Marine & Offshore Division

Certificate number: 07135/F0 BV
File number: AP 2959
Product code: 4501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

SCHNEIDER ELECTRIC

CARROS - FRANCE

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

TSX P57 Premium Automation Platform.

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships.
IEC 60092-504 (2001), IEC 61131-2 (2007), IEC 60533 (2015).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 17 Aug 2021

For BUREAU VERITAS,
At BV MARSEILLE, on 17 Aug 2016,
Stéphane LEROY

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

TSX P57 **Premium Automation Platform**

Processors
TSXP57 102M, TSXP57 202M, TSXP57 302M, TSXP57402M,TSXP57 252M, TSXP57 352M, TSXP57 452M
TPMXP57102M, TPMXP57202M, TPMXP57352M, TPMXP57452M
TSXP57 103M, TSXP57 153M, TSXP57 203M, TSXP57 303M
TSXP57 253M, TSXP57 353M, TSXP57 453M, TSXP57 303AM, TSXP57 353AM, TSXP57 353LAM, TSXP57 453AM
TSXP57 2623M, TSXP57 2823M, TSXP57 3623M, TSXP57 4823M, TSXP57 3623AM, TSXP57 4823AM
TSXP57 104M, TSXP57 154M, TSXP57 204M, TSXP57 254M
TSXP57 2634M, TSXP57 304M, TSXP57 354M, TSXP57 3634M
TSXP57 454M, TSXP57 5634M, TSXP57 1634M, TSXP57 4634M, TSXP57 6634M
TSXP57 554M, TSXP57 0244M
TSXH57 24M, TSXH57 44M
Co-processors
TPCXP57 1012M, TPCXP57 3512M, TPCXP57 203M, TPCXP57 353M
TSXPCI57 354M, TSXPCI57 204M
Bundle
TSXP57 CA0244M, TSXP57 CD0244M
Racks
TSX RKY6 to 12 — Non-extendable racks
TSXRKY4EX to 12EX — Extendable racks
Memory cards
TSX MRPC x ,TSX MRPP x , TSX MRPF x, TSX MFPB x, TSX MFPP x, MCPC x, TSXMRP DS2048P
X represents memory size

Power Supply Modules	
TSXPSY5520M	24V-48V d.c.
TSXPSY2600M	100V-240V a.c. 26W
TSXPSY5500M	100V-240V a.c. 55W
TSXPSY8500M	100V-240V a.c. 77W
TSXPSI2010	24V d.c. for co-processor
TSXPSY1610M	24V d.c. 30W
TSXPSY3610M	24Vand 48V dc. 50W
Discrete I/O modules with terminal blocks	
TSX DEY16A2, TSXDEY16A3 TSX DEY08D2, TSXDEY16D2, TSX DEY16D3	24-48 V digital inputs
TSX DEY16A4, TSXDEY16A5	100-120V and 200-240 V digital inputs
Discrete I/O modules with connectors	
TSX DEY16FK, TSXDEY32D2K	24-48 V digital inputs
TSX DEY32D3K, TSXDEY64D2K, TSX DMY28FK, TSXDMY28RFK	24-48 V digital inputs /outputs

Discrete I/O modules with terminal blocks	
TSX DSY08S5, TSXDSY16S4 TSX DSY16S5, TSX DSY08T2, TSX DSY08T22	24-240 V ,1A – 2A digital triac outputs
TSX DSY16T2, TSX DSY08T31, TSX DSY08T3, TSXDSY16T3	24 –48 V , 0.25 – 2A digital transistor outputs
TSX DSY08R5, TSXDSY16R5	24-240V AC – DC digital relay outputs
TSXDSY08 R5A, TSXDSY08 R4D	24-240V AC – DC digital relay outputs protected
Discrete I/O modules with connectors	
TSX DSY32T2K, TSXDSY64T2K	24 V digital transistor ouputs

Analogue I/O modules inputs	
TSX AEY420, TSXAEY414 TSX AEY800, TSXAEY1600, TSX AEY810, TSXAEY1614	Analogue inputs 10V , 0-20 mA, 4-20 mA,thermocouple

Analogue I/O modules outputs	
TSX ASY410, TSX ASY800	Analogue ouputs 10V , 0-20 mA, 4-20 mA
Measurement and counter , motion modules	
TSX CTY2A, TSX CTY4A,TSX CTY2C TSX CSY84, TSX CSY85, TSX CSY164	
Weighing modules	
TSX ISPY101, TSX ISPY101EX	
Communication modules	
TSX SCY11601, TSX SCY21601	1 channel Modbus 2 channels : uni-telway, Modbus / Jbus and PCMCIA type3
TSX IBY100, TSX ETY110, TSX ETY410, TSX ETY4102, TSX ETY4103 TSX PBY100 (1)	InterBus S Ethernet TCP/IP network Profibus network
TSX ETY110WS, TSX ETY5101, TSX ETY5102, TSX ETY5103, TSX WMY100, TSX ETY210, TSX ETG1000, TSX ETY120	Ditto + Web server With software Warm Standby TXT L BKP PREM
Communication cards	
TSX SCP111, TSX SCP112, TSX SCP114	Modbus / Jbus, Unitelway, character mode
TSX FPP10, TSX FPP20,	Fipio / Fipway
TSX MBP100, TSX CPP100, TSX CPP110	Modbus Plus
Accessories and communication cables (xx represents lenght)	
TSX PCI ACC1, TSXSCYCM6030, TSXSCYCM6530, TSXSCYCU6030, TSXSCYCU6530, TSXCBYxx, TSXMBPCExx, TSXCPPxx	

« C » Optional extension letter to product reference for coated version.

The product should be installed in the bridge and deck zone with using metallic cabinet only.

(1) This module is to be installed in metallic cabinet

2. DOCUMENTS AND DRAWINGS :

2.1- FSQ (Qualification Synthesis Sheet) ref.:
35007425P0500100, 35007425P0500200,
35003711P0500101, 35006360P0500400,
35003711P0500201, 35003711P0500401,
35003711P0500301, 35003711P0500601
35003711P0500701, 35003712P0500103,
35006360P0500500, 35003711P0500501,
35006360P0500300, 35003713P0500103,
35007425P0500300, 35006360P0500100,
35003712P0500403,
35007413P0500100, 35003712P0500103,
35005938P0500402, 35005938P0500502,
35005938P0500602, 35005938P0500702,
35005938P0500802, 35005938P0500902,
35003713P0500201, 35005938P0500202,
35005938P0500302, 35005938P0500101,
35005938P0501002, 35003713P0500301,
35005938P0501202, 35005938P0501302,
35005938P0501402, 35005938P0501502,
35006616P0500301, 35006616P0500401,
35006616P0500501, 35006616P0500601,
35005938P0501102, 35003712P0500303,
35003712P0500403, 35003712P0500503,
35003712P0500603, 35006360P0500201,
Chantier 9822, Chantier 9822,
35006077P0500101, 35008924P0500100,
35007425P0500400, 35003712P0500203.

2.2 - Catalogue dated May 2012 - ref.: MKTED212031EN.
2.3 - PSY1610 & 3610 drawings N° 1 399 096 02 10 A 04 81.
2.4 - UL report File E95257 revised on 20/Sep./2004
2.5 - Catalogue dated 2008
2.6 - Status of firmeware versions N° S1A6756600_01

3. TEST REPORTS :

Groupe Schneider Laboratory recognized by Bureau Veritas.
Test reports N°s:
- 0106S01Q, 0106S02Q, 0106S04Q to 0106S010Q
- 0107S01Q to 0107S03Q, 0107S05Q to 0107S10Q
- 0209M01Q , 0209M02Q, 0209M08Q to 0209M10Q, 0209M13Q
- 0212S01Q to 0212S03Q, 0212S06Q to 0212S10Q
- 0214S01Q to 0214S08Q, 0214S12Q
- 0310S01Q to 0310S04Q, 0310S06Q to 0310S12Q
- 0311S01Q, 0311S03Q
- 0403S01Q
- 59765883-TUS, 59765909-TUS, 61472237-TUS, 61472238-TUS
- 9822M01Q to 9822M09Q
- R0211296C-E, R0404110C-E, RG-04-91140-1A
- 0704S01Vdated 17/07/2007
- 0704S02V dated 19/09/2007
- 0704S03V dated 20/12/2007
- 2008-0149-02-A dated 18/03/2008
- R0801033C4-E-C dated 02/04/2008
- 00704S14 dated 20/Jun./2008
- 0711S01C dated 14/Mar./2008
- 0711S03V dated 25/Mar./2008
- 0711S02V dated 19/Mar./2008
- 0711S01V dated 11/Mar./2008
- R0906213C1-E-C dated 31/August/2009
- 0906S01C dated 29/July/2009
- 0906S02V dated 29/July/2009
- 0906S03V dated 29/July/2009

4. APPLICATION / LIMITATION :

4.1 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.

4.2 - Approval valid for ships intended to be granted with the following additional Class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

4.3 - For Marine Application sensors, actuators and discrete I/O circuits shall be supplied from a DC floating network.

Output wiring including those between the I/O modules and field devices, shall not be grounded, except through any high impedance protective or fault detection circuit which may be fitted.

4.4 - For Marine Application, Connecting DC power supply modules are to be supplied by a floating DC supply network.

An external device, like an Earth Leakage Detector, is to be fitted so as to measure permanently the isolation between 24V and Earth ground in order to give an alarm when the isolation level is too low.

4.5 - The machinery protection based on data processing techniques is to be duplicated by another and different system.

4.6 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

4.7 - In order to lower the conducted and radiated emissions, the equipment listed in clause I shall be fitted in appropriate shielded cabinets and used with screened cables.

4.8 - In order to lower the conducted emissions, the power supplies of equipment listed in clause I shall be fitted with appropriate on line filters.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by **SCHNEIDER ELECTRIC** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **SCHNEIDER ELECTRIC** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

SCHNEIDER ELECTRIC
8ème rue
ZI de Carros
06516 CARROS
FRANCE

6. MARKING OF PRODUCT :

6.1 - Maker's name or trade mark.
- Catalogue Number and Serial Number.
- Equipment type number or model identification under which it was type-tested.

6.2 - Alternatively, the marking may be presented on a display at equipment start-up.

6.3 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

6.4 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

7. OTHERS :

7.1 - It is **SCHNEIDER ELECTRIC**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 07135/E0 BV issued on 24.Jan.2011. by the Society.

***** END OF CERTIFICATE *****