

Translation

1 **EU-Type Examination Certificate**

2 **Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 21 ATEX E 058 X**

4 Product: **Level limit switch type Capanivo CN 71xx...**

5 Manufacturer: **UWT GmbH**

6 Address: **Westendstraße 5, 87488 Betzigau, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 21.2117 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018

EN 60079-11:2012

IEC 60079-26:2021

General requirements

Intrinsic Safety „i“

**Equipment with Separation elements or combined
Levels of Protection**

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

 **II 1G Ex ia IIC T* Ga**
II 1/2G Ex ia IIC T* Ga/Gb
II 1/2D Ex ia IIIC T₂₀₀* Da/Db

*The final temperature class resp. surface temperature depends on the ambient and process temperature.

DEKRA Testing and Certification GmbH
Bochum, 2021-10-01

Signed: Jörg-Timm Kilisch

Managing Director

13 Appendix

14 EU-Type Examination Certificate

BVS 21 ATEX E 058 X

15 Product description

15.1 Subject and type

Type code series Capanivo CN 71xx			CN 7120	CN 7121	CN 7130	CN 7150
Pos.	Selection	Description				
1	Basic Type					
	A	CN 7120 (Short extension length, Stainless steel process connection)	•	-	-	-
	B	CN 7121 (Short extension length, Plastic process connection)	-	•	-	-
	C	CN 7130 (Pipe extension)	-	-	•	-
2	Certificate					
	Y	ATEX II 1G 1/2G Ex ia IIC and IECEx Ex ia IIC Ga Ga/Gb	•	•	•	•
		ATEX II 1/2D Ex ia IIIC and IECEx Ex ia IIIC Da/Db				
		<i>Notes:</i> 1) ATEX- / IECEx-versions may be combined with other approval types using the same specified type code selection. Other approval types are not relevant for ATEX- / IECEx-approval and therefore not listed. 2) CN 7150 dust approvals only with use of suitable cable with surface resistance of cable sheath $\leq 10^9 \Omega$, otherwise only with gas approvals.				
3	Enclosure					
3	1	Enclosure Ø 65 mm, internal terminal block, cable gland M20x1,5	•	•	•	•
	2	Enclosure Ø 65 mm, internal terminal block, conduit NPT 1/2"	•	•	•	•
	4	Enclosure Ø 35 mm, M12-plug	•	•	•	•
	5	Enclosure Ø 35 mm, M12-plug, incl. M12-mating plug and field-wiring cable	•	•	•	•
	6	Enclosure Ø 35 mm, Cable entry in place of M12-plug, incl. field wiring cable (directly soldered to PCB)				
		<i>Note:</i> For enclosure Ø 35 mm the 4-wire solid state relay is not implemented in the electronic				
4	Electronic					
	A	2-wire 8/16 mA (4-20 mA) and 4-wire solid state relay (Intrinsically safe)	•	•	•	•
		<i>Note:</i> For all versions 2-wire loop 8/16 mA (4-20 mA) usable. 4-wire solid state relay not available for CN 7130 and CN 7150.				
5	Process connection					
	*	Any process connection acc. to drawings 002-xx	•	•	•	•
		<i>Note:</i> Not each process connection available for each type.				
6	Material of sensor					
	A	PPS	•	•	•	•
	B	PVDF	•	•	•	•
	C	PEEK	•	•	•	•
		<i>Note:</i> Depending on the process connection selection, limitation on the material selection may be possible.				
7	Material of process connection and extension L					
	1	PPS	-	•	-	•
	2 or 5	Stainless steel	•	-	•	•
	4	PEEK	-	•	-	-
		<i>Note:</i> For CN 7150 extension cable material FEP used (cable jacket).				
8	Length of extension L					
	*	Any length acc. to drawings 002-xx	-	-	•	•
		<i>Note: Length of pipe extension or cable extension.</i>				



Options:											
17	*	FFKM seal O-ring	•	•	•						
19	*	Sliding coupling	-	-	-						
23	*	Overfill and Leakage certificate	•	•	•						
24	*	Hygiene certificate	•	-	-						
	*	Declaration, Certificate, Test report	•	•	•						
	*	Marking	•	•	•						
If options are not selected, the mentioned item is not present. Further options are not approval-relevant and therefore not listed / specified.											
Accessories:											
		Sensguard	•	•	-						
		Several adapter types	•	•	-						
		Shortening kit for extension cable	-	-	•						
Type code	position	1	2	3	4	5	6	7	8	L	mm
CN 71xx										=	
Notes:											
The markings " * " are replacement characters for variations which are not approval-relevant and therefore not further specified.											
In the type code of the equipment the marking " * " may be replaced by specific letters or numbers.											
Not all selections are available on every version.											

15.2 Description

The level switches series Capanivo CN 71... are used for capacitive level measurement in containers, tanks, vessels, silos, hoppers and pipelines.

They consist of a probe, a process connection and a connection housing Ø 65 mm or Ø 35 mm.

The types CN7120/CN7121 have an isolated switching output (transistor output).

Depending on the variant, the connection is made via terminals (for Ø 65 mm housing), plug (for Ø 35 mm housing) or pre-wired connection cable.

Depending on the variant, the probe is mounted on an extension tube or an additional extension cable.

All current limit switches have protection level "ia".

The level switches are suitable for use in areas requiring EPL Ga.

The level switches are also suitable for installation in the partition between areas with EPL Ga requirements and EPL Gb requirements, or in the partition between areas with EPL Da requirements and EPL Db requirements. The process connection is used for installation in the partition wall. The level limit switches maintain the zone separation.

Listing of all components used referring to older standards

Applicable for Digital Isolator U1a (Analog Devices Type ADuM1442ARQZ)

The digital isolator has a component certificate:

Sira 16ATEX2265U resp. IECEx SIR 16.0091U.

EN 60079-0:2012+A11:2013 and EN 60079-11:2012 resp.

IEC 60079-0:2011 Edition 6 and IEC 60079-11:2011 Edition 6

15.3 Parameters

15.3.1 Electrical parameter

15.3.1.1 Supply input

2-wire current loop

Terminals 1-2 or connector pin 1-3

Rated voltage	DC	10.8... 30	V
Rated current	8/16 mA or 16/8 mA (max. 4...20 mA)		
Max. input voltage	U_i	DC	30 V
Max. input current	I_i	160	mA
Max. input power	P_i	0.8	W
effective internal capacitance	C_i	7.6	nF
effective internal inductance	L_i	0.3	mH

For variants with connection cable (types CN71xx**5... and CN 71xx**6...):

400 pF/m and 2 μ H/m must be taken into account, if these parameters of the used cable are unknown.

15.3.1.2 Signal output

(Transistor output)

Only for types CN7120..., CN7121... with \varnothing 65 mm-enclosure and terminal block (position 3 in the type code = 1 or 2)

Terminals 4-5

Transistor output

Rated voltage (switching voltage)	DC	30	V
Rated current (switching current)		82	mA

Max. input voltage	U_i	DC	30	V
Max. input current	I_i		200	mA
Max. input power	P_i		0.35	W
Effective internal capacitance	C_i		4.2	nF
Effective internal inductance	L_i		negligible	

For variants with connection cable (types CN71xx**5 and CN71xx**6):

400 pF/m and 2 μ H/m must be taken into account, if these parameters of the used cable are unknown.

15.3.2 Thermal parameters

The correlation between

permitted ambient temperature

T_a

permitted process temperature

T_p

and temperature class (for Group II) or surface temperature (for Group III) is shown in the table below:

For use \leq 2000 m above sea level:

ambient temperature T_a	process temperature T_p	temperature class (Group II)	surface temperature (Group III)
-40 °C*...+50 °C	-40 C*...+50 °C	T6	$T_{200}80^{\circ}\text{C}$
-40 °C*...+65 °C	-40 C*...+65 °C	T5	$T_{200}95^{\circ}\text{C}$
-40 °C*...+85 °C	-40 C*...+100 °C	T4	$T_{200}130^{\circ}\text{C}$
-40 °C*...+85 °C	-40 C*...+125 °C	T3	$T_{200}155^{\circ}\text{C}$

For use > 2000 m ≤ 3000 m above sea level:

ambient temperature T _a	process temperature T _p	temperature class (Group II)	surface temperature (Group III)
-40 °C*...+45 °C	-40 C*...+45 °C	T6	T ₂₀₀ 80°C
-40 °C*...+58 °C	-40 C*...+58 °C	T5	T ₂₀₀ 95°C
-40 °C*...+76 °C	-40 C*...+90 °C	T4	T ₂₀₀ 130°C
-40 °C*...+76 °C	-40 C*...+112 °C	T3	T ₂₀₀ 155°C

* for variants with FFKM O-ring:

The lower limit of the temperature range (ambient temperature and process temperature) is limited to -20 °C.

16 Report Number

BVS PP 21.2117 EU, as of 2021-10-01

17 Special Conditions for Use

- 17.1 The relation between ambient temperature range, process temperature range and temperature class (for gas) or maximum surface temperature (for dust) is shown in the thermal parameters table.
- 17.2 If the process temperature exceeds the permissible ambient temperature, the max. resulting temperature close to the enclosure (see dotted line in the manual) shall not exceed the related max. permissible ambient temperature, taking the worst case conditions into account. This shall be verified by measurement when installed.
- 17.3 With option FFKM O-ring seal lower ambient temperature range and lower process temperature range are limited to -20 °C.
- 17.4 For applications Ga/Gb or Da/Db:
The installation of the level limit switch into the separation wall shall be in such a way that technical tightness on the process connection is ensured.
The level limit switch shall only be used in process media for which chemical resistance of the materials, which are in contact with the process media, is ensured. The materials which are in contact with the process media are defined by positions 6 and 7 of the type code.
- 17.5 For gas- and dust-explosive atmospheres:
The apparatus shall be installed in such a way that electrostatic charging hazards on non-metallic parts outside the process can be excluded.
- 17.6 For gas-explosive atmospheres only:
The apparatus shall be installed in such a way that electrostatic charging hazards on non-metallic parts inside the process can be excluded.
- 17.7 For dust-explosive atmospheres only:
The intrinsically safe circuits of the apparatus shall be regarded as grounded in the event of a fault. Appropriate measures to avoid danger from circulating fault currents acc. to IEC / EN 60079-14 shall be considered, depending on the installation (e. g. equipotential bonding along the intrinsically safe circuits).

18 **Essential Health and Safety Requirements**


The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2021-10-01
BVS-Scho/Hk/MGR A20200149



Managing Director