

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Programmable Electronic System**

with type designation(s)

Programmable Controller Modicon TSX 37 Micro

Issued to

SCHNEIDER ELECTRIC FRANCE**Carros, France**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

This Certificate is valid until **2021-12-31**.Issued at **Høvik** on **2016-11-15**DNV GL local station: **Marseille**Approval Engineer: **Nils Jarem**for **DNV GL**

Odd Magne Nesvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Programmable Controller TSX 37 Micro – TSX 37
 The following units are included in the approval:

Base	TSX 37-05/TSX 37-08 (Base 100-240 ac) TSX 37-100 (Base 100-240 ac) TSX 37-210/TSX 37-220 (Base 100-240 ac) TSX 37-101 (Base 24 dc) TSX 37-211/TSX 37-221 (Base 24 dc)
Extension Racks	TSX RKZ 02 (Extendable Racks)
Memory Extension Card	TSX MRP 032P to 264P, TSX MRPP 128k (RAM Memories) TSX MFP 032P to 264P, TSX MFPP 128k, TSX MFPB 096k (Flash EPROM Memories)
Discrete I/O Modules	24V dc: Terminal Blocks: TSX DEZ12 D2, TSX DMZ28 DR, TSX DEZ32 D2, TSX DMZ28 DT, TSX DSZ08 T2, TSX DSZ32 T2, TSX DSZ04 T2 Connectors: TSX DEZ12 D2K, TSX DMZ16 DTK, TSX DMZ28 DTK, TSX DMZ64 DTK, TSX DSZ08 T2K 100-240V ac Terminal Blocks: TSX DEZ08 A4, TSX DEZ08 A5, TSX DMZ28 AR 24V dc or 100-240V ac Terminal Blocks: TSX DSZ08 R5, TSX DSZ32 R5
Analogue I&O Modules	TSX AEZ801, TSX AEZ802, TSX ASZ401, TSX ASZ200 (Analogue inputs&outputs 10V, 0/20mA, 4/20mA) TSX AEZ414 (Thermocouple inputs) TSX AMZ600
Counter Modules	TSX CTZ 1A, TSX CTZ 2A, TSX CTZ 2AA, TSX CTZ 1B
Communication Modules	PCMCIA Card: TSX FPP 10, TSX FPP 20, TSX SCP 111/112/114, TSX CPP 100, TSX CPP 110, TSX MBP 100 Ethernet TCP IP network: TSX ETZ 410, TSX ETZ 510, TSX ETG 1000
Cables	TSX CDP x01/x02/xx3/, CAP x, SCPC x
Packages	TSX 37210 PAK 01, TSX 37211 PAK 02, TSX 37210 PAK 10

Product designation can be followed by "C" for coated PCB versions.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Job Id: **262.1-003799-7**
Certificate No: **TAA00000V7**

Type Approval documentation

Catalogue TSX Micro Jan 2006: MKTED205121FR dated 2006-01
TSX3705/3708/3710/3720 Implementation Manual Volume 1, TSX DM 37 xxE
Users manual: TSX DM 37 E/15985780101 dated 2000-08-09

Test reports:

1. Reference to Standard Testing Procedure CPT 0401 4 , signed and dated 96-03-25. Concerns QST:0612 (Vibrations), QST:0111 Power supply, QST :0251/0242/0231/0221 /0322 (EMC).
2. 9514S04Q (Temperature) dated 95-12-27
3. 9606060714 (Humidity) dated 96-07-05

Type approval periodical assessment report for A-12856, Carros on 2016-10-18.

Tests carried out

Applicable tests according to Standard for Certification No. 2.4.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE