



CERTIFICATE NUMBER  
EFFECTIVE DATE  
EXPIRY DATE  
ABS TECHNICAL OFFICE

24-2487451-PDA  
08-Jan-2024  
07-Jan-2029  
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, Germany, D-70839**

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, CPS11E, CPS12D, CPS12E; Orbipac CPF81D, CPF81E; Condumax CLS21D, CLS21E; Indumax CLS50D; Memosens CLS82D; Turbimax CUS50D, CUS52D; Memosens CCS50D, CCS51D, CCS55D;...**

**Endorsements:**

**Tier:** **2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 07/Jan/2029 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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**Product:**                **Sensor**  
**Model:**                **Orbisint CPS11D, CPS11E, CPS12D, CPS12E; Orbipac CPF81D, CPF81E; Condumax CLS21D, CLS21E; Indumax CLS50D; Memosens CLS82D; Turbimax CUS50D, CUS52D; Memosens CCS50D, CCS51D, CCS55D; Memosens COS81D; Liquiline Compact CM82, CM72; Memosens CYK10;**

**Endorsements:**

**Intended Service:**  
Sensors for Liquid Analysis

**Description:**  
Orbisint CPS11D, CPS11E, CPS12D, CPS12E, Orbipac CPF81D, CPF81E : pH sensor, digital Memosens technology;  
Condumax CLS21D, CLS21E, 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, CPS11E, CPS12D, CPS12E, CPF81D, CPF81E, CLS21D, CLS21E, 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);  
CPS1\*D : Ex ia IIC T3/T4/T6 Ga (IECEX BVS 11.0052X), Ex ia IIC T4/T6 Ga (GYJ19.1156X);  
CPS1\*E: intrinsic safety "i" (IECEX BVS 19.0056X), II 1G Ex ia IIC T3/T4/T6 Ga (BVS 19 ATEX E 062X), Ex ia IIC Tx\* Ga (CoC 80021490);  
CLS21D: Ex ia IIC T3/T4/T6 Ga (GYJ19.1130X);  
CLS21E: Ex ia IIC T3/T4/T6 Ga (IECEX TUR.19.0030X), II 1G Ex ia IIC T3/T4/T6 Ga (TuV19 ATEX 8377 X), Ex ia IIC Tx\* Ga (CoC 80021490);  
CPF81E: Ex ia IIC Tx\* Ga (CoC 80021490);

**Service Restriction:**  
1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for

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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:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Installation in hazardous area is to be in accordance with any specific conditions for safe use as indicated in the Ex approval certificate.
3. Memosens CYK10 data cable has been tested for vertical flame propagation for a single cable in accordance with EN 60332-1-2:2004 + A1:2015 + A11:2016. Where the cable is installed in bunched configuration, the installation is to be provided with approved fire stop arrangements.

### Notes/Drawing/Documentation:

- Drawing No. 2, ISO 9001 certificate; 101151\_iq\_9001\_14001\_18001\_apx\_17
- Drawing No. 3, Differences Ex vs. Non-Ex versions; CPS11D non-ex vs ex EN V1.0
- Drawing No. 4, Test report No. 19/0390, cable flameability; 190390 EN 60332-1-2 Endress, Currenta Gmbh, Leverkusen, 13-03-2019
- Drawing No. 5, Test report No. 19/0397, cable flameability; 190397 EN 60332-1-2 Endress, Currenta Gmbh, Leverkusen, 13-03-2019
- Drawing No. 6, Test report No. 19/0914, cable flameability; 190914 EN 60332-1-2 Endress Hauser, Currenta Gmbh, Leverkusen, 17-06-2019
- Drawing No. 7, Ex certificate; BVS 12 ATEX E 048X\_S1\_EN.pdf
- Drawing No. 8, Ex certificate; BVS04ATEX-E121X\_N15\_EN.pdf
- Drawing No. 9, Ex certificate; CLS50D IECEX BVS 14.0004X\_CoC\_S0.pdf
- Drawing No. 10, Ex certificate; CoFC\_70198983\_EN.PDF
- Drawing No. 11, Ex certificate; FM16US0145X\_2017-09-27\_CtrlDwg
- Drawing No. 12, Ex certificate; GYJ16.1304X\_EN\_S1
- Drawing No. 13, Ex certificate; GYJ17.1515X\_COS81D EN
- Drawing No. 14, Ex certificate; GYJ19.1065X
- Drawing No. 15, Ex certificate; GYJ19.1130X
- Drawing No. 16, Ex certificate; GYJ19.1132X
- Drawing No. 17, Ex certificate; GYJ19.1156X
- Drawing No. 18, Ex certificate; Liquiline M CM42 EX valid 2020.12\_S2
- Drawing No. 19, Ex certificate; Memosens IECEX BVS 11.0052X\_CoC\_N7
- Drawing No. 20, Ex certificate; Memosens IECEX BVS 11.0052X\_CoC\_N7\_Annex
- Drawing No. 21, Ex certificate; S6\_CoFC\_70208479\_EN
- Drawing No. 22, Ex certificate; S14\_CofC\_70175576\_CM42.pdf
- Drawing No. 23, Ex certificate; scan\_ex.IECEX\_TUR\_18.0037X\_1.pdf
- Drawing No. 24, Ex certificate; scan TÜV 18 ATEX 8194 X\_incl. annex EN issue 01
- Drawing No. 25, IP reports; 1901\_CPSxxD\_IP\_TR, E&H internal, 04-02-2019
- Drawing No. 26, IP reports; 70006577\_IP6x\_signed, E&H internal, 28-02-2018
- Drawing No. 27, IP reports; 70006579\_IPx8\_signed, E&H internal, 28-02-2018
- Drawing No. 28, IP reports; 970003875\_CLS50D\_IP6x, E&H internal, 20-06-2013
- Drawing No. 29, IP reports; 970007051--\_CCS50D\_IP6x\_R, E&H internal, 24-01-2019
- Drawing No. 30, IP reports; 970007052--\_CCS50D\_IPx8\_R, E&H internal, 23-01-2019
- Drawing No. 31, IP reports; 970007138\_IP6x\_signed, E&H internal, 05-03-2019
- Drawing No. 32, IP reports; 970007139\_IPx8\_signed, E&H internal, 28-02-2018
- Drawing No. 33, IP reports; CLS21D\_16\_IPX8\_070716, E&H internal, 16-07-2007
- Drawing No. 34, IP reports; Experiment\_report\_IPx8\_CLS50D, E&H internal, 11-02-2014
- Drawing No. 35, IP reports; IP68 Declaration CYK10\_EN v1.0
- Drawing No. 36, IP reports; IP68 Declaration Memosens EN v1.0
- Drawing No. 37, IP reports; VB\_Dauerdichtheit am KLS-Stecksystem, E&H internal, 12-07-2017

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Drawing No. 38, Pressure reports; Test\_report\_pressure\_stability\_CCS50D, E&H internal,12-06-2019  
Drawing No. 39, Pressure reports; Test\_report\_pressure\_stability\_CLS21D, E&H internal,01-07-2019  
Drawing No. 40, Pressure reports; Test\_report\_pressure\_stability\_CLS50D, E&H internal,28-06-2019  
Drawing No. 41, Pressure reports; Test\_report\_pressure\_stability\_CLS82D, E&H internal,01-07-2019  
Drawing No. 42, Pressure reports; Test\_report\_pressure\_stability\_COS81D, E&H internal,01-07-2019  
Drawing No. 43, Pressure reports; Test\_report\_pressure\_stability\_CPF81D, E&H internal,28-06-2019  
Drawing No. 44, Pressure reports; Test\_report\_pressure\_stability\_CPS11D, E&H internal,28-06-2019  
Drawing No. 45, Pressure reports; Test\_report\_pressure\_stability\_CPS12D, E&H internal, 28-06-2019  
Drawing No. 46, Pressure reports; Test\_report\_pressure\_stability\_CUS50D, E&H internal, 01-07-2019  
Drawing No. 47, Pressure reports; Test\_report\_pressure\_stability\_CUS52D, E&H internal, 01-07-2019  
Drawing No. 48, Pressure reports; Test\_report\_pressure\_stability\_Oil\_in\_water, E&H internal, 28-06-2019  
Drawing No. 49, Test- and Monitoringplan; Test- und Monitoringplan\_E+H\_v07  
Drawing No. 50, Test Report EMC; E182222E1, Phoenix Testlab, 27-06-2019  
Drawing No. 51, Test Report Environmental; U182222E1, Phoenix Testlab, 11-07-2019  
Drawing No. 52, Test Report Flammability; S182222E1, Phoenix Testlab, 01-03-2019  
Drawing No. 53, User manual CCS50D; BA01773CEN\_0219  
Drawing No. 54, User manual CLS21D; BA01147CEN\_0417  
Drawing No. 55, User manual CLS50D; BA01572CA2\_0217  
Drawing No. 56, User manual CLS82D; BA01326CEN\_0517  
Drawing No. 57, User manual CM82; KA01397CA3\_0118  
Drawing No. 58, User manual COS81D; BA01448CEN\_0318  
Drawing No. 59, User manual CPF81D; TI00191CEN\_1314  
Drawing No. 60, User manual CPS11D; BA01572CA2\_0217  
Drawing No. 61, User manual CPS12D; BA01572CA2\_0217  
Drawing No. 62, User manual CUS50D; BA01846CEN\_0118  
Drawing No. 63, User manual CUS52D; BA01275CEN\_0518  
Drawing No. 64, User manual CYK10; BA00118CA2\_0418  
----- Reval. 2023-----  
Drawing No. TI01136CEN\_0620 CUS52D, Technical Information  
Drawing No. TI01493CEN\_0120 CPS11E, Technical Information  
Drawing No. TI01494CEN\_0120 CPS12E, Technical Information  
Drawing No. TI01528CEN\_0120 CLS21E, Technical Information  
Drawing No. TI01594CEN\_0121 CPF81E, Technical Information  
Drawing No. BA01275CEN\_0720 CUS52D, Operating Instructions  
Drawing No. BA02020CDE\_0120 CLS21E, Operating Instructions  
Drawing No. BA01988CEN\_0220 CPSx1E CPSx2E, Operating Instructions  
Drawing No. E202076E1, CPS11E, CPS21E, CLS21E, CUS52D, EMC Test Report Phoenix Testlab, 20-04-2021  
Drawing No. E220601E1, CFS51, CPF81E, EMC Test Report Phoenix Testlab, 23-06-2022  
Drawing No. S202076E1, CCS5XD, CUS52D, Fire hazard testing Phoenix Testlab, 15-03-2021  
Drawing No. U202076E1, CPS11E, CPS21E, CLS21E, CUS52D, Environment Test Report Phoenix Testlab  
Drawing No. U220601E1, CFS51, CPF81E, Environment Test Report Phoenix Testlab, 28-07-2022  
Drawing No. TR\_TC\_V\_001\_pressure\_stability\_CPS11E, Pressure reports  
Drawing No. TR\_TC\_V\_002\_pressure\_stability\_CPS12E, Pressure reports  
Drawing No. TR\_TC\_V\_003\_pressure\_stability\_CLS21E, Pressure reports  
Drawing No. TR\_TC\_V\_004\_pressure\_stability\_CUS52D\_plastic\_casing, Pressure reports  
Drawing No. Test 11 Pressure Test CPFx8E Report, Pressure reports  
Drawing No. 970007532 Type6P\_signed, CLS21E, IP Test Report , E+H Internal, 2019  
Drawing No. 970007533 IPx8\_signed, CLS21E, IP Test Report , E+H Internal, 2019  
Drawing No. 970007545 Dust Excl\_signed, CLS21E, IP Test Report , E+H Internal  
Drawing No. 970007623 Dust Excl, CUS52D, IP Test Report , E+H Internal, 2019  
Drawing No. 970007624 IPx6, CUS52D, IP Test Report , E+H Internal, 2019  
Drawing No. 970007625 IPx8, CUS52D, IP Test Report , E+H Internal, 2019  
Drawing No. 970007626 Type6P, CUS52D, IP Test Report , E+H Internal, 2019  
Drawing No. 970008219\_Entity pH CPF81E\_IP68, CPF81E, IP Test Report , E+H Internal, 2021



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Drawing No. BVS\_19\_ATEX\_E\_062\_X\_N2\_DE\_EN, Ex Certificate  
Drawing No. IECEx\_BVS\_19.0056X\_N2, Ex Certificate  
Drawing No. IECEx\_TUR\_19.0030X\_N1, Ex Certificate  
Drawing No. S0\_CSA\_CoFC\_80021490\_EN, Ex Certificate  
Drawing No. TuV\_19\_ATEX\_8377\_X\_N1, Ex Certificate  
----- Reval. 2024-----  
Drawing No. E231610E1, Testreport EMC, Phoenix Testlab, 28.11.2023  
Drawing No. U231610E1, Testreport ENV, Phoenix Testlab, 10.11.2023

**Terms of Validity:**

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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.

**STANDARDS**

**ABS Rules:**

2024 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, 4-9-9/13.1/Table 1

**National:**

NA

**International:**

IACS UR E10 Rev.8

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA

## Product order codes covered by ABS certificate

In the product configurator of the respective model, the option "ABS marine certification" can be selected for all configurations covered by the ABS certificate.

The following tables show the product options of CM72, CM82, CYK10, CPS11D, CPS11E, CPS12D, CPS12E, CPF81D, CPF81E, CLS21D, CLS21E, CLS50D, CLS82D, CUS50D, CUS52D, COS81D which are covered by ABS certificate 23-2369802-PDA.

	010	020	030	040	045	050	055
<b>CM72-</b>	<b>**</b>	<b>**</b>	<b>**</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>

010	Approval:
	AA Non-hazardous area
	** two letters for non-ex or ex-approval (no construction relevance)
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:
	B1 1x output 4..20mA
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
480	Device Version
	A1 1

010 020 030 040 045 050 055

CM82-	**	**	**	*	*	*	*
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010	Approval:	
	AA	Non-hazardous area
	**	two letters for non-ex or ex-approval (no construction relevance)
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
480	Device Version	
	A1	1

010 020 030

<b>CYK10</b>	*	**	*
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010	Approval:
	A Non-hazardous area
	* one letter for non-ex or ex-approval (no construction relevance)
020	Cable Length:
	01 1,5m
	03 3m
	05 5m
	10 10m
030	Cable Connection:
	1 wire terminals
	2 M12 plug

010 020 030 040

<b>CPS11D-</b>	*	**	*	*
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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
	* one letter for non-ex or ex-approval (no construction relevance)



010 020 030 040 050 590

<b>CPS11E-</b>	**	*	*	**	*	+	**
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010	Approval	
	AA	Non-hazardous area
	**	two letters for non-ex or ex-approval (no construction relevance)
020	Electrode Type	
	7	Basic version, zero point pH 7,0, temperature sensor NTC 30k
030	Application Range	
	A	1-12 pH, -15...80oC, 0,8...17 bar (abs)
	B	0-14 pH, 0...135oC, 0,8...17 bar (abs)
	F	0-10 pH, 0...70oC, 0,8...7 bar (abs)
040	Reference system	
	AA	Teflon ring junction, 3 M KCl, Ag/AgCl
	AS	Teflon ring junction, salt store, saturated KCl, Ag/AgCl
	TA	Teflon ring junction, ion trap, 3 M KCl, Ag/AgCl
050	Shaft Length	
	2	120 mm
590	Additional approval	
	LF	ABS
	and other additional marks (no construction relevance, can be more than two letters)	

010 020 030 040

<b>CPS12D-</b>	*	**	*	*
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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
	1	Non-hazardous area
	*	one letter for non-ex or ex-approval (no construction relevance)

	010	020	030	040	050	590
<b>CPS12E-</b>	**	*	*	**	*	+ **

010	Approval
	AA Non-hazardous area
	** two letters for non-ex or ex-approval (no construction relevance)
020	Electrode Type
	7 Basic version, temperature sensor NTC 30k
030	Application Range
	G Gold, -1500 mV... 1500 mV, -15...135°C, 0,8...17 bar (abs)
	P Platinum, -1500 mV... 1500 mV, -15...135°C, 0,8...17 bar (abs)
040	Reference System
	AA Teflon ring junction, 3 M KCl, Ag/AgCl
050	Shaft length
	2 120 mm
590	Additional approval
	LF ABS
	and other additional marks (no construction relevance, can be more than two letters)

	010	020	030	040
<b>CPF81D-</b>	*	**	*	*

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
	* one letter for non-ex or ex-approval (no construction relevance)

	010	020	030	040	045		590
<b>CPF81E-</b>	**	*	*	**	*	+	**

010	Approval:	
	AA	Non-hazardous area
	**	two letters for non-ex or ex-approval (no construction relevance)
020	Electrode type	
	5	Basic version, process connection NPT 3/4", zero point pH 7,0, temperature sensor NTC 30k
030	Application range	
	L	0-14 pH, 0...110°C, 0,8... 11 bar (abs)
	N	0-14 pH, 0...80°C, 0,8... 11 bar (abs)
040	Reference System	
	AD	Teflon ring junction, double chamber, 3 M KNO <sub>3</sub> , 3 M KCL, Ag/ AgCl
045	Insertion Length	
	1	23 mm, bulb membrane, electrode guard
	2	13, flat membran
	3	58 mm, bulb membrane, electrode guard
590	Additional approval	
	LF	ABS
	and other additional marks (no construction relevance, can be more than two letters)	

	010	020	030
<b>CLS21D-</b>	*	**	*

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
	1	Non-hazardous area
	*	one letter for non-ex or ex-approval (no construction relevance)

010 020 030 590

<b>CLS21E-</b>	**	**	**	+	**
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010	Approval
	AA Non-hazardous area
	** two letters for non-ex or ex-approval (no construction relevance)
020	Process Connection
	GA Thread G1"
	HA Thread NPT 1"
030	Material
	11 Sensor PES, electrodes Graphite
590	Additional approval
	LF ABS
	and other additional marks (no construction relevance, can be more than two letters)

010 020 030 040 050

<b>CLS50D-</b>	**	*	*	*	*
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010	Approval:
	AA Standard
	GR Non-hazardous area + EAC marking
	** one letter for non-ex or ex-approval (no construction relevance)
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

<b>CLS82D-</b>	<b>**</b>	<b>**</b>	<b>*</b>
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010	Approval:	
	AA	Non-hazardous
	GR	Non-hazardous + EAC marking
	**	one letter for non-ex or ex-approval (no construction relevance)
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

<b>CUS50D-</b>	<b>**</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>
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010	Approval:	
	AA	Non-hazardous area
	GR	Non-hazardous area + EAC marking
	**	one letter for non-ex or ex-approval (no construction relevance)
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

<b>CUS52D-</b>	**	*	*	*	*
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010	Approval:	
	AA	Non-hazardous area
	GR	Non-hazardous area + EAC marking
	**	one letter for non-ex or ex-approval (no construction relevance)
020	Measuring Method:	
	1	ISO 7027, IR
030	Process Connection:	
	A	Immersion Sensor, thread G1, NPT 3/4
	B	Clamp 2"
	C	Varivent N DN 65-125 (standard immersion depth 22,5 mm)
	D	Varivent N DN 65-125 (immersion depth 42,5 mm)
	H	Immersion sensor, thread G1, NPT3/4, head: PEEK, shaft: PPS
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

010 030 035 040 050 060

<b>COS81D-</b>	**	**	*	*	*	*
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010	Approval:	
	AA	Non-hazardous area
	**	one letter for non-ex or ex-approval (no construction relevance)
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	<u>FKM USP Cl. VI+FDA</u>
	3	FKM Ex