



MARINE DIVISION

Certificate number: 20698/B0 BV

File number: AP 3915

Product code: 4483H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

mitsubishi electric corporation Nagoya Works
Nagoya - JAPAN

for the type of product

DISPLAY MONITORS / VIDEO SCREENS / TERMINALS

Graphic Operation Terminal type GOT1000 series.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

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 is a renewal of certificate N° 20698/A4 BV, which expires on 19/05/2014

This certificate will expire on: 07 Jul 2019

For BUREAU VERITAS,

At BV KOBE, on 07 Jul 2014,

Yasuo Hiramatsu



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

GOT (Graphic Operation Terminal): Touch panel type human machine interface.

1.1 - GOT main units:

Model name	Screen size	Display	Display color (number of colors)	Power supply	Memory size	Remarks		
GT1695M-XTBA	15" XGA	TFT color LCD (high brightness, wide viewing angle)	65536 colors	100-240 VAC	15MB			
GT1695M-XTBD	[1024x768 dots]			24 VDC				
GT1685M-STBA	12.1" SVGA	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC				
GT1685M-STBD	[800x600 dots]			24 VDC				
GT1675M-STBA	10.4" SVGA	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC				
GT1675M-STBD	[800x600 dots]			24 VDC				
GT1675M-VTBA	10.4" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC	11MB			
GT1675M-VTBD				24 VDC				
GT1675-VNBA		TFT color LCD	4096 colors	100-240 VAC				
GT1675-VNBD				24 VDC				
GT1672-VNBA			16 colors	100-240 VAC				
GT1672-VNBD				24 VDC				
GT1665M-STBA	8.4" SVGA	TFT color LCD (high brightness, wide viewing angle)	65536 colors	100-240 VAC	15MB			
GT1665M-STBD	[800x 600 dots]			24 VDC				
GT1665M-VTBA	8.4" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC				
GT1665M-VTBD				24 VDC				
GT1662-VNBA		TFT color LCD	16 colors	100-240 VAC				
GT1662-VNBD				24 VDC	11MB			
GT1655-VTBD	5.7" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)	65536 colors	24 VDC	15MB			
GT1595-XTBA	15" XGA	TFT color LCD (high brightness, wide viewing angle)	65536 colors	100-240 VAC	9MB			
GT1595-XTBD	[1024x768 dots]			24 VDC				
GT1585-STBA	12.1" SVGA	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC				
GT1585-STBD	[800x600 dots]			24 VDC				
GT1575-STBA	10.4" SVGA	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC				
GT1575-STBD	[800x600 dots]			24 VDC				
GT1575-VTBA	10.4" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)		100-240 VAC	5MB			
GT1575-VTBD				24 VDC				
GT1575-VNBA		TFT color LCD	256 colors	100-240 VAC				
GT1575-VNBD				24 VDC				
GT1572-VNBA			16 colors	100-240 VAC				
GT1572-VNBD				24 VDC				
GT1565-VTBA	8.4" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)	65536 colors	100-240 VAC	9MB			
GT1565-VTBD				24 VDC	5MB			
GT1562-VNBA		TFT color LCD	16 colors	100-240 VAC				
GT1562-VNBD				24 VDC				
GT1555-VTBD	5.7" VGA [640x 480 dots]	TFT color LCD (high brightness, wide viewing angle)	65536 colors	24 VDC	9MB			
GT1555-QTBD	5.7" QVGA							
GT1555-QSBD	[320x240 dots]	STN color LCD	4096 colors					
GT1550-QLBD		STN monochrome LCD	Monochrome B/W 16 gray scales					
GT1275-VNBA	10.4" VGA	TFT color LCD	256 colors	100-240 VAC	6MB			
GT1275-VNBD	[640x 480 dots]			24 VDC				
GT1265-VNBA	8.4" VGA			100-240 VAC				
GT1265-VNBD	[640x 480 dots]			24VDC				
GT1155-QTBDQ	5.7" QVGA [320x240 dots]	TFT color LCD	256 colors	24 VDC	3MB	For Q bus connection		
GT1155-QTBDA						For A bus connection		
GT1155-QSBDQ		SNT color LCD	Monochrome B/W 16 gray scales			For Q bus connection		
GT1155-QSBDA						For A bus connection		
GT1150-QLBDQ		STN monochrome LCD				For Q bus connection		
GT1150-QLBDA					For A bus connection			
GT1175-VNBA-C	10.4" VGA [640x 480 dots]	TFT color LCD	256 colors	100-240 VAC		Sold only in China		
GT1165-VNBA-C	8.4" VGA [640x 480 dots]							

Note:

Compliant to IP 67 for Front face part (with USB port cover installed) and IP 2X for inside part.

1.2 - Communication interface units:

Product name	Model name	Specification
Bus connection unit	GT15-QBUS	Bus connection (1ch) unit standard model for QCPU (Q mode) / motion controller CPU (Q series)
	GT15-QBUS2	Bus connection (2ch) unit standard model for QCPU (Q mode) / motion controller CPU (Q series)
	GT15-ABUS	Bus connection (1ch) unit standard model for QnA/ACPU / motion controller CPU (A series)
	GT15-ABUS2	Bus connection (2ch) unit standard model for QnA/ACPU / motion controller CPU (A series)
	GT15-75QBUSL	Bus connection (1ch) unit thin model for QCPU (Q mode) / motion controller CPU (Q series)
	GT15-75QBUS2L	Bus connection (2ch) unit thin model for QCPU (Q mode) / motion controller CPU (Q series)
	GT15-75ABUSL	Bus connection (1ch) unit thin model for QnA/ACPU / motion controller CPU (A series)
	GT15-75ABUS2L	Bus connection (2ch) unit thin model for QnA/ACPU / motion controller CPU (A series)
Serial communication unit	GT15-RS2-9P	RS-232 serial communication unit (D-sub 9-pin (male))
	GT15-RS4-9S	RS-232/485 serial communication unit (D-sub 9-pin (female))
	GT15-RS4-TE	* Usable only when connecting to temperature controllers/indicating controllers via RS-485
RS-422 conversion unit	GT15-RS2T4-9P	RS-232 -> RS-422 conversion unit
	GT15-RS2T4-25P	[RS-422 connector 9-pin] [RS-422 connector 25-pin]
MELSECNET/H communication unit	GT15-J71LP23-25	Optical loop unit
Ethernet communication unit	GT15-J71E71-100	Ethernet (100Base-TX/10Base-T) unit
CC-Link IE communication unit	GT15-J71GP23-SX	Intelligent device station unit (supporting CC-Link IE)

1.3 - Optional unit:

Product name	Model name	Specification
Printer unit	GT15-PRN	USB slave (PicBridge) for printer connection, 1 ch * Cable for printer connection (3 m) included
CF card unit	GT15-CFCD	For additional CF card port (B drive) on the back of the GOT
CF card extension unit	GT15-CFEX-C08SET	For additional CF card port (B drive) at the front of the control panel
Sound output unit	GT15-SOUT	For sound output
External input/output unit	GT15-DIO	For external input/output (source type input/sink type output)
	GT15-DIOR	For external input/output (sink type input/source type output)

1.4 - Cables:

Product	Name	Model name	Cable length	Application
Bus connection cable for QCPU (Q mode)	QCPU extension cable GOT-to-GOT connection cable	GT15-QC06B	0.6 m	For connection between QCPU and GOT For connection between GOT and GOT
		GT15-QC12B	1.2 m	
		GT15-QC30B	3 m	
		GT15-QC50B	5 m	
	Long-distance connection cable for QCPU GOT-to-GOT long-distance cable	GT15-QC100B	10 m	For long-distance (13.2m more) connection between QCPU and GOT (A9GT-QCNB required) For long-distance connection between GOT and GOT
		GT15-QC150BS	15 m	
		GT15-QC200BS	20 m	
		GT15-QC250BS	25 m	
		GT15-QC300BS	30 m	
		GT15-QC350BS	35 m	
Bus extension	connection box	A9GT-QCNB	-	Used for QCPU long-distance (13.2m or more) bus connection
Bus connection cable for QnA/ACPU/motion controller CPU (A series)	Large CPU extension cable	GT15-C12NB	1.2 m	For connection between QnA/ACPU/motion controller CPU (A series, extension base) and GOT
		GT15-C30NB	3 m	
		GT15-C50NB	5 m	
		GT15-AC06B	0.6 m	
		GT15-AC12B	1.2 m	For connection between QnA/ACPU/motion controller CPU (A series, extension base) and A7GT-CNB
		GT15-AC30B	3 m	
		GT15-AC50B	5 m	
		GT15-A370C12B-S1	1.2 m	
	Small CPU extension cable	GT15-A370C25B-S1	2.5 m	For connection between motion controller CPU (A series, main base) and GOT
		GT15-A370C12B	1.2 m	For connection between motion controller CPU (A series, main base) and A7GT-CNB
		GT15-A370C2B	2.5 m	
		GT15-A1SC07B	0.7 m	
	Small CPU extension cable	GT15-A1SC12B	1.2 m	For connection between QnAS/AnSCPU/motion controller CPU (A series) and GOT
		GT15-A1SC30B	3 m	For connection between QnAS/AnSCPU and GOT
		GT15-A1SC50B	5 m	
		GT15-A1SC05NB	0.45 m	
	Small CPU long-distance connection cable	GT15-A1SC07NB	0.7 m	
		GT15-A1SC30NB	3 m	
		GT15-A1SC50NB	5 m	For connection between QnAS/AnSCPU and A7GT-CNB
		GT15-C100EXSS-1	10.6 m	For long-distance (13.2 or more) connection between QnAS/AnSCPU/motion controller CPU (A series) and GOT
		GT15-C200EXSS-1	20 m	For long-distance (13.2 or more) connection between A7GT-CNB and GOT * Set of GT 15-EXCNB and GT 15 C BS
		GT15-C300EXSS-1	30 m	
	GOT - to - GOT connection cable	GT15-C07BS	0.7 m	For connection between GOT and GOT
		GT15-C12BS	1.2 m	
		GT15-C30BS	3 m	
		GT15-C50BS	5 m	
	GOT - to - GOT long-distance connection cable	GT15-C100BS	10 m	For connection between GOT and GOT
		GT15-C200BS	20 m	
		GT15-C300BS	30 m	
	A0J2HCPU connection cable	GT15-J2C10B	1 m	For connection between power supply unit (A0J2-PW) for A0J2HCPU and GOT
Bus connector	conversion box	A7GT-CNB	-	Used for QnA/ACPU long-distance (13.2m or more) bus connection
Buffer circuit	cable	GT15-EXCNB	0.5 m	Usable as GT 15-C EXSS-1 in combination with GT 15-C BS
RS-422 cable	QnA/A/FXCPU direct connection cable Computer link connection cable	GT01-C30R4-25P	3 m	For connection between QnA/ACPU/motion CPU (A series)/FXCPU (D-sub 9-pin connector) and GOT For connection between FA-CNV CBL and GOT For connection between serial communication unit and GOT For connection between AJ65BT-G4-S3 and GOT
		GT01-C100R4-25P	10 m	
		GT01-C200R4-25P	20 m	
		GT01-C300R4-25P	30 m	
		GT10-C30R4-25P	3 m	For connection between QnA/FXCPU (D-sub 25-pin connector) and GOT For connection between serial communication unit (AJ71QC24(N)-R4) and GOT
		GT10-C100R4-25P	10 m	
		GT10-C200R4-25P	20 m	
		GT10-C300R4-25P	30 m	
	Computer link connection cable	GT09-C30R4-6C	3 m	For connection between serial communication unit and GOT For connection between computer link unit and GOT
		GT09-C100R4-6C	10 m	
		GT09-C200R4-6C	20 m	
		GT09-C300R4-6C	30 m	
	FXCPU direct connection cable FX communication function extension board connection cable	GT01-C10R4-8P	1 m	For connection between FXCPU (MINI-DIN 8-pin connector) and GOT For connection between FXCPU communication function extension board and GOT
		GT01-C30R4-8P	3 m	
		GT01-C100R4-8P	10 m	
		GT01-C200R4-8P	20 m	
		GT01-C300R4-8P	30 m	
		GT10-C10R4-8P	1 m	
		GT10-C30R4-8P	3 m	
		GT10-C100R4-8P	10 m	
		GT10-C200R4-8P	20 m	
		GT10-C300R4-8P	30 m	

1.4 - Cables (Cont.):

Product name		Model name	Cable length	Application
RS-232 cable	QCPU direct connection data transfer cable	GT01-C30R2-6P	3 m	For connection between QCPU and GOT/personal computer (GT SoftGOT1000) (D-sub 9-pin)
	FX communication function extension board connection cable FX communication function adopter connection cable, data transfer cable	GT01-C30R2-9S	3 m	For connection between FXCPU communication function extension board (D-sub 9-pin connector) and GOT/ personal computer (GT SoftGOT1000) (D-sub 9-pin) For connection between FXCPU communication function adopter (D-sub 9-pin connector) and GOT For connection between personal computer (screen design software) (D-sub 9-pin, female) and GOT (D-sub 9-pin, female)
	FX communication function adopter connection cable, data transfer cable	GT01-C30R2-25P	3 m	For connection between FXCPU communication function adopter (D-sub 9-pin connector) and GOT/personal computer (GT SoftGOT1000) (D-sub 9-pin) For connection between (screen design software) (D-sub 25-pin, male) and GOT (D-sub 9-pin, female)
	Computer link connection cable	GT09-C30R2-9P GT09-C30R2-25P	3 m 3 m	For connection between serial communication unit and GOT For connection between computer link unit and GOT
External I/O unit connection conversion cable		GT15-C03HTB	0.3 m	For connection between GOT1000 (external I/O unit) and GOT-A900 external I/O interface unit connection cable (A8GT-C05TK/A05TK/A8GT-C-30TB/user-fabricated cable)
USB cable	Data transfer cable	GT09-C30USB-5P	3 m	For connection between personal computer and GOT For connection between QCPU (USB miniB) and personal computer (GT SoftGOT1000) For connection between printer and GOT (printer unit)
RS-422 conversion cable		GT16-C02R4-9S	0.2 m	For connection between RS-422/485 (connector) and RS-422 cable (D-sub 9 pins)
RS-485 terminal block conversion unit		FA-LTBGTR4CBL05 FA-LTBGTR4CBL10 FA-LTBGTR4CBL20	0.5 m 1 m 2 m	For connection between RS-422/485 (connector) and terminal block conversion cable
Analog RGB cable		GT15-C50VG	5 m	For connection between external monitor, personal computer and vision sensor and GOT

1.5 - Option:

Product name	Model name	Specification
Optional function board	GT15-FNB	(No expansion memory)
	GT15-QFNB	(No expansion memory)
	GT15-QFNB16M	+ 16MB expansion memory
	GT15-QFNB32M	+ 32MB expansion memory
	GT15-QFNB48M	+ 48MB expansion memory
	GT15-MESB48M	+ 48MB expansion memory
	GT16-MESB	For MES interface function
CF card	GT05-MEM-32MC	32MB flash ROM
	GT05-MEM-64MC	64MB flash ROM
	GT05-MEM-128MC	128MB flash ROM
	GT05-MEM-256MC	256MB flash ROM
	GT05-MEM-512MC	512MB flash ROM
	GT05-MEM-1GC	1GB flash ROM
	GT05-MEM-2GC	2GB flash ROM
	GT05-MEM-4GC	4GB flash ROM
	GT05-MEM-8GC	8GB flash ROM
	GT05-MEM-16GC	16GB flash ROM
Battery	GT15-BAT	Battery for backup of clock data and maintenance time notification data

1.6 - Software version list:**Embedded Software**

GOT Main units	OS	Version
GT11	Boot OS	05.35.00.AS
	Other OS	05.62.01
GT15	Boot OS	05.23.00.AL
	Other OS	05.62.01
GT16	Boot OS	05.61.00.BC
	Other OS	05.62.01
GT12	Boot OS	05.31.01.AR
	Other OS	05.62.00

Application Software

Application Software	Version
MELSOFT GT Works3	1.110Q

2. DOCUMENTS AND DRAWINGS:

MITSUBISHI GT15 User's Manual.
 MITSUBISHI GT16 User's Manual.
 MITSUBISHI GT11 User's Manual.
 MITSUBISHI Application Document for Type Approval BCN-89000-0549.
 MITSUBISHI Application Document for Type Approval BCN-88000-404
 MITSUBISHI Product drawings for Type Approval BCN-88000-403 Rev.2
 MITSUBISHI Software quality documentation BCN-88000-0322, BCN-88000-0323, BCN-88000-0324, BCN-88000-0325
 MITSUBISHI Software Version List BCN-88000-0455 Rev.4, dated June 16, 2014.
 MITSUBISHI document N°BCN-88000-0637 Rev.1, dated 20.06.2013.
 MITSUBISHI drawings filled in the document N°BCN-88000-661 Rev.1, dated 30.08.2013.
 MITSUBISHI CD-ROM N°

3. TEST REPORTS:

BCN-89000-0558 - Test report issued by MITSUBISHI on 19/11/2008, including:

- BCN-88000-0315 Test report for Bureau Veritas type approval Application.
- BCN-88000-0319 Type Approval Application Product Materials Document - Flame retardancy.
- BCN-88000-0320 Type Approval Application Product Structure Document - Protection against water immersion.
- BCN-88000-0368 - Test report issued by MITSUBISHI on 11 December 2009..
- BCN-88000-0405 - Type Approval Application Product Materials Document - Flame retardancy.
- BCN-88000-0406 - Type Approval Application Product Structure Document - Protection against water immersion.
- BCN-88000-0435 - Test report issued by MITSUBISHI on 07/2010
- BCN-88000-0669 Rev.1, dated 12.11.2013.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships and Offshore Units.
- 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.**
- 4.3 - BUREAU VERITAS EC Code: **31.**
- 4.4 - The **GOT1000 Series** Panels fulfil the EMC requirements for installation on the Bridge and Deck Zone.
- 4.5 - 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.
- 4.6 - 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 - The installation shall comply with the Manufacturer's recommendation described in the documentation.
- 4.8 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.
- 4.9 - Automation systems associated with essential services based on PLC's (including Panels), once installed on board ship, are to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.
- 4.10 - The minimum safe distance at which the equipment may be mounted from a standard or a steering magnetic compass is not to be less than 5 m.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The **GOT1000 Series** are to be supplied by **mitsubishi Electric Corporation Nagoya Works** 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 - **mitsubishi Electric Corporation Nagoya Works** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

mitsubishi Electric Corporation Nagoya Works,
5-1-14, Yada-Minami, Higashi-ku
461-8670 Nagoya
JAPAN

&

mitsubishi Electric Dalian Industrial Products CO., Ltd
Dongbei 3-5
Dalian Economic & Technical Development Zone
Liaoning Province
Dalian - China

6. MARKING OF PRODUCT:

- Manufacturer's name and Trade mark.
- Equipment type or model identification under which it was type-tested.
- Date of manufacture and serial number.

7. OTHERS:

7.1. This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that: **MITSUBISHI Electric Corporation Nagoya Works**, will accept full responsibility for informing shipbuilders, ship-owners and/or their sub-contractors of the proper methods of fitting and general maintenance of the approved units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 20698/A4 BV issued on 06 Jan 2014 by the Society.

*** END OF CERTIFICATE ***