



MARINE DIVISION

Certificate number: 13453/C0 BV

File number: AP 3553

Product code: 4501H

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

WAGO Kontakttechnik GmbH
Minden - GERMANY

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

WAGO I/O SYSTEM 750, 753

Requirements:

BV Rules for the Classification of Steel Ships and Offshore Units.

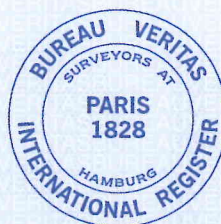
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 18 Jul 2016

For BUREAU VERITAS,

At BV HAMBURG, on 18 Jul 2011,

Dirk Hoepfner



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 :

The **WAGO I/O Systems 750 and 753** are decentralized I/O systems, modular and field bus independent.

The **WAGO I/O System 753** is for the prewiring of components independent from the electronic.

According to the type of application, field bus coupler can support following protocols: Ethernet, Profibus, CANopen or Modbus.

System may be composed of following modules:

Module Designation System 750	Module Designation System 753	Type Designation
Industrial Compact PC		
758-870	-	WAGO-I/O-IPC Software revision: 2.4.18/0200(13.12.2004) K-bus 01.02.05(8)
758-870/000-001	-	WAGO-I/O-IPC (Profibus Master) Software revision: 2.4.18/0200(13.12.2004) K-bus 01.02.05(8)
758-870/000-004	-	WAGO-I/O-IPC (Profibus slave) Software revision: 2.4.18/0200(13.12.2004) K-bus 01.02.05(8)
Power Supply Unit		
787-913	-	Power Supply Unit 230V AC / 24V DC 5A
Fieldbus Coupler / Controller		
750-303/...-...	-	Fieldbus Coupler Profibus DP / FMS 12MBd
750-323/...-...	-	Fieldbus Coupler Profibus DP / 12MBd / Digital
750-333/...-...	-	Fieldbus Coupler Profibus DP / V1 / 12MBd
750-833/...-...	-	Contr. Profibus DP / V1 / 12MBd
750-342/...-...	-	Fieldbus Coupler Ethernet TCP / IP 10Mbit/s
750-842/...-...	-	Contr. Ethernet TCP / IP 10Mbit/s
750-337/...-...	-	Fieldbus Coupler CANopen 10kBd - 1MBd
750-327/...-...	-	Fieldbus Coupler CANopen / Econ. 10kBd - 1MBd
750-837/...-...	-	Contr. CANopen 10kBd - 1MBd
750-312/...-...	-	Fieldbus Coupler ModBus / RS485 / 150 - 19200Bd
750-314/...-...	-	Fieldbus Coupler ModBus / RS232 / 150 - 19200Bd
750-315/...-...	-	Fieldbus Coupler ModBus / RS485 / 1,2 - 115,2kBd
750-316/...-...	-	Fieldbus Coupler ModBus / RS232 / 1,2 - 115,2kBd
750-812/...-...	-	Contr. ModBus / RS485 / 150 - 19200Bd
750-814/...-...	-	Contr. ModBus / RS232 / 150 - 19200Bd
750-815/...-...	-	Contr. ModBus / RS485 / 1,2 - 115,2kBd
750-816/...-...	-	Contr. ModBus / RS232 / 1,2 - 115,2kBd
759-332/000-001	-	Programming Tool WAGO-I/O-PRO 32 (German)
759-332/000-002	-	Programming Tool WAGO-I/O-PRO 32 (English)
750-306/...-...	-	Fieldbus Coupler DeviceNet
750-341/...-...	-	Fieldbus Coupler Ethernet 100Mbit/s
750-806/...-...	-	Contr. DeviceNet
750-841/...-...	-	Contr. Ethernet 100Mbit/s
Digital Input (DI) Module		
750-400	753-400	2DI 24V DC 3.0ms
750-401	753-401	2DI 24V DC 0.2ms
750-424	753-424	2DI 24V DC wire-break detection
750-402	753-402	4DI 24V DC 3.0ms
750-403	753-403	4DI 24V DC 0.2ms
750-404	753-404	up/down counter
750-415	753-415	4DI 24V AC/DC 20ms
750-405	753-405	2 DI 230V AC
750-406	753-406	2 DI 120V AC
750-410	753-410	2DI 24V DC 3.0ms proximity switch
750-411	753-411	2DI 24V DC 0.2ms proximity switch
750-418	753-418	2DI 24V DC 3.0ms Diagnosis / Acknowledgement

Module Designation System 750	Module Designation System 753	Type Designation
750-419	-	2DI 24V DC 0.2ms Diagnosis
750-421	753-421	2DI 24V DC 3.0ms Diagnosis
750-430	753-430	8DI 24V DC 3.0ms
750-431	753-431	8DI 24V DC 0.2ms
750-432	753-432	4DI 24V DC 3.0ms 2-Wire
750-433	753-433	4DI 24V DC 2.0ms 2-Wire
750-435	-	1DI NAMUR Ex i
750-436	753-436	8DI 24V DC 3.0ms Negative
750-437	753-437	8DI 24V DC 0.2ms Negative
Digital Output (DO) Module		
750-501	753-501	2DO 24V DC 0.5A
750-504	753-504	4DO 24V DC 0.5A
750-502	753-502	2DO 24V DC 2.0A
750-509	753-509	2DO 230V AC/DC 0.3A Solid State
750-512	753-512	2DO 250V AC 2.0A Rel. 2NO
750-513	753-513	2DO 250V AC 2.0A Rel. 2NO / Potential Free
750-517	753-517	2DO 250V AC 1.0A Rel. 2CO / Potential Free
750-507	-	2DO 24V DC 2.0A Diagnosis
750-516	753-516	4DO 24V DC 0.5A Negative
750-530	753-530	8DO 24V DC 0.5A
750-531	753-531	4DO 24V DC 0.5A 2-Wire
750-535	-	2DO 24V DC Ex i
750-536	753-536	8DO 24V DC 0.5A Negative
750-537	-	8DO 24V DC 0.5A High-Side Switching/Diagnosis
Analog Input (AI) Module (see clause 4.7 below)		
750-452/...-...	753-452	2AI 0-20mA Differential
750-472/...-...	753-472	2AI 0-20mA 16 Bit Single Ended
750-454/...-...	753-454	2AI 4-20mA Differential
750-474/...-...	753-474	2AI 4-20mA 16 Bit Single Ended
750-468/...-...	-	4AI 0-10V DC Single Ended
750-478/...-...	753-478	2AI 0-10V DC 16 Bit Single Ended
750-476/...-...	753-476	2AI \pm 0-10V DC 16 Bit Single Ended
750-461/...-...	753-461	2AI RTD / Pt 100
750-462/...-...	-	2AI Thermocouple / Type K
750-469/...-...	753-469	2AI Thermocouple / Type K / Diagnosis
750-453/...-...	753-453	4AI 0-20mA Single Ended
750-455/...-...	753-455	4AI 4-20mA Single Ended
750-456/...-...	753-456	2AI \pm 10V DC
750-457/...-...	753-457	4AI \pm 10V DC Single Ended
750-459/...-...	753-459	4AI 0-10V DC Single Ended
750-470/...-...	-	2AI 0-20mA Single Ended 50/60 Hz
750-473/...-...	-	2AI 4-20mA Single Ended 50/60 Hz
750-479/...-...	753-479	2AI \pm 10V DC Differential Measurement
750-483/...-...	753-483	2AI 0-30V DC Differential Measurement
750-485/...-...	-	2AI 4-20mA Ex i Single Ended
Analog Output (AO) Module (see clause 4.7 below)		
750-552/...-...	753-552	2AO 0-20mA
750-554/...-...	753-554	2AO 4-20mA
750-550/...-...	753-550	2AO 0-10V DC
750-556/...-...	753-556	2AO \pm 10V DC
750-553/...-...	-	4AO 0-20mA
750-555/...-...	-	4AO 4-20mA
750-557/...-...	753-557	4AO \pm 10V DC
750-559/...-...	753-559	4AO 0-10V DC
750-585/...-...	-	2AO 0-20mA Ex i

Module Designation System 750	Module Designation System 753	Type Designation
Supply Module		
750-602	-	24V DC Power Supply
750-601	-	24V DC Power Supply / Fuse
750-610	-	24V DC Power Supply / Fuse / Diagnosis
750-609	-	230V AC Power Supply / Fuse
750-611	-	230V AC Power Supply / Fuse / Diagnosis
750-612	-	0-230V AC/DC Power Supply
750-613	-	24V DC Bus Power Supply
750-624	-	24V DC Field Supply Filter (Surge)
750-626	-	24V DC Power Supply Filter (Surge)
750-625	-	24V DC Power Supply Ex i
Field Side Connection Module		
750-614	753-614	Field Side Connection Module
Separation and End Module		
750-616	-	Separation Module
750-600	-	End Module
Speciality Module		
750-650/...-...	753-650	RS 232 C Interface
750-651/...-...	-	TTY Interface
750-653/...-...	753-653	RS 485 Interface
750-404/...-...	753-404	Up/Down Counter
750-608/...-...	-	Trimmer Module 1kOhm / $\pm 12V$ DC
750-654/...-...	-	Data Exchange Module
Accessory		
750-960	-	Profibus Fieldbus Connector / D-Sub male
750-970	753-110	Profibus Fieldbus Connector / D-Sub male and female

2. DOCUMENTS AND DRAWINGS :

According to WAGO general catalog W4 - Volume 3 and I/O system Circuit Schematics filed in AP 3553,

3. TEST REPORTS :**WAGO Kontakttechnik GmbH:**

EK 0016_1/00 to 5/00 dated 06/10/00, EK0054_03 dated 06/11/03, EK0021_04 dated 05/11/04, EK0007_05 dated 25/05/05, EK0005_05 dated 14/09/05, EK0027_1_05 to 5-05 dated 06/12/05, EMVP09_0280 dated 08.09.2009

EMV Services:

00/0206-1 to 00/0206-4 dated 29/12/2000, 00/0206-5 dated 21/01/2001.

TÜV Nord:

TÜV 07 ATEX 554086 X dated 15.05.2008 and 15.10.2009 (for 750-435, 750-535, 750-485, 750-585 and 750-625)

4. APPLICATION / LIMITATION :

4.1 - BUREAU VERITAS Rules and Regulations 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 Environmental Category, **EC Code: 33**, for Power supply unit 787-913: **EC Code: 31**

4.4 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.

4.5 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

4.6 - System is to be installed on ground plane and wired with shielded cables (for communication and I/O 's).

4.7 - Use of filter modules (750-624 or 750-626) is absolutely necessary for power supplies (Refer to Manufacturer's instructions).

4.8 - 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.

4.9 - Line monitoring cannot be achieved with Analog I/O modules type 0-20mA or 0-10V DC.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above mentioned products are to be manufactured, examined and tested by **WAGO Kontakttechnik GmbH & Co. KG** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end

WAGO Kontakttechnik GmbH & Co. KG has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **WAGO Kontakttechnik GmbH & Co. KG** has declared to Bureau Veritas that the types of product described in this certificate are manufactured at the following production site:

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27
32423 Minden
GERMANY

5.4 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT :

- Maker's name or trade mark.
- Serial number of the units.
- Equipment type or model identification under which it was type-tested.

7. OTHERS :

7.1 - The approval is given with the understanding that the Society reserves the right the require check tests to be carried out on the units at any time, and that **WAGO Kontakttechnik GmbH, Minden - GERMANY**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 This certificate supersedes the Type Approval Certificate No 13453/B0 BV issued on 06 Jul 2006 by the Society.

*** END OF CERTIFICATE ***