



CERTIFICATE NUMBER 19-HG1893822-PDA
EFFECTIVE DATE 18-September-2019
EXPIRATION DATE 17-September-2024
ABS TECHNICAL OFFICE Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ENDRESS & HAUSER CONDUCTA GMBH & CO

located at

DIESELSTR 24, GERLINGEN, D-70839, GERMANY

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Sensor

Model Orbisint CPS11D, CPS12D; Orbipac CPF81D; Condumax CLS21D; Indumax CLS50D; Memosens CLS82D; Turbimax CUS50D, CUS52D; Memosens CCS50D, CCS51D, CCS55D; Memosens COS81D; Liquiline Compact CM82, CM72; Memosens CYK10;

This Product Design Assessment (PDA) Certificate remains valid until expiration date or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Efstratios Maliatsos
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 2 - PDA Issued

Product: Sensor

Model: Orbisint CPS11D, CPS12D; Orbipac CPF81D; Condumax CLS21D; Indumax CLS50D; Memosens CLS82D; Turbimax CUS50D, CUS52D; Memosens CCS50D, CCS51D, CCS55D; Memosens COS81D; Liquiline Compact CM82, CM72; Memosens CYK10;

Intended Service:

Sensors for Liquid Analysis

Description:

Orbisint CPS11D, CPS12D, Orbipac CPF81D : pH sensor, digital Memosens technology;
Condumax CLS21D, Indumax CLS50D, Memosens CLS82D: Conductivity sensor, digital Memosens technology;
Turbimax CUS50D, CUS52D : Turbidity sensor;
Memosens CCS50D : Chlorine dioxide sensor, digital Memosens technology;
Memosens CCS51D : Free chlorine sensor, digital Memosens technology;
Memosens CCS55D: Free bromine sensor, digital Memosens technology;
Memosens COS81D : Hygienic, optical sensor for measuring oxygen, digital Memosens technology;
Liquiline Compact CM82 : Multiparameter transmitter for Memosens sensors;
Liquiline Compact CM72 : Single parameter transmitter for Memosens sensors;
Memosens CYK10 : Memosens data cable for all sensors with Memosens plug-in head;

Rating:

CPS11D, CPS12D, CPF81D, CLS21D, CLS82D, CCS50D, CCS51D, CCS55D, COS81D: Inductive coupling with "digital cable" CYK10;
CUS50D, CUS52D : 24VDC, powered by transmitter CM44x(R);
CLS50D : 3VDC, powered by transmitter CM44x(R);
CYK10 : 3VDC, powered by transmitter CM44x(R);
CM82, CM72 : 24VDC / 4..20mA;

Certified Safe Type (for applicable models):

CLS50D : II 1G Ex ia IIC T4/T6 Ga (BVS 12 ATEX E 048 X), Ex ia IIC T4/T6 Ga (IECEX BVS 14.0004X), Ex ia IIC T4/T6 Ga (GYJ19.1065X);
CYK10: II 1G Ex ia IIC T3/T4/T6 Ga or II 2G Ex ia IIC T6 Ga (BVS 04 ATEX E0 121 X), Ex ia IIC T3/T4/T6 Ga (IECEX BVS 11.0052X);
CM82, CM72 : Ex ia IIC T4/T6 Ga (CSA 70198983), Ex ia IIC T4/T6 Ga (IECEX TUR 18.0037X), II 1G Ex ia IIC T3/T4/T6 Ga (TUV 18 ATEX 8194 X), Ex ia IIC T4/T6 Ga (GYJ19.1132X);
CLS82D : Ex ia IIC T3/T4/T6 Ga (IECEX BVS 11.0052X), Ex ia IIC T3/T4/T6 Ga (GYJ16.1304X);
COS81D : Ex ia IIC T3/T4/T6 Ga (IECEX BVS 11.0052X), Ex ia IIC T3/T4/T6 Ga (GYJ17.1515X);
CPS**D : Ex ia IIC T3/T4/T6 Ga (IECEX BVS 11.0052X), Ex ia IIC T4/T6 Ga (GYJ19.1156X);
CLS21D: Ex ia IIC T3/T4/T6 Ga (GYJ19.1130X);

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. ATEX certified equipment is not to be installed in hazardous areas on U.S vessels unless it can be proved to have been tested to the applicable IEC 60079 series standards by an independent laboratory accepted by the U.S Coast Guard. USCG notice 01-12 (February 7, 2012).

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

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Notes/Drawing/Documentation:

- Drawing No. 2, ISO 9001 certificate; 101151 iq_9001_14001_18001_apx_17.pdf, Revision: 1, Pages: 1
Drawing No. 3, Differences Ex vs. Non-Ex versions; CPS11D non-ex vs ex EN V1.0.pdf, Revision: 1, Pages: 1
Drawing No. 4, Test report No. 19/0390, cable flameability; 190390 EN 60332-1-2 Endress, Currenta GmbH, Leverkusen, 13-03-2019, Revision: 1, Pages: 1
Drawing No. 5, Test report No. 19/0397, cable flameability; 190397 EN 60332-1-2 Endress, Currenta GmbH, Leverkusen, 13-03-2019, Revision: 1, Pages: 1
Drawing No. 6, Test report No. 19/0914, cable flameability; 190914 EN 60332-1-2 Endress Hauser, Currenta GmbH, Leverkusen, 17-06-2019, Revision: 1, Pages: 1
Drawing No. 7, Ex certificate; BVS 12 ATEX E 048X S1_EN.pdf, Revision: 1, Pages: 1
Drawing No. 8, Ex certificate; BVS04ATEX-E121X N15_EN.pdf, Revision: 1, Pages: 1
Drawing No. 9, Ex certificate; CLS50D IECEX BVS 14.0004X CoC S0.pdf, Revision: 1, Pages: 1
Drawing No. 10, Ex certificate; CoFC 70198983_EN.PDF, Revision: 1, Pages: 1
Drawing No. 11, Ex certificate; FM16US0145X_2017-09-27_CtrlDwg.pdf, Revision: 1, Pages: 1
Drawing No. 12, Ex certificate; GYJ16.1304X_EN_S1.pdf, Revision: 1, Pages: 1
Drawing No. 13, Ex certificate; GYJ17.1515X_COS81D_EN.pdf, Revision: 1, Pages: 1
Drawing No. 14, Ex certificate; GYJ19.1065X.pdf, Revision: 1, Pages: 1
Drawing No. 15, Ex certificate; GYJ19.1130X.pdf, Revision: 1, Pages: 1
Drawing No. 16, Ex certificate; GYJ19.1132X.pdf, Revision: 1, Pages: 1
Drawing No. 17, Ex certificate; GYJ19.1156X.pdf, Revision: 1, Pages: 1
Drawing No. 18, Ex certificate; Liquiline M CM42 EX valid 2020.12 S2.pdf, Revision: 1, Pages: 1
Drawing No. 19, Ex certificate; Memosens IECEX BVS 11.0052X CoC N7.pdf, Revision: 1, Pages: 1
Drawing No. 20, Ex certificate; Memosens IECEX BVS 11.0052X CoC N7 Annex.pdf, Revision: 1, Pages: 1
Drawing No. 21, Ex certificate; S6 CoFC 70208479_EN.pdf, Revision: 1, Pages: 1
Drawing No. 22, Ex certificate; S14_CoFC_70175576_CM42.pdf, Revision: 1, Pages: 1
Drawing No. 23, Ex certificate; scan_ex.IECEX_TUR_18.0037X_1.pdf, Revision: 1, Pages: 1
Drawing No. 24, Ex certificate; scan TÜV 18 ATEX 8194 X_incl. annex EN issue 01.pdf, Revision: 1, Pages: 1
Drawing No. 25, IP reports; 1901 CPSxxD_IP_TR, E&H internal, 04-02-2019, Revision: 1, Pages: 1
Drawing No. 26, IP reports; 70006577_IPx8_signed, E&H internal, 28-02-2018, Revision: 1, Pages: 1
Drawing No. 27, IP reports; 70006579_IPx8_signed, E&H internal, 28-02-2018, Revision: 1, Pages: 1
Drawing No. 28, IP reports; 970003875_CLS50D_IP6x, E&H internal, 20-06-2013, Revision: 1, Pages: 1
Drawing No. 29, IP reports; 970007051--CCS50D_IP6x_R, E&H internal, 24-01-2019, Revision: 1, Pages: 1
Drawing No. 30, IP reports; 970007052--CCS50D_IPx8_R, E&H internal, 23-01-2019, Revision: 1, Pages: 1
Drawing No. 31, IP reports; 970007138_IP6x_signed, E&H internal, 05-03-2019, Revision: 1, Pages: 1
Drawing No. 32, IP reports; 970007139_IPx8_signed, E&H internal, 28-02-2018, Revision: 1, Pages: 1
Drawing No. 33, IP reports; CLS21D_16_IPX8_070716, E&H internal, 16-07-2007, Revision: 1, Pages: 1
Drawing No. 34, IP reports; Experiment_report_IPx8_CLS50D, E&H internal, 11-02-2014, Revision: 1, Pages: 1
Drawing No. 35, IP reports; IP68 Declaration CYK10 EN v1.0.pdf, Revision: 1, Pages: 1
Drawing No. 36, IP reports; IP68 Declaration Memosens EN v1.0.pdf, Revision: 1, Pages: 1
Drawing No. 37, IP reports; VB_Dauerdichtheit am KLS-Stecksystem, E&H internal, 12-07-2017, Revision: 1, Pages: 1
Drawing No. 38, Pressure reports; Test_report_pressure_stability_CCS50D, E&H internal, 12-06-2019, Revision: 1, Pages: 1
Drawing No. 39, Pressure reports; Test_report_pressure_stability_CLS21D, E&H internal, 01-07-2019, Revision: 1, Pages: 1
Drawing No. 40, Pressure reports; Test_report_pressure_stability_CLS50D, E&H internal, 28-06-2019, Revision: 1, Pages: 1
Drawing No. 41, Pressure reports; Test_report_pressure_stability_CLS82D, E&H internal, 01-07-2019, Revision: 1, Pages: 1
Drawing No. 42, Pressure reports; Test_report_pressure_stability_COS81D, E&H internal, 01-07-2019, Revision: 1, Pages: 1
Drawing No. 43, Pressure reports; Test_report_pressure_stability_CPF81D, E&H internal, 28-06-2019, Revision: 1, Pages: 1
Drawing No. 44, Pressure reports; Test_report_pressure_stability_CPS11D, E&H internal, 28-06-2019, Revision: 1, Pages: 1

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Pages:1

Drawing No. 45, Pressure reports; Test_report_pressure_stability_CPS12D, E&H internal, 28-06-2019, Revision:1, Pages:1

Drawing No. 46, Pressure reports; Test_report_pressure_stability_CUS50D, E&H internal, 01-07-2019, Revision:1, Pages:1

Drawing No. 47, Pressure reports; Test_report_pressure_stability_CUS52D, E&H internal, 01-07-2019, Revision:1, Pages:1

Drawing No. 48, Pressure reports; Test_report_pressure_stability_Oil_in_water, E&H internal, 28-06-2019, Revision:1, Pages:1

Drawing No. 49, Test- and Monitoringplan; Test- und Monitoringplan_E+H_v07.pdf, Revision: 1, Pages: 1

Drawing No. 50, Test Report EMC; E182222E1, Phoenix Testlab, 27-06-2019, Revision: 1, Pages: 1

Drawing No. 51, Test Report Environmental; U182222E1, Phoenix Testlab, 11-07-2019, Revision: 1, Pages: 1

Drawing No. 52, Test Report Flammability; S182222E1, Phoenix Testlab, 01-03-2019, Revision: 1, Pages: 1

Drawing No. 53, User manual CCS50D; BA01773CEN_0219.pdf, Revision: 1, Pages: 1

Drawing No. 54, User manual CLS21D; BA01147CEN_0417.pdf, Revision: 1, Pages: 1

Drawing No. 55, User manual CLS50D; BA01572CA2_0217.pdf, Revision: 1, Pages: 1

Drawing No. 56, User manual CLS82D; BA01326CEN_0517.pdf, Revision: 1, Pages: 1

Drawing No. 57, User manual CM82; KA01397CA3_0118.pdf, Revision: 1, Pages: 1

Drawing No. 58, User manual COS81D; BA01448CEN_0318.pdf, Revision: 1, Pages: 1

Drawing No. 59, User manual CPF81D; TI00191CEN_1314.pdf, Revision: 1, Pages: 1

Drawing No. 60, User manual CPS11D; BA01572CA2_0217.pdf, Revision: 1, Pages: 1

Drawing No. 61, User manual CPS12D; BA01572CA2_0217.pdf, Revision: 1, Pages: 1

Drawing No. 62, User manual CUS50D; BA01846CEN_0118.pdf, Revision: 1, Pages: 1

Drawing No. 63, User manual CUS52D; BA01275CEN_0518.pdf, Revision: 1, Pages: 1

Drawing No. 64, User manual CYK10; BA00118CA2_0418.pdf, Revision: 1, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 19-HG1893822-PDA, dated 18/Sep/2019 remains valid until 17/Sep/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:

2019 Marine Vessels Rules: 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-8-3/1.11.1, 4-8-3/1.17, 4-8-3/13.1, 4-9-9/7, 4-9-9/13

National:

NA

International:

NA

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Government:

NA

EUMED:

NA

OTHERS:

NA

Product order codes covered by ABS certificate 19-HG1893822-PDA

The product configurator of the respective model shows “ABS marine certification” as a selectable option for all product configurations covered by the ABS certificate, except for CM72, CM82, CYK10, CPS11D, CPS12D, CPF81D, CLS21D, CLS50D, CLS82D, CUS50D, CUS52D, CCS50D, CCS51D, CCS55D, and COS81D.

The following tables show the product options of CM72, CM82, CYK10, CPS11D, CPS12D, CPF81D, CLS21D, CLS50D, CLS82D, CUS50D, CUS52D, CCS50D, CCS51D, CCS55D, and COS81D which are covered by ABS certificate 19-HG1893822-PDA.

	010	020	030	040	045	050	055
CM72-	**	**	**	*	*	*	*

010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC marking
	CA CSA C/US General Purpose
	B5 ATEX II 1G Ex ia IIC T4/T6 Ga + ATEX II 2D Ex ia IIIC T85°C...T135°C Db
	I4 IECEX Ex ia IIC T4/T6 Ga + IECEX Ex ia IIIC T85°C...T135°C Db
	CH CSA C/US IS Cl.I/II/III Div. 1 GP A-G T4/T6
	82 ATEX/IECEX II 1G Ex ia IIC T4/T6 Ga + ATEX/IECEX II 2D Ex ia IIIC T85 °C...T135 °C Db + CSA C/US IS Cl. I/II/III Div. 1 GP A-G T4/T6
020	Sensor Type; Measuring Range
	AD pH; 0..pH4
	AM ORP; -1500mV...+1500mV
	DD Conductivity conductive; 0..20uS/cm
	DE Conductivity conductive; 0..500uS/cm
	DF Conductivity conductive; 0..20mS/cm
	DG Conductivity conductive; 0..500mS/cm
	FD Oxygen amperometric; 0..200ug/l
	FF Oxygen amperometric; 0..20mg/l
	GD Oxygen optical; 0..200ug/l
	GF Oxygen optical; 0..20mug/l
	LE Chlorine; 0..5mg/l
030	Communication:
	B2 1x output 4..20mA, HART
040	Cable Length
	C 3m
	F 7m
	K 15m
045	Cable Type
	1 Outdoor use, rugged, shielded, diameter < 7mm
050	Cable Connection:
	A Crimp sleeves
055	Cable Outlet
	1 Straight

010 020 030 040 045 050 055

CM82-	**	**	**	*	*	*	*
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC marking
	CA CSA C/US General Purpose
	B5 ATEX II 1G Ex ia IIC T4/T6 Ga + ATEX II 2D Ex ia IIIC T85°C...T135°C Db
	I4 IECEx Ex ia IIC T4/T6 Ga + IECEx Ex ia IIIC T85°C...T135°C Db
	CH CSA C/US IS Cl. I/II/III Div. 1 GP A-G T4/T6
	82 ATEX/IECEx II 1G Ex ia IIC T4/T6 Ga + ATEX/IECEx II 2D Ex ia IIIC T85°C...T135°C Db + CSA C/US IS Cl. I/II/III Div. 1 GP A-G T4/T6
020	Sensor Type:
	XA Sensors with Memosens plug-in head
030	Communication:
	B2 1x output 4..20mA, HART
040	Cable Length
	C 3m
	F 7m
	K 15m
045	Cable Type
	1 Outdoor use, rugged, shielded, diameter < 7mm
050	Cable Connection:
	A Crimp sleeves
055	Cable Outlet
	1 Straight

010 020 030

CYK10	*	**	*
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010	Approval:
	A Non-hazardous area
	ATEX / NEPSI II 1G Ex ia IIC T3/T4/T6 Ga IECEx ia G IIC T3/T4/T6 Ga FM / CSA IS/NI CLI Div1&2 GP ABCD
	I IECEx Ex ia IIC T3/T4/T6 Ga
	L non-hazardous area, silicone free
	O FM IS Cl.I Div.1 Gr. A-D
	S CSA IS Cl.I Div.1 Gr. A-D
	T TIIS, pH
	U TIIS, Oxygen
	V ATEX/NEPSI II 3G Ex ic IIC
020	Cable Length:
	03 3m
	05 5m
	10 10m
030	Cable Connection:
	1 wire terminals
	2 M12 plug

010 020 030 040

CPS11D-	*	**	*	*
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010	Version:
	7 Basic version
020	Application Range:
	AA 1-12pH, -15...80oC, 6 bar
	AS 1-12pH, -15...80oC, 6 bar, Salzvorrat
030	Shaft Length:
	2 120mm
040	Approval:
	C Non-hazardous area + EAC marking
	1 Non-hazardous area
	ATEX/NEPSI II 1G; FM IS NI; CSA IS NI Ex ia IIC G T3/T4/T6 Ga ; CL.I. Div 1,Group A-D IECEx EX ia IIC T3/T4/T6/Ga
	K EAC Ex, 0Ex ia IIC T3/T4/T6 Ga X
	V ATEX/NEPSI II 3G Ex ic IIC T3/T4/T6

010 020 030 040

CPS12D-	*	**	*	*
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010	Version:
	7 Basic version
020	Measuring surface:
	NA Gold
	PA Platinum
030	Shaft Length:
	2 120 mm
040	Approval:
	C Non-hazardous area + EAC marking
	G ATEX/NEPSI II 1G; FM IS NI; CSA IS NI Ex ia IIC T3/T4/T6 Ga ; CL.I. Div 1, Group A-D IECEx EX ia IIC T3/T4/T6/Ga
	K EAC Ex, 0Ex ia IIC T3/T4/T6 Ga X
	V ATEX/NEPSI II 3G Ex ic IIC T3/T4/T6
	1 Non-hardous area

010 020 030 040

CPF81D-	*	**	*	*
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010	Version:
	7 Basic version
020	Application range:
	LH 0-14pH; 0-110oC
	NN 0-11pH; 0-80oC
030	Insertion length:
	1 23mm + electrode guard
	3 58mm + electrode guard
040	Approval:
	O FM IS NI Cl.I Div.1&2, Groups A-D
	1 Non-hardous area

010 020 030

CLS21D-	*	**	*
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010	Measuring Range:
	C 0.01-20.0mS/cm; k=1
020	Process Connection:
	1E Thread G1; PES
	1N Thread NPT 1"; PES
030	Approval:
	C Non-hazardous + EAC marking
	G ATEX / NEPSI II 1G Ex ia IIC T3/T4/T6 IECEx Ex ia IIC T6 Ga
	K EAC Ex, 0Ex ia IIC T6/T4/T3 Ga X
	O FM/CSA IS/NI Cl I Div. 1&2 GP A-D
	V ATEX / NEPSI Ex ic IIC T3/T4/T6 Gc
	1 Non-hazardous area

010 020 030 040 050

CLS50D-	**	*	*	*	*
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010	Approval:
	AA Standard
	BA ATEX II 1G Ex ia IIC T4/T6 Ga
	BV ATEX / NEPSI Ex ic IIC T3 T4/T6 Gc
	C2 CSA IS/NI Cl.I Div. 1/2 GP ABCD / Cl. I Zone 0 AEX ia IIC, Cl. I Zone 2 IIC
	FB FM IS/NI Cl.I Div. 1/2 GP ABCD / Cl. I Zone 0 AEX ia IIC, Cl. I Zone 2 IIC
	GB EAC Ex, 0Ex ia IIC T6/T4 Ga X
	GR Non-hazardous area + EAC marking
	IA IECEx ia IIC T4/T6 Ga
	NA NEPSI Ex ia IIC T4/T6 Ga
020	Process Connection:
	1 Thread G 3/4"
	2 Thread NPT 1"; PEEK
030	Sensor-, Seal-; Adapter Material:
	B PEEK; Viton; PEEK
	C PEEK; Chemraz; PEEK
	D PFA; Chemraz; 1.4571
040	Cable Length:
	1 3m
	2 7m
	3 15m
050	Cable connection:
	1 Fixed cable; crimp sleeves
	2 Fixed cable; M12 plug

010 020 030

CLS82D-	**	**	*
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010	Approval:
	AA Non-hazardous
	BA ATEX II 1G Ex ia IIC T3/T4/T6 Ga
	C2 CSA IS NI Cl. I Div.1&2 Gr.A-D
	FB FM IS NI Cl. I Div. 1&2 Gr.A-D
	GC EAC Ex, 0Ex ia IIC T6/T4/T3 Ga X
	GR Non-hazardous + EAC marking
	IA IECEX ia IIC T3/T4/T6 Ga
	NA NEPSI Ex ia IIC T3/T4/T6 Ga
020	Process Connection:
	GA Thread G1
	HA Thread NPT1
	PG PG 13.5 120mm
	PM PG 13.5 215mm
030	Sensor Material:
	A Ceramic, Platinum, Stainless Steel

010 020 030 040 050 060 070

CUS50D-	**	*	*	*	*	*	*
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC
020	Measuring Range:
	2 Absorption (ISO 7027)
030	Process Connection
	A Immersion sensor, thread G1, NPT 3/4
040	Adaption Cable:
	A Fixed cable ; crimp sleeves
	B Fixed cable; M12 plug
050	Cable Length:
	2 3m
	3 7m
	4 15m
	7 ...m
	8 ...ft
060	Sensor Material:
	A Head: PCTFE, shaft: 1.4571
	B Head: PCTFE, shaft: PPS
070	Seal Material:
	1 EPDM

010 020 030 040 050

CUS52D-	**	*	*	*	*
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC marking
020	Measuring Method:
	1 ISO 7027, IR
030	Process Connection:
	A Immersion Sensor, thread G1, NPT 3/4
040	Adaption Cable:
	A Fixed cable; crimp sleeves
	B Fixed cable; M12 plug
050	Cable Length:
	2 3m
	3 7m
	4 15m
	7m
	8 Ft

010 020 030

CCS50D-	**	**	**
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC
	CD CSA C/US NI Cl.I, Div.2, GP. A-D T6
020	Application:
	11 Process water, drinking water
030	Measuring Range:
	AD 5 mg/l
	BF 20 mg/l
	CJ 200 mg/l

010 020 030

CCS51D-	**	**	**
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC
	CD CSA C/US NI Cl.I, Div.2, GP. A-D T6
020	Application:
	11 Process water, drinking water
030	Measuring Range:
	AD 5 mg/l
	BF 20 mg/l
	CJ 200 mg/l

010 020 030

CCS55D-	**	**	**
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010	Approval:
	AA Non-hazardous area
	GR Non-hazardous area + EAC
	CD CSA C/US NI Cl.I, Div.2, GP. A-D T6
020	Application:
	31 Process water, sea water
030	Measuring Range:
	AD 5 mg/l
	BF 20 mg/l
	CJ 200 mg/l

010 020 035 040 050 060

COS81D-	**	**	*	*	*	*
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010	Approval:
	AA Non-hazardous area
	BA ATEX II 1G Ex ia IIC T3/T4/T6 Ga
	C3 CSA C/US IS NI Cl.I Div 1&2 Gr.A-D
	GC EAC Ex, 0Ex ia IIC T6/T4/T3 Ga X
	GR Non-hazardous area + EAC marking
	IA IECEx ia IIC T3/T4/T6 Ga
	NA NEPSI Ex ia IIC T3/T4/T6 Ga
020	Diameter; Process Connection; Length:
	A2 12mm; PG13.5; 120mm
	A4 12mm; PG13.5;220mm
035	Type Optical Cap:
	C C-shape
	U U-shape
040	Material, Sensorshaft; Sensorcap:
	B Stainless steel 1.4435, 316L
050	Material O-Ring:
	1 EPDM USP Cl. VI+FDA
	3 FFKM
060	Material Process Sealing:
	1 FKM USP Cl. VI+FDA