is added for information.

• Table 1(a), Table 2, etc. Temperature symbol definitions are amended to reflect the definitions given in the Generic spec: TNF, TNR, Tol, Nom Diff, TF, TR, Act Diff, T2, T3 are used

“Operating Temperature” is amended to be called “Functioning Temperature” (clarification as proposed by Manufacturer Comepa)

• Table 1(a) (& Para 4.5.4.4)
The mechanical description (i.e. differences) are editorially amended to clarify the actual details.

The range of components for Grade 1 and Grade Y are amended/replaced/corrected (in line with Manufacturer Comepa’s stated range).
Note: Grade 1 is renamed as Grade Z; the temperature ranges, tolerances and differentials are amended to include all available component configurations from Comepa (covering both ESCC qualified and unqualified components)

Note: the ESCC QPL certificate for Comepa will need to be changed to reflect the new specification definitions at the appropriate time.

• Table 1(b),
100000 switching cycles added as a remark against IR and VR ratings
Overload Current is corrected to be 6A maximum (was 8A; see also deviation on Para 4.2 below)

Rated voltage, VR is added (for completeness)

Operating and Storage temperature ranges are amended (as proposed by Manufacturer Comepa)

• Table 1(b) Note 1, distance criteria added to soldering temp rating (> 1.5mm from body) (for clarification)

• Figure 2, all dimension drawings are redrawn (no dimension changes apply)

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• Figure 3, Note is added that the terminals are isolated from the case (for clarification)

• Para 4.2
Deviations on robustness of terminations is removed (no longer are deviations).

Deviations on Overload (i.e. Ioverload = 2x IR) are removed as the standard 1.5x IR is proposed to be applied by Comepa (as is already specified in Table 6 test No. 12).

Seal test deviation is clarified to be maximum helium measured leak rate.

• Para 4.4.1, ‘hermetically sealed’ is added to the case description (for clarification/consistency)

• Para 4.5, 4.5.1, 4.5.3
SCC testing level B is no longer specified.

Marking items now include the ESCC qualified components symbol.

• Para 4.5.4, The switch contact type (i.e. opening or closing) is added (as proposed by Manufacturer Comepa)

• Para 4.5.4.3,
tolerance x (= ‘none’) is removed (as it is unused in this spec)

tolerance +/-2% (letter B) is added.

• Table 2, Thermal Measurements are separated from Electrical Measurements (new Paras 2.4 & 2.5).

• Table 5(a) & 5(b) are removed as the requirements are now covered by the Generic spec.
Note: for table 5(b) the max tolerance on test temperature of up to TNf +30°C & TNr -30°C are no longer specified.

• Table 6,

Salt Mist and Creepage are removed (as they no longer apply in new Chart F4).

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Only Chart F4 tests that include electrical or thermal tests are now included in this table (i.e. Seal, External Visual Inspection, Robustness of Terminations, Permanence of Marking, Damp Heat (Steady State) , Solderability are not listed).

Whenever a change in temperature or differential (i.e. a calculation) is required in any test, the same absolute measurement is added as an individual measurement.

Response Time: initial TF is added as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate parameter drift during Thermal and Electrical Measurements).

Rapid Change of Temp: initial TF, TR, Act Diff are added as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate drift during Thermal and Electrical Measurements). Final electrical measurements are deleted (now to be measured during the individual Thermal and Electrical Measurements test after Seal).

Vibration: monitoring during testing is specified

Shock: monitoring during testing is specified. Final electrical and thermal measurements are deleted (now to be measured/calculated during the individual Thermal and Electrical Measurements test after Seal with tighter change limits).

Resistance to soldering heat: initial TF, TR, Act Diff are added as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate drift during Thermal and Electrical Measurements). Final thermal measurements are deleted (now to be measured/calculated during the individual Thermal and Electrical Measurements test after Seal).

Overload: initial TF, TR, Act Diff are added as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate drift during Thermal and Electrical Measurements); Final electrical and thermal measurements are deleted (now to be measured/calculated during the individual Thermal and Electrical Measurements test after Seal).

Operating Life: initial TF, TR, Act Diff as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate drift), and intermediate TF, TF, TR & TR are added; monitoring during testing is specified. Final Act Diff & Act Diff is added

High and Low Temp Storage:
Low Temperature Storage test is added.
The High temp Storage 96h recovery is removed (as 1 to 2h recovery is covered by the Generic spec).
The High temp Storage final electrical and thermal measurements are deleted (now to be measured/calculated during the individual Thermal and Electrical Measurements test after Seal).
Initial TF, TR, Act Diff are added as well as note 1 to allow use of final measurement from Screening (to be used as a reference to calculate drift during Thermal and Electrical Measurements).

Electrical and Thermal Measurements:
Test renamed as “Thermal and Electrical Measurements”. All thermal and electrical tests including parameter change limits are included.

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• Appendix A:
Deviations on marking (engraved components) and Data documentation added per Manufacturer Comepa's proposal.

Justification:

Part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format.
Amendments are made to the format and presentation to be consistent with the various other ESCC Detail Specifications, already converted to ESCC format, as well as the ESCC Generic Specification No. 3702 Draft 5.

Some specific changes are included based on proposals from Manufacturer Comepa.

See also change details for justification for specific items above.

All technical changes have been defined and/or agreed by ESA and ESCC qualified Manufacturer Comepa.

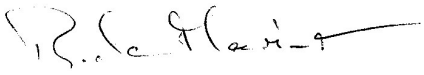
Attachments:

3702001_draft_6g_(dcr_attachment)_for_pswg_review.docx

Modifications:

N/A

Approval signature:



Date signed:

2018-02-26