



(1) **Supplementary EU - Type Examination Certificate No. 3**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 2014/34/EU)**

(3) EU - Type Examination Certificate number:

FTZÚ 05 ATEX 0167X

(4) Product: **Isolating transducer type IRU-420-X...**

(5) Manufacturer: **Dinel s.r.o**

(6) Address: **U Tescomy 249, 760 01 Zlín, Czech Republic**

(7) This supplementary certificate extends EC - Type Examination Certificate No. FTZÚ 05 ATEX 0167X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product, as modified by this supplementary certificate, 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.

(9) In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20.04.2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20.04.2016.

(10) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018, EN 60079-11:2012

If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11) The marking of the product shall include the following:

 **II (1)G [Ex ia Ga] IIB/IIC**
 **II (1)D [Ex ia Da] IIIC**
 **I (M1) [Ex ia Ma] I**

(12) This certificate is valid till: **31.08.2026**

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 02.08.2021

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Physical-Technical Testing Institute
Ostrava - Radvanice

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(14) **Supplementary EU - Type Examination Certificate No. 3
to FTZÚ 05 ATEX 0167X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified product;
- Change of technical parameters;
- Evaluation according to the newest standards;
- Prolongation of certificate validity.

On the product "Isolating transducer type IRU-420-X..." were carried out minor constructional changes. Product is in accordance with standards mentioned in clause (10). The validity of certificate was prolonged for next five years. Updated documentation is listed in clause (19) in this supplement.

Technical parameters: were changed.

Rated voltage for IRU-420-X-230V: 60 – 230 V AC/50 – 60 Hz
85 – 230 V DC

Rated voltage for IRU-420-X-24V: 18 – 30 V AC/50 – 60 Hz
18 – 40 V DC

Ambient temperature: $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Maximum parameters of input/output circuits:

Supply: $U_m = 253 \text{ V}$

Terminals (5 – 6): $U_o = 27.3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0.64 \text{ W}$; $C_o = 86 \text{ nF}$; $L_o = 2 \text{ mH}$ (for IIC)

$U_o = 27.3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0.64 \text{ W}$; $C_o = 0.68 \mu\text{F}$; $L_o = 8 \text{ mH}$ (for IIB and IIIC)

$U_o = 27.3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0.64 \text{ W}$; $C_o = 1 \mu\text{F}$; $L_o = 10 \text{ mH}$ (for I)

Terminals (6 – 7): $U_i = 28 \text{ V}$; $I_i = 93 \text{ mA}$; $P_i = 0.53 \text{ W}$; $C_i \approx 0$; $L_i \approx 0$


The maximum values listed above may be used as concentrated capacitances and concentrated inductances.

(16) Report Number: 05/0167/3

(17) Specific Conditions of Use:

1. When product is applied in mining conditions, the isolating transducers IRU-420-X have to be installed in non-hazardous area or have to be installed inside of flameproof enclosure "d".

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 02.08.2021

Page: 2/3

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Physical-Technical Testing Institute, s.p., Pikartská 1337/7, 716 07 Ostrava - Radvanice, Czech Republic
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Physical-Technical Testing Institute
Ostrava - Radvanice

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(14) **Supplementary EU - Type Examination Certificate No. 3
to FTZÚ 05 ATEX 0167X**

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

(19) Drawings and Documents:

Number	Sheets	Date	Description
-	15	07/2021	User manual
IRU-420-OD-02	1	28.07.2021	Label
IRU-420-OD-03	1	28.07.2021	Label
IRU-420-OD-04	1	28.07.2021	Label
IRU-420-SZ-04	1	28.07.2021	Schematic diagram
IRU-420-SZ-05	1	28.07.2021	Schematic diagram
IRU-420-SS-01	1	05.01.2021	BOM
IRU-420-SS-02	1	28.07.2021	BOM
IRU-420-SS-03	1	05.01.2021	BOM
IRU-420-SS-04	1	28.07.2021	BOM
IRU-420-SS-05	1	05.01.2021	BOM
IRU-420-SS-06	1	28.07.2021	BOM

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 02.08.2021

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(1) **Supplement No. 2 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 94/9/EC)**

(3) EC-Type Examination Certificate Number:

FTZÚ 05 ATEX 0167X

(4) Equipment or protective system: **Isolating transducer type IRU-420-X...**

(5) Manufacturer: **Dinel s.r.o**

(6) Address: **U Tescomy 249, 760 01 Zlín, Czech Republic**

(7) This supplement of certificate is valid for: - prolongation of certificate validity
- modification of certified equipment
- change of equipment marking

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.

(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 (Paragraph 6) of Directive No. 94/9/EC. The Directive contains another requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0:2012, EN 60079-11:2012

(11) Marking of equipment shall contain symbols:

 **II (1)G [Ex ia Ga] IIB/IIC**
 **II (1)D [Ex ia Da] IIIC**
 **I (M1) [Ex ia Ma] I**

(12) This type examination certificate is valid till: **05.04.2021**

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 05.04.2016

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Physical Technical Testing Institute
Ostrava – Radvanice

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Supplement No. 2 to
EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X

(15) Description of Equipment or Protective System:

On equipment "Isolating transducer type IRU-420-X..." were carried out minor constructional changes. Marking of equipment was filled in by EPL symbols. The equipment can be also using for connection of associated equipments which are intended for areas with danger of explosion of dust. In consequence with this possibility was added a marking $\text{Ex} \text{II} (1) \text{D} [\text{Ex ia Da}] \text{IIIC}$. Equipment is in accordance with standards mentioned in clause (10). The validity of certificate is prolonged for next five years. Updated documentation is listed in clause (19) in this supplement.

Technical parameters: were changed.

Rated voltage for IRU-420-X-230V:60 - 230 V AC/50 – 60 Hz

85 - 230 V DC

Rated voltage for IRU-420-X-24V: 18 – 30 V AC/50 – 60 Hz

18 – 40 V DC

Ambient temperature: $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Maximum parameters of input/output circuits:

Supply: $U_m = 253 \text{ V}$

Terminals (5 – 6): $U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 86 \text{ nF}$; $L_o = 2 \text{ mH}$ (IIC)

$U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 0,68 \mu\text{F}$; $L_o = 8 \text{ mH}$ (IIB and IIIC)

$U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 1 \mu\text{F}$; $L_o = 10 \text{ mH}$ (I)

Terminals (6 – 7): $U_i = 28 \text{ V}$; $I_i = 93 \text{ mA}$; $P_i = 0,8 \text{ W}$; $C_i \approx 0$; $L_i \approx 0$

(16) Report No.: 05/0167-2

(17) Special conditions for safe use: without changes

(18) Essential Health and Safety Requirements:

Essential health and safety requirement of Directive 94/9/EC are covered by the standards mentioned in clause (10) of this supplement according which the equipment was verified.

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 05.04.2016

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Physical Technical Testing Institute
Ostrava – Radvanice

(13)

Schedule

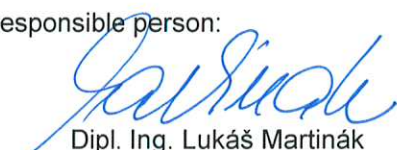
(14)

Supplement No. 2 to
EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X

(19) List of Documentation:

Drawing No./title:	Date/version:	Nr. of pages:
Technical conditions IRU-420-X	11.2015	14
User's manual	version: 11/2015	10
IRU-420-SZ-03	03.02.2016	1
IRU-420-SZ-04	03.02.2016	1
IRU-420-SZ-05	03.02.2016	1
IRU-420-OS-01	03.02.2016	1
IRU-420-OS-02	03.02.2016	1
IRU-420-OS-03	03.02.2016	1
IRU-420-OS-04	03.02.2016	1
IRU-420-SS-01	03.02.2016	1
IRU-420-SS-02	03.02.2016	1
IRU-420-SS-03	03.02.2016	1
IRU-420-SS-04	03.02.2016	1
IRU-420-SS-05	03.02.2016	1
IRU-420-SS-06	03.02.2016	1
IRU-420-OD-01	16.11.2015	1
IRU-420-OD-02	16.11.2015	1
IRU-420-OD-03	16.11.2015	1
IRU-420-OD-04	16.11.2015	1
IRU-420-OD-07	03.02.2016	1
IRU-420-OD-07 annex m	28.11.2015	2
IRU-420-OD-07 annex n	28.11.2015	2

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 05.04.2016

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(1) **Supplement No. 1 to
EC-Type Examination Certificate**

(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 05 ATEX 0167X

(4) Equipment or protective system: **Isolating transducer type IRU-420-X...**

(5) Manufacturer: **Dinel, s.r.o.,**

(6) Address: **U Tescomy 249, 760 01 Zlín - Příluky, Czech Republic**

(7) This supplement of certificate is valid for:

- modification of certified apparatus
- modification of apparatus marking
- application of new standards
- prolongation of certificate validity

(8) Modification of certified apparatus (protective system) and any of its approved variants are specified in documentation, list of which is mentioned in schedule of this certificate.


(9) This supplement to type examination certificate is valid only for type examination of design and construction of product sample in accordance with Annex 3 Paragraph 6) of Directive No. 94/9/EC. The Directive contains another requirements, which manufacturer shall fulfil before products are place on market or introduce in service.

(10) Safety requirements of modified parts were fulfilled by satisfying the following standards:

EN 60079-0 : 2006; EN 60079-11 : 2007

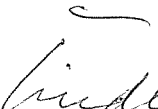
(11) Marking of equipment shall contain symbols:

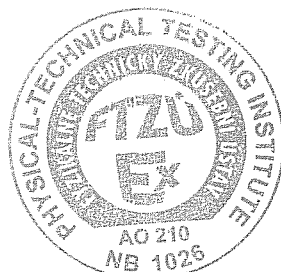
 **II (1)G [Ex ia] IIB/IIC**

 **I (M1) [Ex ia] I**

(12) This type examination certificate is valid till: **31. 01. 2016**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 31.01.2011

Number of pages: 4
Page: 1/4

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Physical Technical Testing Institute
Ostrava-Radvanice

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**Supplement No. 1 to
EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X**

(15) Description of Equipment or Protective System:

The name of manufacturer was changed.

There are minor changes in PCBs and the transformer manufacturer's has changed too. The changes do not influence the intrinsic safety and the input/output parameters are unchanged.

The certified apparatus is manufactured according to the verified documentation shown in the basic certificate and in this Supplement and complies with requirements of upgraded standards listed in (10).

The validity of the certificate is prolonged till 31.01.2016.

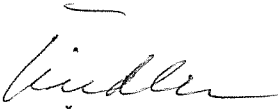
(16) Report No.: 05/0167-1 (10 pages)

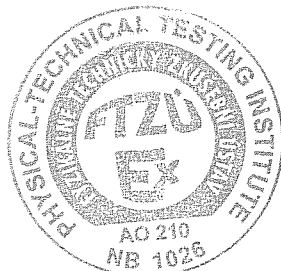
(17) Special conditions for safe use: Remain unchanged.

(18) Essential Health and Safety Requirements:

Covered by standards mentioned in (10).

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 31.01.2011

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Physical Technical Testing Institute
Ostrava-Radvanice

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**Supplement No. 1 to
EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X**

(19)

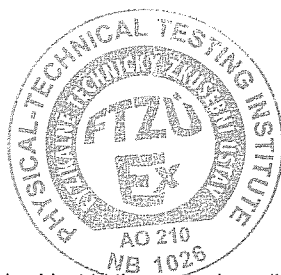
LIST OF DOCUMENTATION

<i>Documentation:</i>	<i>Date:</i>
1. Technical conditions IRU-420-X (9 pages)	12/2010
2. Instruction for use IRU-420-X (3 pages)	01/2006
3. Production documentation IRU-420-X (6 pages)	12/2010
4. Testing program IRU-400-X (2 pages)	12/2010
5. Drawings No.:	
IRU-420-SV-01	15.11.2010
IRU-420-SZ-01	15.11.2010
IRU-420-SZ-02	15.11.2010
IRU-420-SZ-03	15.11.2010
IRU-420-SZ-04	15.11.2010
IRU-420-SZ-05	15.11.2010
IRU-420-OS-01	15.11.2010
IRU-420-OS-02	15.11.2010
IRU-420-OS-03	15.11.2010
IRU-420-OS-04	15.11.2010
IRU-420-HP-01	15.11.2010
IRU-420-HP-02	15.11.2010
IRU-420-HP-03	15.11.2010
IRU-420-HP-04	15.11.2010
IRU-420-HP-05	15.11.2010
IRU-420-HP-06	15.11.2010
IRU-420-MO-01	15.11.2010
IRU-420-MO-02	15.11.2010
IRU-420-MO-03	15.11.2010
IRU-420-MO-04	15.11.2010

Responsible person:

Date of issue: 31.01.2011

Dipl. Ing. Šindler Jaroslav
Head of certification body



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Physical Technical Testing Institute
Ostrava-Radvanice

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(14)

Supplement No. 1 to
EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X

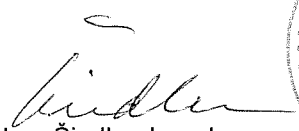
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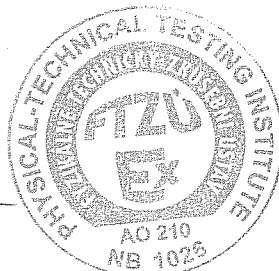
LIST OF DOCUMENTATION

<i>Documentation:</i>	<i>Date:</i>
5. Drawings No.: IRU-420-SS-01	15.11.2010
IRU-420-SS-02	15.11.2010
IRU-420-SS-03	15.11.2010
IRU-420-SS-05	15.11.2010
IRU-420-SS-06	15.11.2010
IRU-420-SS-07	15.11.2010
IRU-420-OD-01	15.11.2010
IRU-420-OD-02	15.11.2010
IRU-420-OD-03	15.11.2010
IRU-420-OD-04	15.11.2010
IRU-420-OD-05	15.11.2010
IRU-420-OD-06	15.11.2010
IRU-420-OD-07	15.11.2010
6. Impulsion transformer IRU-24V EFD25	21.12.2010
7. Impulsion transformer IRU-230V EF 20 04 027 47	15.12.2010

Responsible person:

Date of issue: 31.01.2011


Dipl. Ing. Šindler Jaroslav
Head of certification body



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EC-Type Examination Certificate

(1)

(2)

Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

(3) EC-Type Examination Certificate Number:

FTZÚ 05 ATEX 0167X

(4) Equipment or protective system: Isolating transducer type IRU-420-X...

(5) Manufacturer: **Dinel, s.r.o.,**

(6) Address: **Na Výsluní 541, 760 01 Zlín, Czech Republic**

(7) This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

05/0167 dated 27 January 2006

(9) Compliance with Essential Health and safety requirements has been assured by compliance with:


EN 50014:1997 + A1, A2; EN 50020:2002

(10) If the sign „X“ is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.


(12) The marking of the equipment or protective system shall include following:

 **II (1)G [EEx ia] IIB/IIC**

 **I (M1) [EEx ia] I**

This EC-Type Examination Certificate is valid till: **30. 01. 2011**

Responsible person:


Dipl. Ing. Sindler Jaroslav
Head of certification body



Date of issue: **30. 01. 2006**

Number of pages: **3**
Page: **1/3**

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Physical Technical Testing Institute
Ostrava-Radvanice

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Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X**

(15) Description of Equipment or Protective System:

The isolating transducers IRU-420-X are associated apparatus designed for sensor supply with output 0/4 to 20 mA. The galvanic separated output can be used for 0/4 to 20 mA (version IRU-420-I) or 4 to 20 mA and duplex signal transmission HART (version IRU-420-H), or 0 to 10 V (version IRU-420-U). The basic two version differs in transducer supply voltage – rated value 230 V or 24 V.

Maximum parameters od input/output circuits:

Terminals (5 – 6): $U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 86 \text{ nF}$; $L_o = 2 \text{ mH}$ (II C)

$U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 0,68 \text{ }\mu\text{F}$; $L_o = 8 \text{ mH}$ (II B)

$U_o = 27,3 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0,64 \text{ W}$; $C_o = 1,0 \text{ }\mu\text{F}$; $L_o = 10 \text{ mH}$ (I)

Terminals (6 – 7): $U_i = 28 \text{ V}$; $I_i = 93 \text{ mA}$; $P_i = 0,8 \text{ W}$; $C_i \approx 0$; $L_i \approx 0$

Rated voltage for IRU-420-X-230V: 60 – 230 V AC/50 – 60 Hz

85 – 230 V DC

Rated voltage for IRU-420-X-24V: 18 – 30 V AC/50 – 60 Hz

18 – 40 V DC

Ambient temperature: $-20^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$

(16) Report No. : 05/0167 (32 pages)

(17) Special conditions for safe use:

When applied in mining conditions the isolating transducers IRU-420-X must be installed in non-hazardous area or must be installed inside of flameproof enclosure „d“.

(18) Essential Health and Safety Requirements:

They are included in standards, which are mentioned in clause (9) of this certificate and in manufacturer instruction.

Responsible person:

Date of issue: 30.01. 2006

Dipl. Ing. Šindler Jaroslav

Head of certification body



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Physical Technical Testing Institute

Ostrava-Radvanice

Schedule

(14) EC-Type Examination Certificate N° FTZÚ 05 ATEX 0167X

(19)

LIST OF DOCUMENTATION

Documentation:

Date of issue:

1. Technical conditions IRU-420-X (14 pages) 01/2006
2. Instruction for use IRU-420-X (3 pages) 01/2006
3. Production documentation IRU-420-X (6 pages) 01/2006
4. Schedule of tests IRU-400-X (2 pages) 01/2006
5. Drawings (Annexes) verified on 17.01.2006:
 - Annex 1: Wiring IRU-420-I – transducer part
 - Annex 2: Wiring IRU-420-H – transducer part
 - Annex 3: Wiring IRU-420-U – transducer part
 - Annex 4: Wiring IRU-420-X-230 V – supply part
 - Annex 5: Wiring IRU-420-X-24 V – supply part
 - Annex 6: Printed board assembling schema IRU-420-I/H-230 V
 - Annex 7: Printed board assembling schema IRU-420-U-230 V
 - Annex 8: Printed board assembling schema IRU-420-I/H-24 V
 - Annex 9: Printed board assembling schema IRU-420-U-24 V
 - Annex 10: Assembling schema IRU-420-I-230 V with component values
 - Annex 11: Assembling schema IRU-420-H-230 V with component values
 - Annex 12: Assembling schema IRU-420-U-230 V with component values
 - Annex 13: Assembling schema IRU-420-I-24 V with component values
 - Annex 14: Assembling schema IRU-420-H-24 V with component values
 - Annex 15: Assembling schema IRU-420-U-24 V with component values
 - Annex 16: Printed board pattern IRU-420-I/H-230 V (populated side and printed side)
 - Annex 17: Printed board pattern IRU-420-U-230 V (populated side and printed side)
 - Annex 18: Printed board pattern IRU-420-I/H-24 V (populated side and printed side)
 - Annex 19: Printed board pattern IRU-420-U-24 V (populated side and printed side)
 - Annex 20: Component list IRU-420-I-230 V
 - Annex 21: Component list IRU-420-H-230 V
 - Annex 22: Component list IRU-420-U-230 V
 - Annex 23: Front panel drawing IRU-420-X (holes milling)
 - Annex 24: Variants of transducer front panel view IRU-420-X and terminals numbering
 - Annex 25: Transducer side printing view IRU-420-I
 - Annex 26: Transducer side printing view IRU-420-H
 - Annex 27: Transducer side printing view IRU-420-U
 - Annex 28: Manufacturer plate with serial number

Responsible person:

Date of issue: 30.01. 2006

Dipl. Ing. Šindler Jaroslav

Head of certification body



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