



Marine & Offshore

Certificate number: 10225/E0 BV

File number: AP 3314

Product code: 3741H

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

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ISTANBUL - TURKEY

for the type of product

LEVEL TRANSMITTERS

LEVEL CONTROL DEVICE - Types: C-4, AU-18, AU-20, AU-21, AU-22 & EG-11.

Requirements:

BV Rules for the Classification of Steel Ships.

This certificate is issued to attest that Bureau Veritas Marine & Offshore 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: 05 Oct 2025

For Bureau Veritas Marine & Offshore,

At BV ISTANBUL, on 05 Oct 2020,

Gurcan Yilmaz



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 Marine & Offshore. 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 & Offshore 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 Marine & Offshore 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 electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=4hvxwhjpgl>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Product model or type designation:

C-4, AU-18, AU-20, AU-21, AU-22 & EG-11.

Product description:

AU21 is intended to engine room, bilge well, pump room, bilge well alarms.

AU22 & EG-11 are intended to engine room tanks, peak tanks, cargo area high level, cargo area high level alarms.

Magnetic level switches with following specifications:

Type	AU-18	AU-20	AU-21	AU-22	EG-11
Dia. mm	8	12	12	16	16
Drawing no	704.950.000.155 704.950.000.156 704.950.000.157 704.950.000.158	704.950.000.110 704.950.000.111 704.950.000.112 704.950.000.113	704.950.000.005	704.400.000.035 704.400.000.040 704.400.000.041	704.300.000.025 704.300.000.027 704.300.000.028
Working Condition	Normal open	Normal open / change over	Change over	Normal open / change over	Normal open
Switch no	1	1	1-2	1-4	prp
Float No	1	1	1-2	1-4	1
Electricity	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V
Tamb.	-10/+125	-10/+125	-10/+125	-10/+125	-10/+100
Ex Approval	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma/db IIA T6 GA/Gb	II 1/2 G Ex ma/db IIA T6 GA/Gb

Type	C-4	AU - EG
Mounting	Side	Vertical
Wetside Material	Stainless Steel AISI 304 (except float: AISI 316L)	Stainless Steel AISI 304
Temperature Range	up to 150° C	-10°C to 125°C
Maximum Working Pressure for wetside parts	16 Bar	16 Bar
Switch Voltage Max	125VDC / 480VAC	400VAC/DC
Switching Capacity	0.5A (VDC) - 15A (VAC)	N.O.: 3.0 A Change Over: 1.0 A

2. DOCUMENTS AND DRAWINGS:

According to documents and drawings filed in AP 3314, including:

Drawing No: 7040003 for C-4 and No 704.300.000.015 for AU-EG, the letter dated 23.11.2007.

AYVAZ :

- Fact Sheet "Au-EG" (2 pages, undated and unreferenced).
- Double relays control panel using instruction, dated Mar 2011
- EG11-2R control panel montage instruction, dated Mar 2014
- Manufacturer declaration letter, dated 2015.01.30

IEP ATEX :

- Ex certificate No. IEP 14 ATEX 0222, dated .2014-05-28
- Ex certificate No. IEP 14 ATEX 0223, dated .2014-05-28

3. TEST REPORTS:

- Test Report No. A030142-CLE1&2, issued by the Laboratoire National d'Essais (LNE) on 06th June 2000.
- Test Report No. TL1310, issued by Mariner Systems (UK) Ltd. on 31 March 2009.

4. APPLICATION / LIMITATION:

4.1 - BV Rules for the Classification of Steel Ships.

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

4.3 - Magnetic Level Switches Type C-4 may not be used for oil and liquid fuel tanks on board passenger ships where penetration below tank top would be necessary.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** 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 and as such does not require a BV product certificate.

5.3 - **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has declared to Bureau Veritas the following production site(s):

**HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ATATURK SAN. BOLGESI
MUSTAFA INAN CAD. NO:36
HADIMKOY, 34860 ISTANBUL
TURKEY**

6. MARKING OF PRODUCT:

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

7. OTHERS:

7.1 - It is **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.**'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 No. 10225/D0 BV issued on 28 Sep 2015 by the Society.

*** END OF CERTIFICATE ***



Marine & Offshore

Certificate number: 15889/C0 BV

File number: ACM 188/2512/03

Product code: 21011

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

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ISTANBUL - TURKEY

for the type of product

METALLIC EXPANSION JOINTS / BELLOWS

AYVAZ Axial/Lateral Expansion Joints with fixed flanges PN10/ PN16 - DN 80 to DN 400

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore 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° 15889/B1 BV expiring on 15/10/2020

This certificate will expire on: 15 Oct 2025

For Bureau Veritas Marine & Offshore,

At BV ISTANBUL, on 06 Oct 2020,

Gurcan Yilmaz



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 Marine & Offshore. 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 & Offshore 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 Marine & Offshore 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 electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfType.jsp?id=xgzemxxeho>

BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

AYVAZ Axial/Lateral Expansion Joints with fixed flanges PN10/ PN16 - DN 80 to DN 400

1.1 Design Specifications

Nominal size / PN	DN80/ PN10/16	DN100/PN10/16	DN125/PN10/16	DN150/PN10/16	DN200/PN10/16
Length (mm)	Min. 260	Min. 260	Min. 280	Min. 275	Min. 300
Max. working pressure (MPa)	0.1	0.1	0.1	0.1	0.1
Max. working temperature (°C)	+ 350	+ 350	+ 350	+ 350	+350
Tie rods	No	No	No	No	No
Movements (mm)	Axial +5/-25 Lateral +50/-0	Axial +5/-25 Lateral + 50/-0	Axial +5/-25 Lateral + 50/-0	Axial +5/-25 Lateral + 50/-0	Axial +5/-25 Lateral + 50/-0
Flanged type	Fixed	Fixed	Fixed	Fixed	Fixed
Number of plies	3	3	3	3	3
Intermediate Pipe	Optional	Optional	Optional	Optional	Optional
Number of convolutions	20	20	20	16	16

Nominal size / PN	DN250/ PN 10/16	DN300/PN10/16	DN350/PN10/16	DN400/PN10/16
Length (mm)	Min. 300	Min. 300	Min. 350	Min. 350
Max. working pressure (MPa)	0.1	0.1	0.1	0.1
Max. working temperature (°C)	+350	+350	+ 350	+350
Tie rods	No	No	No	No
Movements (mm)	Axial +10/-50 Lateral + 50/-0	Axial +15/-45 Lateral + 50/-0	Axial +15/-45 Lateral + 50/-0	Axial +15/-45 Lateral + 50/-0
Flanged type	Fixed	Fixed	Fixed	Fixed
Number of plies	3	3	3	3
Intermediate Pipe	Optional	Optional	Optional	Optional
Number of convolutions	14	13	13	13

1.2 Materials

Part Name	Material
Bellow	AISI 300 series stainless steel and duplex
Band	AISI 300 series stainless steel and duplex
Flange	St 37,2/1.0038

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Manufacturer's catalogue 1999 March Edition dated 20/06/2015
- Product list for fixed flanged metallic expansion joints dated 05/01/2016
- Installation manual for metal expansion joints submitted for approval in January 2016
- Drawing expansion joint with fixed flanges DN 80 N° 702.046.100.80 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 100 N° 702.046.100.100 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 125 N° 702.046.100.125 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 150 N° 702.046.100.150 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 200 N° 702.046.100.200 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 250 N° 702.046.100.250 Edition 01 dated 08/01/2015

- Drawing expansion joint with fixed flanges DN 300 N° 702.046.100.300 Edition 01 dated 08/01/2015
- Drawing expansion joint with fixed flanges DN 350 N° 702.046.100.350 Edition 01 dated 08/01/2016
- Drawing expansion joint with fixed flanges DN 400 N° 702.046.100.400 Edition 01 dated 08/01/2015

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 Type tests according to Testing Programme performed in-house under supervision by a Society's Surveyor:

- Pressure impulse test report N° TTAL.4.005 Rev.0 dated 25/10/2003 and test report N° 20151003 Rev.0 dated 02/10/2015
- Hydraulic pressure test at twice the max working pressure dated 2003, DN 300 N° 20151001 Rev.0 dated 02/10/2015, DN80 N° TTAL.4.011 dated 25/10/2014
- Burst pressure test at 4 times the max working pressure report N° TTAL.4.007 Rev.0 dated 25/10/2003, test report for DN 300 N° 20151002 Rev.0 dated 29/09/2015
- Cyclic expansion test report N° TTAL.4.006 Rev.0 dated 25/10/2003 and test report for DN 300 N° 20151003 Rev.0 dated 02/10/2015
- Dimension test report for DN 300 N° 20151010 dated 29/09/2015

3.2 Cyclic expansion tests (1000 cycles) are based on the tests valid for the products under the certificate 13480/D0 BV.

3.3 Instructions:

Instruction	Document number	Date
Hydrostatic test	TTAL.4.011 Rev.0	25/10/2014
Burst test	TTAL.4.012 Rev.0	25/10/2014
Fatigue cyclic test	TTAL.4.006 Rev.0	25/09/2015
Impulse test	TTAL.4.006 Rev.0	25/09/2015
EJMA 9 design calculation	AYVAZ/2016/399 Rev.0	13/01/2016

3.4 Tests reports witnessed by a Society's Surveyor dated 08/01/2016:

Nominal size / PN	Hydrostatic test	Burst test	Fatigue cyclic test	Impulse test
DN80 / PN10 / PN16	201601001	201601002	201601003	201601004
DN100 / PN10 / PN16	201601009	201601010	201601011	2016010012
DN125 / PN10 / PN16	201601013	201601014	201601015	2016010016
DN150 / PN10 / PN16	201601017	201601018	201601019	2016010020
DN200 / PN10 / PN16	201601033	201601034	201601035	2016010036
DN250 / PN10 / PN16	201601021	201601022	201601023	2016010024
DN300 / PN10 / PN16	201601025	201601026	201601027	2016010028
DN350 / PN10 / PN16	201601037	201601038	201601039	2016010040
DN400 / PN10 / PN16	201601029	2016010130	201601031	2016010032

4. APPLICATION / LIMITATION

4.1 The expansion joints may be used for exhaust gas lines.

4.2 The use of stainless steel is restricted as per BUREAU VERITAS rules.

4.3 Reduction factors are to be taken in consideration for maximum working pressure and tolerable movement caused by temperature influence according to manufacturer's recommendations.

4.4 The calculated maximum values of axial and/or lateral movements at 1000 full cycles are not to be exceeded.

4.5 The expansion joints are to be installed according to manufacturer's instructions and BUREAU VERITAS Rules.

4.6 In case of high level of vibrations in the piping systems where fitted to engines, pumps, compressors and other sources of high vibrations, care shall be taken in order to avoid that the natural frequency of compensator doesn't coincide with the system frequency.

4.7 The expansion joints must only be fitted in areas where they are always accessible.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** in compliance with the type and the requirements described in this certificate.

5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.

5.3 Each expansion joint is to be hydraulic pressure tested to 1.5 times the maximum working pressure under witnessing of a Society's Surveyor when required by the Rules.

5.4 BV product certificate is required.

5.5 For information, **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has declared to Bureau Veritas the following production site(s):

**HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ATATURK SAN. BOLGESI
MUSTAFA INAN CAD. NO:44
HADIMKOY
34555 ISTANBUL
TURKEY**

6. MARKING OF PRODUCT

The product shall be marked with at least:

- Manufacturer's name or logo
- Type designation and size
- Maximum working temperature and pressure
- Date of manufacture
- Society's brand as relevant

7. OTHERS

It is **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.**'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.

This certificate supersedes the Type Approval Certificate No. 15889/B1 BV issued by the Society.

*** END OF CERTIFICATE ***



**Marine & Offshore
Division**

Certificate number: 06628/E0 BV

File number: ACM 141/0110/001

Product code: 3714H

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

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ISTANBUL - TURKEY

for the type of product

LEVEL GAUGES / INDICATORS
Type MG-33 and MG-33 S

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° 06628/D0 BV expiring on 01/08/2016

This certificate will expire on: 01 Aug 2021

For BUREAU VERITAS,

At BV ISTANBUL, on 25 Jul 2016,

Gurcan Yilmaz



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 & Offshore 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

Magnetic Level Indicators Type MG-33 and MG-33 S

1.1 Design Specifications

- a vertical chamber
- a float
- two side connections
- an indicating scale with plastic/aluminium rollers containing magnets

1.2 Rating

	MG-33	MG-33S
Design pressure (bar)	16	10
Design temperature (°C)	180	160

1.3 Material specification

Chamber	AISI 304/316
Float	AISI 316
Side connections	AISI 304/316
Indicating scale	Plastic/Aluminium

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Technical data dated July 2016
- Drawing MG-33 S (small) DN 15 PN 16 dated 07/04/2005
- Drawing MG-33 S (small) DN 20 PN 16 dated 07/04/2005

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

- Test report N° 12.0421.2.95 dated 28/06/1995 of MPA NRW in Dortmund, Germany

4. APPLICATION / LIMITATION

4.1 Magnetic level gauges are to be used for tanks intended for fresh water, fuel oil, lubricating oil and other media which have a flash point above 60 °C according to requirements Pt C, Ch 1, Sec 10 [2.9.2] of BUREAU VERITAS Rules.

4.2 In passenger ships, the level gauges are not admitted for fuel oil and other flammable oils where penetration below tank top would be necessary and their failure or overfilling of the tanks is not to permit release of fuel into the space, unless otherwise permitted on case by case ship basis.

4.3 In cargo ships, their failure or overfilling of the tanks is not to permit release of fuel into the space.

4.4 The fitting of the level gauges is to be in accordance with the manufacturer's instructions as well as the Rules and Regulations applicable to the ship.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** 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 and as such does not require a BV product certificate.

5.3 **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S. has declared to Bureau Veritas the following production site:

**HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ATATURK SAN. BOLGESI
MUSTAFA INAN CAD. NO:44
HADIMKOY
34860 ISTANBUL
TURKEY**

6. MARKING OF PRODUCT

The product shall be marked with at least:

- Manufacturer's name or logo
- Type designation
- Operational data

7. OTHERS

It is **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** '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.

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



**Marine & Offshore
Division**

Certificate number: 10225/D0 BV

File number: AP 3314

Product code: 3741H

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ISTANBUL - TURKEY

for the type of product

LEVEL TRANSMITTERS

LEVEL CONTROL DEVICE - Types: C-4, AU-18, AU-20, AU-21, AU-22 & EG-11.

Requirements:

BV 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 will expire on: 28 Sep 2020

For BUREAU VERITAS,

At BV ISTANBUL, on 28 Sep 2015,

Gurcan Yilmaz



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 & Offshore 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 electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=xowlrstva3>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Product model or type designation:

C-4, AU-18, AU-20, AU-21, AU-22 & EG-11.

Product description:

AU21 is intended to engine room, bilge well, pump room, bilge well alarms.

AU22 & EG-11 are intended to engine room tanks, peak tanks, cargo area high level, cargo area high level alarms.

Magnetic level switches with following specifications:

Type	AU-18	AU-20	AU-21	AU-22	EG-11
Dia. mm	8	12	12	16	16
Drawing no	704.950.000.155 704.950.000.156 704.950.000.157 704.950.000.158	704.950.000.110 704.950.000.111 704.950.000.112 704.950.000.113	704.950.000.005	704.400.000.035 704.400.000.040 704.400.000.041	704.300.000.025 704.300.000.027 704.300.000.028
Working Condition	Normal open	Normal open / change over	Change over	Normal open / change over	Normal open
Switch no	1	1	1-2	1-4	prp
Float No	1	1	1-2	1-4	1
Electricity	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V	Max. 1 A, 24 V
Tamb.	-10/+125	-10/+125	-10/+125	-10/+125	-10/+100
Ex Approval	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma IIA T6 GA/Gb	II 1/2 G Ex ma/db IIA T6 GA/Gb	II 1/2 G Ex ma/db IIA T6 GA/Gb

Type	C-4	AU - EG
Mounting	Side	Vertical
Wetside Material	Stainless Steel AISI 304 (except float: AISI 316L)	Stainless Steel AISI 304
Temperature Range	up to 150° C	-10°C to 125°C
Maximum Working Pressure for wetside parts	16 Bar	16 Bar
Switch Voltage Max	125VDC / 480VAC	400VAC/DC
Switching Capacity	0.5A (VDC) - 15A (VAC)	N.O.: 3.0 A Change Over: 1.0 A

2. DOCUMENTS AND DRAWINGS:

According to documents and drawings filed in AP 3314, including:

Drawing No: 7040003 for C-4 and No 704.300.000.015 for AU-EG, the letter dated 23.11.2007.

AYVAZ :

- Fact Sheet "Au-EG" (2 pages, undated and unreferenced).
- Double relays control panel using instruction, dated Mar 2011
- EG11-2R control panel montage instruction, dated Mar 2014
- Manufacturer declaration letter, dated 2015.01.30

IEP ATEX :

- Ex certificate No. IEP 14 ATEX 0222, dated .2014-05-28
- Ex certificate No. IEP 14 ATEX 0223, dated .2014-05-28

3. TEST REPORTS:

- Test Report No. A030142-CLE1&2, issued by the Laboratoire National d'Essais (LNE) on 06th June 2000.
- Test Report No. TL1310, issued by Mariner Systems (UK) Ltd. on 31 March 2009.

4. APPLICATION / LIMITATION:

4.1 - BV Rules for the Classification of Steel Ships.

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

4.3 - Magnetic Level Switches Type C-4 may not be used for oil and liquid fuel tanks on board passenger ships where penetration below tank top would be necessary.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** 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 - **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ATATURK SAN. BOLGESI
MUSTAFA INAN CAD. NO:36
HADIMKOY, 34860 ISTANBUL
TURKEY

6. MARKING OF PRODUCT:

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

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 **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S. (ISTANBUL - TURKEY)** 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. 10225/C1 BV issued on 19 Feb 2015 by the Society.

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

**KALİTE SİSTEM ONAY SERTİFİKASI (modül H)****CERTIFICATE OF QUALITY SYSTEM APPROVAL****N° CE-2287-PED-H-HCA 001-15-TUR-rev-A**

Bureau Veritas Gozetim Hizmetleri Ltd, yetkinliğinin kapsamı dahilinde (onaylı kuruluş numarası 2287), ve Türkak tarafından akredite edilmiştir, 97/23/AT Basınçlı Ekipmanlar Direktifi, ek III modül H'ye uygun olarak incelemesini yapmış ve imalatçının aşağıda tanımlanan basınçlı ekipmanlarının dizayn, imalat, son değerlendirme ve testleri için yürüttüğü kalite sisteminin direktif hükümlerini karşıladığını tasdik eder.

Bureau Veritas Gozetim Hizmetleri Ltd, acting within the scope of its notification (notified body number 2287), attests that the quality system operated by the manufacturer for design, manufacture, final inspection and testing of the pressure equipment identified hereunder has been examined against the provisions of annex III, module H, of the Pressure Equipment Directive n° 97/23/EC, and found to satisfy the provisions of the directive which apply to it.

İmalatçı (isim) / Manufacturer (Name):

HACI AYVAZ ENDUSTRIYEL MAMULLER SAN A.S.

Adres / Address:

ATATURK SAN. BOLGESI MUSTAFA INAN CAD. NO: 36 HADIMKOY

34860 ISTANBUL

Turkey

HACI AYVAZ

Ticari isim - marka :

Trading Name - Mark

Ekipman Tanımı / Equipment description:

BELLOW VALVES AND BALANCING VALVES

İlgili Ekipmanların Tanımı (gerektiğinde ekipman listesi eklenecek):
Identification of equipment concerned (list attached where necessary)

SEE LIST OF THE CONCERNED EQUIPMENT BELOW

Bu sertifikanın şu tarihte geçerliliği bitecektir (gg/aa/yyyy):
This certificate will expire on (dd/mm/yyyy)

14/05/2018

Bu onay imalatçı ve Bureau Veritas Gozetim Hizmetleri Ltd ile karşılıklı imzalanan anlaşmada tanımlanan koşullara göre Bureau Veritas Gozetim Hizmetleri Ltd, yapılacak periyodik denetimler, Bureau Veritas Gozetim Hizmetleri Ltd'in yapacağı testler ve doğrulamalar ile geçerli olacaktır.
The approval is conditional upon the surveillance audits, tests and verifications to be carried out by Bureau Veritas Gozetim Hizmetleri Ltd, as per the provisions stated in the agreement signed with the manufacturer.

İmalatçı firma eğer (a) onaylı kalite sisteminin uygulanmasında ve (b) nihayi ürünün gözetim ve testlerinde, anlaşma kapsamında tahahhütlerini yerine getirmekte başarısız olursa ve genel olarak imalatçı 29 Mayıs 1997 tarihli ve yürürlükteki yasa(lar)ı aktarılmış 97/23/AT direktifinin zorunluluklarını karşılamakta başarısız olursa, bu yetki geçersiz olarak kabul edilecektir ve imalatçı firma bu yetkinin kullanımından doğacak tüm sonuçlarına tek başına katlanmak zorundadır.

This certificate shall be deemed to be void and the manufacturer shall alone bear any consequences pursuant to its use, where the manufacturer fails to comply with his undertakings as per the agreement in respect of (a) implementation of the approved quality system and (b) inspection and tests on the final product, and generally where the manufacturer fails in particular to comply with any of his obligations under directive nr 97/23/EC of 29 may 1997 as transposed in the applicable law(s).

Gözetim başlangıç veya yenilenme tarihi (gg/aa/yyyy) / Date of initial or renewal audit (dd/mm/yyyy): 12/05/2015

Denetçi / Surveyor: AHMET CAN GÜÇGÖRMEZ

Yayınlanma yeri Made at	Tarihi (gg/aa/yyyy) On (dd/mm/yyyy)	Onaylanan ve kaydedilen Approved and Recorded in	İmzalayan Signed by	Onaylanmış Kuruluş tarafından yetkilendirilmiş İmza No 2287 Signature Authorized by Notified Body No 2287
ISTANBUL	15/05/2015	Turkey	ALİ YAVRUOĞLU	

Kayıt numarası / Registration Code: 2015/000438/CE-2287-PED

Bu sertifika başvuran tarafından imzalanan ve anlaşmanın ekinde bulunan « Bureau Veritas Gozetim Hizmetleri Ltd General Conditions of Service » maddelerine tabidir.
This certificate is subject to the terms of Bureau Veritas Gozetim Hizmetleri Ltd General Conditions of Service attached to the agreement signed by the applicant.

Bu doküman Yasal Kuruluş Bureau Veritas Gozetim Hizmetleri Ltd Onayı haricinde değiştirilemez.
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