

CERTIFICATE OF CONFORMITY

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM16CA0042X
3. **Equipment:** JRBS-40DC-xR, JRBS-40TR Fieldbus Device Couplers
(Type Reference and Name)
4. **Name of Listing Company:** Hans Turck GmbH & Co KG
5. **Address of Listing Company:** Witzlebenstr 7
45472 Muelheim an der Ruhr
Germany
6. The examination and test results are recorded in confidential report number:

3050534 dated March 29, 2016
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CSA-C22.2 No. 213:R2013, CSA-C22.2 No. 1010-1:2004, CAN/CSA C22.2 No. 60079-0:2011, CAN/CSA C22.2 No. 60079-11:2014, CAN/CSA C22.2 No. 60079-15:2012
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. **Equipment Ratings:**

Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D hazardous locations, Intrinsically Safe for Class I, Zone 1, Group IIC hazardous locations, Intrinsically Safe for Class I, Zone 1 with connections to Group III hazardous locations, Nonincendive for Class I, Division 2, Groups A, B, C, and D with connections to Class II and III, Division 2, Groups E, F, and G hazardous locations, and Nonsparking for Class I, Zone 2 with connections to Class I, Zone 2 hazardous locations in accordance with drawing IS-1.134A.

Certificate issued by:



J. E. Marquedant
Manager, Electrical Systems

11 May 2016

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

SCHEDULE



Canadian Certificate Of Conformity No: FM16CA0042X

11. The marking of the equipment shall include:

For the JRBS-40DC-xR

Class I Division 1, Groups A, B, C, D

Class I, Zone 1, Ex ib [ia Ga] IIC T4 Gb

[Ex ia IIIC Da]

Class I, Division 2, Groups A, B, C, D providing Nonincendive field wiring circuits for Class I, II, or III, Division 2, Groups E, F, or G

Class I, Zone 2, Ex nA [ic] IIC T4 Gc

Ta = -50°C to 70°C

For the JRBS-40TR

Class I, Division 1, Groups A, B, C, D

Class I, Zone 1, Ex ib IIC T4 Gb

Class I, Division 2, Groups A, B, C, D

Class I, Zone 2, Ex nA IIC T4 Gc

Ta = -50°C to 70°C

12. **Description of Equipment:**

General - The JRBS-40DC-xR is a Fieldbus Segment Coupler providing a short-circuit limiter for each connection for up to 12 field devices. The JRBS-40DC-xR can also be daisy chained to allow for additional connections. The number of connections is limited to the maximum power that can be provided. The JRBS-40TR is a line terminator to terminate the final fieldbus coupler.

Ratings – In type of protection intrinsic safety Ex ia, the energy limitation parameters are Vmax (Ui) = 25VDC, Imax = 250mA, Ci = 1.2nF, Li = 0. In type of protection Ex nA [ic], the energy limitation parameters are: Vsupply ≤ 32VDC, Vo = 25VDC, Io = 58mA, Ca = 30nF, La = 0.1mH. For Zone 2 Ex nA installations, the supply parameter is Vsupply ≤ 32VDC. The JRBS-40TR has the following energy limitation parameters: Vmax (Ui) = 25VDC, li = 250mA, Ci = 0.5nF, Li = 0. The ambient operating temperature range is -50°C to 70°C.

JRBS-40DC-aR, Fieldbus Device Couplers

a = Number of Spurs; 4, 6, 8, 10, or 12.

JRBS-40TR, Line Terminator

13. **Specific Conditions of Use:**

1. The equipment shall be installed in an enclosure which provides an ingress protection rating of at least IP20.
2. When installed as Zone 2 equipment, the equipment shall be mounted within a tool-secured enclosure which meets the requirements of ANSI/ISA 60079-0 and ANSI/ISA 60079-15. Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54.

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SCHEDULE



Canadian Certificate Of Conformity No: FM16CA0042X

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
April 11, 2016	Original Issue.
11 th May 2016	<u>Supplement 1:</u> Report Reference: – RR204974 dated 11 th May 2016 Description of the Change: Updated certificate to new format. Transferred ownership from Turck Inc. to Hans Turck.

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CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**

2. **Certificate No:** FM16CA0042X

3. **Equipment:** JRBS-40DC-xR, JRBS-40TR Fieldbus Device Couplers
(Type Reference and Name)

4. **Name of Listing Company:** Hans Turck GmbH & Co KG

5. **Address of Listing Company:** Witzlebenstr 7
45472 Muelheim an der Ruhr
Germany

6. The examination and test results are recorded in confidential report number:

3050534 dated 11th April 2016

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CSA-C22.2 No. 213:R2013, CSA-C22.2 No. 1010-1:2004, CAN/CSA C22.2 No. 60079-0:2011, CAN/CSA C22.2 No. 60079-11:2014, CAN/CSA C22.2 No. 60079-15:2012

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. **Equipment Ratings:**

Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D hazardous locations, Intrinsically Safe for Class I, Zone 1, Group IIC hazardous locations, Intrinsically Safe for Class I, Zone 1 with connections to Group III hazardous locations, Nonincendive for Class I, Division 2, Groups A, B, C, and D with connections to Class II and III, Division 2, Groups E, F, and G hazardous locations, and Nonsparking for Class I, Zone 2 with connections to Class I, Zone 2 hazardous locations in accordance with drawing IS-1.134A.

Certificate issued by:

J.E. Marquedant
Vice President, Manager of Electrical Systems

30 June 2017

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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SCHEDULE



Canadian Certificate Of Conformity No: FM16CA0042X

11. The marking of the equipment shall include:

For the JRBS-40DC-xR

Class I Division 1, Groups A, B, C, D

Class I, Zone 1, Ex ib [ia Ga] IIC T4 Gb

[Ex ia IIIC Da]

Class I, Division 2, Groups A, B, C, D providing Nonincendive field wiring circuits for Class I, II, or III, Division 2, Groups E, F, or G

Class I, Zone 2, Ex nA [ic] IIC T4 Gc

Ta = -50°C to 70°C

For the JRBS-40TR

Class I, Division 1, Groups A, B, C, D

Class I, Zone 1, Ex ib IIC T4 Gb

Class I, Division 2, Groups A, B, C, D

Class I, Zone 2, Ex nA IIC T4 Gc

Ta = -50°C to 70°C

12. **Description of Equipment:**

General - The JRBS-40DC is a Fieldbus Segment Coupler providing a short-circuit limiter for each connection for up to 12 field devices. The JRBS-40DC can also be daisy chained to allow for additional connections. The number of connections is limited to the maximum power that can be provided. The JRBS-40TR is a line terminator to terminate the final fieldbus coupler.

Ratings - In type of protection intrinsic safety Ex ia, the energy limitation parameters are $V_{max} (U_i) = 25VDC$, $I_{max} = 250mA$, $C_i = 1.2nF$, $L_i = 0$. In type of protection Ex nA [ic], the energy limitation parameters are $V_{supply} \leq 25VDC$, $V_o = 25VDC$, $I_o = 58mA$, $C_a = 30nF$, $L_a = 0.1mH$. For Zone 2 Ex nA installations, the supply parameter is $V_{supply} \leq 32VDC$. The JRBS-40TR has the following energy limitation parameters: $V_{max} (U_i) = 25VDC$, $I_i = 250mA$, $C_i = 0.5nF$, $L_i = 0$. The ambient operating temperature range is -50°C to 70°C.

JRBS-40DC-aR, Fieldbus Device Couplers

a = Number of Spurs; 4, 6, 8, 10, or 12.

JRBS-40TR, Line Terminator

13. **Specific Conditions of Use:**

1. The equipment shall be installed in an enclosure which provides an ingress protection rating of at least IP20.
2. When installed as Zone 2 equipment, the equipment shall be mounted within a tool-secured enclosure which meets the requirements of ANSI/ISA 60079-0 and ANSI/ISA 60079-15. Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

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SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0042X

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
11 th April 2016	Original Issue.
11 th May 2016	<u>Supplement 1:</u> Report Reference: – RR204974 dated 11 th May 2016 Description of the Change: Updated certificate to new format. Transferred ownership from Turck Inc. to Hans Turck.
30 th June 2017	<u>Supplement 2:</u> Report Reference: – RR209845 dated 30 th June 2017 Description of the Change: Lower Vsupply from 32V to 25V.

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
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CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

JRBS-40DC-aR, Fieldbus Device Couplers

IS / I / 1 / ABCD / T4 Ta = -50°C to 70°C; Entity – IS-1.134A
I / 1 / Ex ib [ia Ga] IIC T4 Gb Ta = -50°C to 70°C; FISCO – IS-1.134A
[Ex ia IIIC Da]; FISCO – IS-1.134A
NI / I / 2 / ABCD / T4 Ta = -50°C to 70°C; NIFW – IS-1.134A
I / 2 / Ex nA [ic] IIC T4 Gc Ta = -50°C to 70°C; FISCO – IS-1.134A

Entity Parameters:

Vmax = 25V, Imax = 250mA, Ci = 1.2nF, Li = 0H

NIFW Parameters:

Vmax = 25V, Vo = 25V, Io = 58mA, Ca = 30nF, La = 0.1mH

a = Number of Spurs; 4, 6, 8, 10, or 12.

Special Conditions of Use:

1. The equipment shall be installed in an enclosure which provides an ingress protection rating of at least IP20.
2. When installed as Zone 2 equipment, the equipment shall be mounted within a tool-secured enclosure which meets the requirements of CAN/CSA C22.2 No. 60079-0 and CAN/CSA C22.2 No. 60079-15. Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54.

JRBS-40TR, Line Terminator

IS / I / 1 / ABCD / T4 Ta = -50°C to 70°C
I / 1 / Ex ib IIC T4 Gb Ta = -50°C to 70°C
NI / I / 2 / ABCD / T4 Ta = -50°C to 70°C
I / 2 / Ex nA IIC T4 Gc Ta = -50°C to 70°C

Entity Parameters:

Ui = 25VDC, Ii = 250mA, Ci = 0.5nF, Li = 0

Equipment Ratings:

Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D hazardous locations, Intrinsically Safe for Class I, Zone 1, Group IIC hazardous locations, Intrinsically Safe for Class I, Zone 1 with connections to Group III hazardous locations, Nonincendive for Class I, Division 2, Groups A, B, C, and D with connections to Class II and III, Division 2, Groups E, F, and G hazardous locations, and Nonsparking for Class I, Zone 2 with connections to Class I, Zone 2 hazardous locations in accordance with drawing IS-1.134A.

FM Approved for:

Turck Inc
Plymouth, MN

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

CAN/CSA C22.2 No. 213	2013
CAN/CSA C22.2 No. 1010-1	2004
CAN/CSA C22.2 No. 60079-0:11	2011
CAN/CSA C22.2 No. 60079-11:14	2014
CAN/CSA C22.2 No. 60079-15:12	2012

Original Project ID: 0003050534C

Approval Granted: April 11, 2016

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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FM Approvals LLC



J.E. Marquedant

Manager of Electrical Systems

11 April 2016

Date