



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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Certificate No.: IECEx TSA 07.0002X

Issue No: 14

Certificate history:

Issue No. 14 (2018-11-13)

Issue No. 13 (2018-03-21)

Issue No. 12 (2017-05-11)

Issue No. 11 (2016-05-05)

Issue No. 10 (2015-10-06)

Issue No. 9 (2015-07-31)

Issue No. 8 (2012-08-03)

Issue No. 7 (2011-09-13)

Issue No. 6 (2011-05-13)

Issue No. 5 (2010-10-01)

Status: **Current**

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Date of Issue: **2018-11-13**

Applicant: **Austdac Pty Ltd**
Unit 1, 42 Carrington Road
Castle Hill NSW 2154
Australia

Equipment: **Contact Monitoring System Type Dupline 128**

Optional accessory:

Type of Protection: **Intrinsic Safety "ia"**

Marking:
Austdac Pty Ltd
Contact Monitoring System Type Dupline 128
Ex ia I IP54
IECEX TSA 07.0002X
S/N: _____

*Approved for issue on behalf of the IECEx
Certification Body:*

Debbie Wouters

Position:

Acting Quality & Certification Manager

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753
Australia





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Manufacturer: **Austdac Pty Ltd**
Unit 1, 42 Carrington Road
Castle Hill NSW 2154
Australia

Additional Manufacturing location(s):
Dongguan Hubbell Electrical Products Company Limited (DGHAL)
Xincheng Industrial Zone
Hengli Town, Donggaun City
523460, Guangdong
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2000 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition:3.1
IEC 60079-11 : 1999 Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'
Edition:4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

AU/TSA/ExTR08.0009/00	AU/TSA/ExTR08.0020/00	AU/TSA/ExTR08.0021/00
AU/TSA/ExTR08.0064/00	AU/TSA/ExTR09.0064/00	AU/TSA/ExTR11.0015/00
AU/TSA/ExTR11.0031/00	AU/TSA/ExTR12.0032/00	AU/TSA/ExTR13.0045/00
AU/TSA/ExTR16.0010/00	AU/TSA/ExTR18.0005/00	AU/TSA/ExTR18.0025/00

Quality Assessment Report:

AU/ITA/QAR06.0001/12	AU/ITA/QAR15.0002/03
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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Dupline 128 system is an intrinsically safe communications and power system. For details of this system and components, refer to drawing 76-001-19. The system consists of several apparatus connected to a "Dupline loop" that allows transfer of the communication across the apparatus. The voltage on this loop is a maximum of 8.6 V and a maximum power of 2.5 W.

The power source of this loop is a separately certified power supply that provides an intrinsically safe output, or a separately certified barrier, or a Belt Controller 8081. The loop contains several apparatus that are powered from the power in the loop, and also some that have an additional source of intrinsically safe power. However, galvanic isolation between such other source of power and the Dupline loop circuits prevent addition of power and voltage to the Dupline loop.

The Dupline loop may also be extended to further loops using a Repeater A2WCCT1. This Repeater shall be powered from another separately certified power supply with an intrinsically safe output, and this provides power and communication signals to the next loop while providing galvanic isolation from the previous loop.

For further system description, please refer to the Annexe.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annexe of the certificate.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

For Issue 14:

Add SILBUS Universal Bridge type SUB1 to the system.

Annex:

[Annexe_IECEX TSA 07 0002X-14.pdf](#)



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Description (continued):

The system consists of the following apparatus:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081 (TR21388)
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 (TR24906) – 1 unit
- Programmer GAP 1605 (TR24906) – 1 unit
- Zener Limiter AEL1 (TR24906) – 1 unit
- Repeater A2WCCT1 (TR21313) and Repeater SILBUS-A2WCCT2 (AU/TSA/ExTR10.0031/00) mixed – max 4 units; or
Repeater Type SILBUS-A2WCCT2 – 8 units for a single channel generator on same SILBUS network (maximum 32 networks in series).
- 4 channel Analog Transmitter ATX4A (TR21349) – * (see note below)
- 8 channel Digital Transmitter 8084 (TR21355) – * (see note below)
- R1+D1 termination unit or DT01 termination unit (TR24906) – 8 units
- Analog Receiver ARX8A (TR24906) – * (see note below)
- Digital Receiver ARX4D (TR24906) – * (see note below)
- Test Unit GTU8 (TR24906) – 2 units
- Analog Transmitter Type G3210 1161 (TR24906) – * (see note below)
- Temperature Transmitter Type G3210 1112 (TR24906) – * (see note below)
- Digital Transmitter 8023 (TR24906) – * (see note below)
- Safety Transmitter type SILBUS8150 (TR27056-AU/TS/05.073) – * (see note below) and SILBUS – 63 max.
- Tail End Unit type TEU2 (AU/TSA/ExTR07.0059/00) – 1 unit (+ SILBUS – 2 Units)
- Single Channel Digital Transmitter Type SILBUS 8161 (AU/TSA/ExTR10.0041/00) – * (see note below) and SILBUS – 128 max.
- Eight Channel Digital Transmitter Type SILBUS 8163 (AU/TSA/ExTR10.0042/00) – * (see note below) and SILBUS – 128 max.
- Dual Port Channel Generator type GSW1-AC (AU/TSA/ExTR08.0021/00) – ** (see note below)
- Dual Port Channel Generator type GSW1-DC (AU/TSA/ExTR08.0020/00) – ** (see note below)
- Four channel analogue transmitter type SILBUS-TX4A (AU/TSA/ExTR16.0008/00) – 32 units max.
- Four channel analogue receiver type SILBUS-RX4A (AU/TSA/ExTR09.0050/00) – 32 units max.
- Four channel digital transmitter type SILBUS-TX4D (AU/TSA/ExTR09.0048/00) – 32 units max.
- Four channel digital receiver type SILBUS-RX4D (AU/TSA/ExTR09.0051/00) – 32 units max.
- Termination Unit Type SILBUS-OAS1-BEG (AU/TSA/ExTR10.0030/00) – 4 units.
- Termination Unit Type SILBUS-OAS1-END (AU/TSA/ExTR10.0030/00) – 4 units.
- Network Bridge Type SILBUS-SNB1 (AU/TSA/ExTR10.0032/00) – 16 units max.
- Single Channel Temperature Transmitter Type SILBUS-TX1T (AU/TSA/ExTR11.0021/01) – * (see note below)
- Dual Channel Frequency Transmitter Type SILBUS-TX2F (AU/TSA/ExTR11.0022/00) – * (see note below)
- Network Monitor Type SILBUS-SNM1-EOL – 2 units (AU/TSA/ExTR12.0031/00)
- Network Monitor Type SILBUS-SNM1-ELD – 2 units (AU/TSA/ExTR12.0031/00)
- The Uninterruptible Power Supply 12/NMH/288 (IECEX TSA 13.0017X)
- Intrinsically Safe CM Filter type CMF1 (AU/TSA/ExTR14.0002/00)

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- SILBUS Series Resistor type SR1 (AU/TSA/ExTR14.0002/00)
- Display Trip Amplifier type ABBD2 (IECEX MSC 14.0020X)
- 4 Channel Indicator Output Transceiver Type SILBUS-BLIP2 and Multi-colour Indicator Type IND2 (AU/TSA/ExTR16.0001/00)
- SILBUS Modbus Bridge Type SILBUS-MB1 (AU/TSA/ExTR16.0007/00)
- Hand Held Programmer Type HHP1-S (AU/TSA/ExTR17.0014/00)
- SILBUS Universal Bridge type SUB1 (AU/TSA/ExTR18.0014/00)

* Note: The Dupline bus allows any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels is allowable.

** Note: The item GSW1-AC/DC provides a new bus output called "SILBUS". This is described in drawings 120-002-19 and 120-003-19. This connects to the original bus using zener limiter AEL1 shown in 120-003-19.

Drawing list pertaining to Issue 0 of this Certificate:

The following documents were assessed in the course of preparing this certificate. The documents listed give a full and correct specification of the safety aspects of the electrical equipment.


Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
76-001-19	5	Dupline 128 (Silbus) System Details System Wiring	19	2005-12-08
76-130-13	1	Dupline 128 Contact Monitoring System Label Details	1	2007-01-12

Specific Conditions of use pertaining to Issue 0 of this Certificate:

1. It is a condition of manufacture that each infallible transformer shall be subjected to the tests of Clause 11.2 of IEC 60079.11 Standard for Routine Tests.
2. It is a condition of manufacture that the routine High Voltage Test of Clause 11.2 of IEC 60079.11 be applied at 500 V r.m.s. between the intrinsically safe output conductors and earth.
3. It is a condition of safe use that the Controller 8081 has been assessed as an associated equipment under the 'entity' concept. The following parameters must be taken into account during installation:

INPUT PARAMETERS	CONNECTOR K8		
	(i) 115 Vac or 240 Vac Mains Supply		(ii) 24 V ac Power Supply
Maximum Supply Voltage U_m	132.5 V r.m.s.	265 V r.m.s.	132 V r.m.s.
Nominal Supply Voltage U_n	N/A	N/A	24 V (2 x 12 V)

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4. It is a condition of safe use that the Dupline 128 has been assessed as an intrinsically safe system and the following cable parameters must be taken into account during installation:

Between the sources of power and the channel generator DEX 3490 0000 712:

C _{cable}	< 1 μF
L/R _{cable}	< 84 μH/Ω

Between the sources of power and the zener limiter AEL1:

C _{cable}	< 1 μF
L/R _{cable}	< 54 μH/Ω

Total cable parameters after the zener limiter AEL1 or Belt Controller 8081 or Repeater A2WCCT1 supplying the complete Dupline 128 load:

C _{cable}	< 1 μF
L/R _{cable}	< 54 μH/Ω

5. It is a condition of safe use that either the cable for the Dupline 128 shall be a dedicated single cable, or shall have its cores separated by an earthed shield from all other circuits.

Schedule of Variation


Variation permitted by Issue 1:

Safety Transmitter type SILBUS8150 and Tail End Unit type TEU2, which were assessed and tested respectively in TestSafe test reports 27056 and 28760, are added to the system.

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 – 4 units
- 4 channel Analog Transmitter ATX4A – 32 units
- 8 channel Digital Transmitter 8084 – 128 units
- R1+D1 termination unit or DT01 termination unit – 8 units
- Analog Receiver ARX8A – 14 units
- Digital Receiver ARX4D – 16 units
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – 112 units
- Temperature Transmitter Type G3210 1112 – 112 units
- Digital Transmitter 8023 – 128 units
- Safety Transmitter type SILBUS8150 (assessed in test report 27056) – up to 63 units
- Tail End Unit type TEU2 (assessed in test report 28760) – 1 unit

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Specific Conditions of use pertaining to Issue 1 of this Certificate:

The conditions of manufacture and conditions of safe use in Issue 0 of this Certificate remain unchanged.

Drawing list pertaining to Issue 1 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
76-001-19	5	Dupline 128 System Deails System Wiring	20	2007-03-08
76-130-13	1	Dupline 128 Contact Monitoring System Label Details	1	1997-12-12

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Variation permitted by Issue 2:

Single Channel Digital Transmitter Type SILBUS 8161 and Eight Channel Digital Transmitter Type SILBUS 8163 are now to be added to the system. These are assessed for compliance in IECEx test reports AU/TSA/ExTR08.0002/00 and AU/TSA/ExTR08.0003/00. The revised system has been assessed in AU/TSA/ExTR 08.0009/00.

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 – 4 units
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units
- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below)
- Tail End Unit type TEU2 – 1 unit
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below)
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below)

* Note: Any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels is allowable.

Specific Conditions of use pertaining to Issue 2 of this Certificate:

The conditions of manufacture and safe use in Issue 0 of this certificate remain unchanged.

Drawing list pertaining to Issue 2 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
76-001-19	5	Dupline 128 (SILBUS) System Details System Wiring	21	2007-10-23

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Variation permitted by Issue 3:

Optional use of Dual Port Channel Generator type GSW1-AC and Dual Port Channel Generator type GSW1-DC in the Contact Monitoring System Type Dupline 128. They are assessed in test reports AU/TSA/ExTR08.0021 and AU/TSA/ExTR08.0020.

Specific Conditions of use pertaining to Issue 3 of this Certificate:

Input output parameters pertaining to Dual Port Channel Generator type GSW1-AC:

Power Supply input Terminals 36 and 37:

Um = 250 VAC

RS485 Communication Port Terminals 49, 50, 51:

Um = 250 VAC

Relay Contacts, Terminal 53, 54, 55:

Relay Contacts, Terminal 56, 57, 58:

Relay Contacts, Terminal 59, 60, 61:

Relay Contacts, Terminal 62, 63, 64:

Um = 250 VAC

Output Terminals 65, 70:

Um = 250 VAC

Digital Input Terminals 66, 67 and 68, 69:

Um = 250VAC

SILBUS Port 1 and SILBUS Port 2:

Uo = 10.51 V

Ui = 12.6 V

Ci = 0 µF


Li = 0 µH

Io (thermal) = 0.213 A

Io (spark) = Current will depend on the values of R171 and R271 resistors. Refer the table below:

Output Parameters of SILBUS Port 1 and Port 2				
R171/ R271, Ω	Io (spark) Amps	Lo/Ro Ratio µH/Ω Group I	Output Inductance Lo, µH Group I	Output Capacitance Co, µF Group I
0	4.26	42	13	31.5
1	3.05	58	25	
1.5	2.67	66	33	
1.8	2.49	71	38	
2.2	2.28	78	45	
2.7	2.06	86	55	
3.3	1.85	96	68	
4.7	1.49	119	104	

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Output Parameters of SILBUS Port 1 and Port 2				
R171/ R271, Ω	Io (spark) Amps	Lo/Ro Ratio μH/Ω Group I	Output Inductance Lo, μH Group I	Output Capacitance Co, μF Group I
6.8	1.16	152	172	
10	0.87	203	306	
18	0.54	327	788	
27	0.39	459	1561	
33	0.33	545	2194	
39	0.28	627	2911	

Input output parameters pertaining to Dual Port Channel Generator type GSW1-DC:

The power supply input terminals (36, 37):

$U_o = 0\text{ V}$
 $U_i = 12.6\text{ V}$
 $I_i = 3.3\text{ A}$
 $C_i = 0\text{ nF}$
 $L_i = 0\text{ μH}$

RS 485 Communication Port terminals (49, 50, 51):

$U_i = 12.6\text{ V}$
 $I_i = 3.3\text{ A}$
 $C_i = 0\text{ nF}$
 $L_i = 0\text{ μH}$
 $U_o = 5.88\text{ V}$
 $I_o = 9.0\text{ mA}$
 $C_o = 14\text{ μF}$
 $L_o = 1\text{ mH}$

Relay contacts terminals (53, 54, 55), (56, 57, 58), (59, 60, 61), (62, 63, 64):

$U_i = 12.6\text{ V}$
 $I_i = 3.3\text{ A}$
 $C_i = 2.2\text{ nF}$
 $L_i = 0\text{ μH}$


Field Supply terminals (65, 70):

$U_i = 0\text{ V}$
 $U_o = 12.6\text{ V}$
 $I_o = 40\text{ mA}$
 $L_o = 1\text{ mH}$
 $C_o = 14\text{ μF}$
 $L_o/R_o = 1\text{ mH/Ω}$

Input-1 (66, 67) and Input-2 (68, 69):

$U_i = 12.6\text{ V}$
 $I_i = 3.3\text{ A}$
 $C_i = 0\text{ nF}$
 $L_i = 0\text{ mH}$

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SILBUS Port 1 (1, 2) and SILBUS Port 2 (34, 35):

$U_o = 10.51 \text{ V}$

$U_i = 12.6 \text{ V}$

$C_i = 0 \text{ }\mu\text{F}$


$L_i = 0 \text{ }\mu\text{H}$

$I_o \text{ (thermal)} = 0.213 \text{ A}$

$I_o \text{ (spark)} = \text{Current will depend on the values of R171 and R271 resistors. Refer the table below:}$

Output Parameters of SILBUS Port 1 and Port 2				
R171 / R271 Ω ,	I_o (spark) Amps	Lo/Ro Ratio $\mu\text{H}/\Omega$	Output Inductance L_o , μH	Output Capacitance C_o , μF
		Group I	Group I	Group I
0	4.26	42	13	31.5
1	3.05	58	25	
1.5	2.67	66	33	
1.8	2.49	71	38	
2.2	2.28	78	45	
2.7	2.06	86	55	
3.3	1.85	96	68	
4.7	1.49	119	104	
6.8	1.16	152	172	
10	0.87	203	306	
18	0.54	327	788	
27	0.39	459	1561	
33	0.33	545	2194	
39	0.28	627	2911	

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Drawing list pertaining to Issue 3 of this Certificate:

Following drawings represent Dual Port Channel Generator type GSW1-AC:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
		RTC Backup Battery Type 3/Li/160 PCB0203A		
61-141-03	01	RTC Backup Battery Type 3/Li/160 PCB0203A Schematic Diagram	01	2005-07-12
61-142-21	03	RTC Backup Battery Type 3/Li/160 PCB0203A Artwork Details	01	2005-07-12
61-143-14	02	RTC Backup Battery Type 3/Li/160 Bill of Materials	04	2007-11-13
61-144-04	01	RTC Backup Battery Type 3/Li/160 Assembly Details	01	2006-05-25
61-145-13	01	RTC Backup Battery Type 3/Li/160 Label Details	02	2008-02-14
		Universal Non I.S. LCD Holder Type LDH1 PCB 0189A		
51-011-03	01	Non I.S. LCD Holder Type LDH1 PCB0189A PE12864LRF-001-HC1 Schematic Diagram	01	2007-05-28
51-012-21	03	Non I.S. LCD Holder Type LDH1 PCB0189A Artwork Details	01	2005-01-31
51-013-14	02	Non I.S. LCD Holder Type LDH1 PCB0189 Bill of Material	01	2006-07-28
51-014-07	01	Non I.S. LCD Holder Type LDH1 PCB0189A Component Loading Diagram	01	2007-05-28
		Universal LDGA70.1 Label PCB PCB0186A		
120-024-13	01	Dual Port Channel Generator Type GSW1 Label Details	02	2007-08-14
120-025-14	02	Dual Port Channel Generator Label/Keyboard Type GSW1 Bill Of Materials	02	2007-08-15
120-028-07	01	Dual Port Channel Generator Type GSW1 LDGA70.1 Label PCB0186A Component Loading Diagram	01	2007-05-28
111-051-03	01	Universal LDGA70.1 Label PCB PCB0186A Schematic Diagram	01	2006-01-06
111-052-21	03	Universal Label PCB Type LDGA70.1 PCB0186A Artwork Details	04	2007-05-28

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Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
		Universal LDG-A70 AC Input PSU & I/O Board Type PIDB1 PCB0185		
111-091-03	01	Universal LDG-A70 AC Input PSU & I/O Board Type PIDB1 PCB0185 Schematic Diagram	04	2007-05-31
111-092-21	03	PCB0185A Type PIDB1 Universal LDG-A70 AC Input PSU & I/O	04	2007-05-29
111-093-14	05	Universal LDG-A70 AC Input PSU & I/O Type PIDB1 PCB0185 Bill Of Materials	06	2007-09-17
111-094-06	01	Type PIDB1 U61 Heatsink Mechanical Details	02	2005-07-25
111-097-07	02	Universal LDG-A-70 AC Input PSU & I/O PCB0185A Component Loading Diagram	01	2007-05-31
76-265-04	02	24V Mains Transformer P/N: TFMR026 Assembly Details	02	2003-01-28
		Dual Port Channel Generator Type GSW1 PCB0201A		
120-011-03	02	Dual Port Channel Generator Type GSW1 PCB0201A Schematic Diagram	04	2008-04-04
120-012-21	05	Dual Port Channel Generator Type GSW1 PCB0201A Artwork Details	06	2008-03-31
120-013-14	04	Dual Port Channel Generator Type GSW1 PCB0201A Bill Of Material	06	2008-04-04
120-016-07	02	Dual Port Channel Generator Type GSW1 PCB0201A Component Loading Diagram	04	2008-04-07
120-099-37	03	Dual Port Channel Generator Type GSW1 Model Selection List	01	2008-03-20
		Insulating Spacer Mechanical Details		
120-096-06	01	Dual Port Channel Generator Type GSW1 PCB0185 Insulating Spacer Mechanical Details	01	2008-03-19
120-098-06	01	Dual Port Channel Generator Type GSW1 PCB0201 Insulating Spacer Mechanical Details	01	2008-03-19
120-017-04	01	Dual Port Channel Generator Type GSW1- AC Assembly Details	03	2008-04-30
		Block Diagram		
120-014-02	01	Dual Port Channel Generator Type GSW1- AC and GSW1- DC Construction Block Diagram	01	2006-06-01
120-001-19	06	SILBUS Fieldbus Certification System Diagram	02	2007-10-23

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Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
120-019-14	02	Dual Port Channel Generator Type GSW1- AC Bill of Materials	03	2008-04-09
120-095-13	01	Dual Port Channel Generator Type GSW1 Certification Labels Label Details	02	2008-05-20

Following drawings represent Dual Port Channel Generator type GSW1-DC:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
		RTC Backup Battery Type 3/Li/160 PCB0203A		
61-141-03	01	RTC Backup Battery Type 3/Li/160 PCB0203A Schematic Diagram	01	2005-07-12
61-142-21	03	RTC Backup Battery Type 3/Li/160 PCB0203A Artwork Details	01	2005-07-12
61-143-14	02	RTC Backup Battery Type 3/Li/160 Bill of Materials	04	2007-11-13
61-144-04	01	RTC Backup Battery Type 3/Li/160 Assembly Details	01	2006-05-25
61-145-13	01	RTC Backup Battery Type 3/Li/160 Label Details	02	2008-02-14
		DC/DC Converter Type DC3W		
66-114-03	01	I.S. Boost PSU Type DC3W PCB0204 Schematic Diagram	03	2008-02-04
66-115-21	05	Intrinsically Safe Boost PSU Type DC3W PCB0204A Artwork Details	03	2008-01-07
66-116-14	02	Intrinsically Safe Boost Power Supply Type DC3W Bill of Materials	04	2008-01-07
66-117-07	01	I.S. Boost Power Supply Type DC3W Component Loading Diagram	03	2008-01-07
66-118-04	01	I.S. Boost Power Supply Type DC3W Assembly Details	01	2007-05-28
66-119-13	01	I.S. Boost Power Supply Type DC3W Label Details	01	2007-05-28
66-124-06	01	I.S. Boost Power Supply Type DC3W Encapsulation Details	01	2007-05-28

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Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
		Universal I.S. LCD Holder Type LDH2 PCB 0189A		
51-031-03	01	I.S. LCD Holder Type LDH2 PCB0212A PE12864LRF-001-HC1 Schematic Diagram	03	2008-03-31
51-032-21	03	I.S. LCD Holder Type LDH2 PCB0212A Artwork Details	02	2007-01-31
51-033-14	02	I.S. LCD Holder Type LDH2 Bill of Materials	03	2008-03-31
51-034-07	01	I.S. LCD Holder Type LDH2 PCB0212A Component Loading Diagram	02	2008-04-04
		Dual Port SILBUS Channel Generator Type GSW1 Keyboard/ Label PCB0186A		
120-024-13	01	Dual Port Channel Generator Type GSW1 Label Details	02	2007-08-14
120-025-14	02	Dual Port Channel Generator Label/Keyboard Type GSW1 Bill Of Materials	02	2007-08-15
120-028-07	01	Dual Port Channel Generator Type GSW1 LDGA70.1 Label PCB0186A Component Loading Diagram	01	2007-05-28
111-051-03	01	Universal LDGA70.1 Label PCB PCB0186A Schematic Diagram	01	2006-01-06
111-052-21	03	Universal Label PCB Type LDGA70.1 PCB0186A Artwork Details	04	2007-05-28
		Dual Port Channel Generator Type GSW1 PCB0201A		
120-011-03	02	Dual Port Channel Generator Type GSW1 PCB0201A Schematic Diagram	04	2008-04-04
120-012-21	05	Dual Port Channel Generator Type GSW1 PCB0201A Artwork Details	06	2008-03-31
120-013-14	04	Dual Port Channel Generator Type GSW1 PCB0201A Bill Of Materials	06	2008-04-04
120-016-07	02	Dual Port Channel Generator Type GSW1 PCB0201A Component Loading Diagram	04	2008-04-07
120-099-37	03	Dual Port Channel Generator Type GSW1 Model Selection List	01	2008-03-20
		Universal LDG-A-70 DC Input PSU And I/O Type PIDB2		
111-111-03	01	Universal LDG-A70 DC Input PSU & I/O Type PIDB2 PCB0205 Schematic Diagram	03	2008-04-04
111-112-21	03	PCB0205A Type PIDB2 Universal LDG-A70 DC Input PSU & I/O Artwork Details	03	2007-01-19
111-113-14	03	Universal LDG-A-70 DC Input PSU and I/O Type PIDB2 PCB0205 Bill Of Materials	06	2008-04-04
111-114-07	01	Universal LDG-A-70 DC Input PSU & I/O PCB0205 Component Loading Diagram	03	2008-04-04

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I.S. Relay SPCO Type ARWP2				
56-028-03	01	Type ARWP2 I.S. Relay PCB0116A Schematic Diagram	04	2004-05-31
56-030-21	03	ARWP2 I.S. Relay SPCO Artwork Details	03	2003-04-10
56-032-14	02	ARWP2 I.S. Relay SPCO Bill Of Materials	05	2007-09-13
56-034-04	01	ARWP2 I.S. Relay SPCO Assembly Diagram	04	2003-04-04
56-036-13	01	ARWP2 I.S. Relay SPCO Label Details	02	2007-09-13
56-048-11	01	ARWP2 I.S. Relay SPCO Specification	01	2007-03-16
Insulating Spacer Mechanical Details				
120-097-06	01	Dual Port Channel Generator Type GSW1 PCB0205 Insulating Spacer Mechanical Details	01	2008-03-19
120-098-06	01	Dual Port Channel Generator Type GSW1 PCB0201 Insulating Spacer Mechanical Details	01	2008-03-19
120-018-04	01	Dual Port Channel Generator Type GSW1- DC Assembly Details	03	2008-04-30
Block Diagrams and System Diagrams				
120-014-02	01	Dual Port Channel Generator Type GSW1- AC and GSW1- DC Construction Block Diagram	01	2006-06-01
120-001-19	06	SILBUS Fieldbus Certification System Diagram	02	2007-10-23
120-020-14	02	Dual Port Channel Generator Type GSW1- DC Bill of Materials	02	2008-04-09
120-095-13	01	Dual Port Channel Generator Type GSW1 Certification Labels Label Details	02	2008-05-20


Variation permitted by Issue 4:

Dual Port Channel Generator type GSW1-AC and Dual Port Channel Generator type GSW1-DC are now to be added to the system. These are assessed for compliance in IECEx test reports AU/TSA/ExTR 08.0021/00 and AU/TSA/ExTR 08.0020/00. The system has been assessed in AU/TSA/ExTR 08.0064/00.

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960

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- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 – 4 units
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units
- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below)
- Tail End Unit type TEU2 – 1 unit
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below)
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below)
- Dual Port Channel Generator type GSW1-AC – ** (see note below)
- Dual Port Channel Generator type GSW1-DC – ** (see note below)

* Note: Any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels is allowable.

** Note: The Dual Ported Channel Generator Type GSW1-xx has a maximum database of 128 channels for both ports combined. Using one channel on one port uses the same channel on the other port.


Specific Conditions of use pertaining to Issue 4 of this Certificate:

The conditions of manufacture and safe use in Issue 0 of this certificate remain unchanged.

Drawing list pertaining to Issue 4 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
76-001-19	5	Dupline 128 (SILBUS) System Details System Wiring	21	2007-10-23
120-001-19	3	SILBUS Fieldbus Controllers Certification System Diagram	03	2008-10-29
120-002-19	4	SILBUS Fieldbus Loads Certification System Diagram	01	2008-10-29
120-003-19	1	SILBUS Fieldbus Barriers Certification System Diagram	01	2008-10-29

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Variation permitted by Issue 5:

The following modules are now to be added to the system:

- Four channel analogue transmitter type SILBUS-TX4A (see report 31699 – AU/TSA/ExTR 09.0049/00)
- Four channel analogue receiver type SILBUS-RX4A (see report 31726 – AU/TSA/ExTR 09.0050/00)
- Four channel digital transmitter type SILBUS-TX4D (see report 31730 – AU/TSA/ExTR 09.0048/00)
- Four channel digital receiver type SILBUS-RX4D (see report 31734 – AU/TSA/ExTR 09.0051/00)

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 – 4 units
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units
- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below) and SILBUS – 63 max.
- Tail End Unit type TEU2 – 1 unit (+ SILBUS – 2 Units)
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below) and SILBUS – 128 max.
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below) and SILBUS – 128 max.
- Dual Port Channel Generator type GSW1-AC – ** (see note below)
- Dual Port Channel Generator type GSW1-DC – ** (see note below)
- Four channel analogue transmitter type SILBUS-TX4A – 32 units max.
- Four channel analogue receiver type SILBUS-RX4A – 32 units max.
- Four channel digital transmitter type SILBUS-TX4D – 32 units max.
- Four channel digital receiver type SILBUS-RX4D – 32 units max.

* Note: The Dupline bus allows any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels is allowable.

** Note: The item GSW1-AC/DC provide a new bus output called "SILBUS". This is described in drawings 120-002-19 and 120-003-19. This connects to the original bus using zener limiter AEL1 shown in 120-003-19.

Specific Conditions of use pertaining to Issue 5 of this Certificate:

The conditions of manufacture and safe use in Issue 0 of this certificate remain unchanged.

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Drawing list pertaining to Issue 5 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
120-002-19	5	SILBUS Fieldbus Loads Certification System Diagram	03	2010-09-13
120-191-19	1	SILBUS 4 Channel Analogue Transmitter Type SILBUS-TX4A Connection System Diagram	04	2010-09-07
120-211-19	1	SILBUS 4 Channel Analogue Receiver Type SILBUS-RX4A Connection System Diagram	04	2010-09-27
120-231-19	1	SILBUS 4 Channel Digital Transmitter Type SILBUS-TX4D Connection System Diagram	05	2010-09-27
120-251-19	1	SILBUS 4 Channel Digital Receiver Type SILBUS-RX4D Connection System Diagram	04	2010-09-27


Variation permitted by Issue 6:

1. Single Channel Digital Transmitter Type SILBUS8161 inserted a reset chip IC3 to the pin 7 of IC2 in Drawing 120-101-03. This was assessed in Test Report AU/TSA/ExTR10.0041/00 (TR32507).
2. Eight Channel Digital Transmitter Type SILBUS8163 inserted a reset chip IC3 to the pin 7 of IC1 in Drawing 120-121-03. This was assessed in Test Report AU/TSA/ExTR10.0042/00 (TR32508).
3. The following modules are now to be added to the system:
 - Termination Unit Type SILBUS-OAS1 (see report 32412 – AU/TSA/ExTR 10.0030/00)
 - Repeater Type SILBUS-A2WCCT2 (see report 32413 – AU/TSA/ExTR 10.0031/00)
 - Network Bridge Type SILBUS-SNB1 (see report 32414 – AU/TSA/ExTR 10.0032/00)

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 and Repeater SILBUS-A2WCCT2 mixed – max 4 units; or Repeater Type SILBUS-A2WCCT2 – 8 units for a single channel generator on same SILBUS network (maximum 32 networks in series).
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units

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- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below) and SILBUS – 63 max.
- Tail End Unit type TEU2 – 1 unit (+ SILBUS – 2 Units)
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below) and SILBUS – 128 max.
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below) and SILBUS – 128 max.
- Dual Port Channel Generator type GSW1-AC – ** (see note below)
- Dual Port Channel Generator type GSW1-DC – ** (see note below)
- Four channel analogue transmitter type SILBUS-TX4A – 32 units max.
- Four channel analogue receiver type SILBUS-RX4A – 32 units max.
- Four channel digital transmitter type SILBUS-TX4D – 32 units max.
- Four channel digital receiver type SILBUS-RX4D – 32 units max.
- Termination Unit Type SILBUS-OAS1-BEG – 4 units.
- Termination Unit Type SILBUS-OAS1-END – 4 units.
- Network Bridge Type SILBUS-SNB1 – 16 units max.

* Note: The Dupline bus allows any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels is allowable.

** Note: The item GSW1-AC/DC provides a new bus output called “SILBUS”. This is described in drawings 120-002-19 and 120-003-19. This connects to the original bus using zener limiter AEL1 shown in 120-003-19.


Specific Conditions of use pertaining to Issue 6 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Drawing list pertaining to Issue 6 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
120-002-19	5	SILBUS Fieldbus Loads Certification System Diagram	04	2011-02-25
120-003-19	1	SILBUS Fieldbus Barriers Certification System Diagram	03	2011-02-25
120-004-19	2	SILBUS Fieldbus Repeater & Bridge Certification System Diagram	01	2010-09-13
120-151-19	1	SILBUS Network Bridge Type SILBUS-SNB1 Connection System Diagram	01	2011-02-25
120-324-19	1	SILBUS Repeater Type SILBUS-A2WCCT2 Connection System Diagram	02	2011-05-06
120-342-19	1	SILBUS Termination Unit Type SILBUS-OAS1 Connection System Diagram	03	2011-02-25

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Variation permitted by Issue 7:

The following modules are now to be added to the system:

1. Single Channel Temperature Transmitter type SILBUS-TX1T, assessed in TestSafe test report 32862, AU/TSA/ExTR11.0021/00. Maximum of 112 modules can be connected to the system.
2. Dual Channel Frequency Transmitter type SILBUS-TX2F, assessed in TestSafe test report 32863, AU/TSA/ExTR11.0022/00. Maximum of 112 modules can be connected to the system.

The system has been assessed in test report 33047, AU/TSA/ExTR11.0031/00.

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 and Repeater SILBUS-A2WCCT2 mixed – max 4 units; or Repeater Type SILBUS-A2WCCT2 – 8 units for a single channel generator on same SILBUS network (maximum 32 networks in series).
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units
- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below) and SILBUS – 63 max.
- Tail End Unit type TEU2 – 1 unit (+ SILBUS – 2 Units)
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below) and SILBUS – 128 max.
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below) and SILBUS – 128 max.
- Dual Port Channel Generator type GSW1-AC – ** (see note below)
- Dual Port Channel Generator type GSW1-DC – ** (see note below)
- Four channel analogue transmitter type SILBUS-TX4A – 32 units max.
- Four channel analogue receiver type SILBUS-RX4A – 32 units max.
- Four channel digital transmitter type SILBUS-TX4D – 32 units max.
- Four channel digital receiver type SILBUS-RX4D – 32 units max.
- Termination Unit Type SILBUS-OAS1-BEG – 4 units.
- Termination Unit Type SILBUS-OAS1-END – 4 units.
- Network Bridge Type SILBUS-SNB1 – 16 units max.
- Single Channel Temperature Transmitter Type SILBUS-TX1T– * (see note below)
- Dual Channel Frequency Transmitter Type SILBUS-TX2F– * (see note below)

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* Note: The Dupline bus allows any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels.

** Note: The item GSW1-AC/DC provides a new bus output called "SILBUS". This is described in drawings 120-002-19 and 120-003-19. This connects to the original bus using zener limiter AEL1 shown in 120-003-19.

Specific Conditions of use pertaining to Issue 7 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Drawing list pertaining to Issue 7 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
120-002-19	5	SILBUS Fieldbus Loads Certification System Diagram	05	2011-07-11
120-362-19	1	SILBUS Single Channel Temperature Transmitter Type SILBUS-TX1T Connection System Diagram	02	2011-07-12
120-382-19	1	SILBUS Dual Channel Frequency Transmitter Type SILBUS-TX2F Connection System Diagram	03	2011-07-12

Variation permitted by Issue 8:

The following modules are now to be added to the system:


- SILBUS Network Monitor Type SILBUS-SNM1-EOL and SILBUS-SNM1-ELD, assessed in TestSafe test report 33693 (AU/TSA/ExTR 12.0031/00)

The system has been assessed in test report 33694, AU/TSA/ExTR12.0032/00.

The updated list of system modules is:

- Separately certified power supplies that provide intrinsically safe output according to the notes given in drawing 76-001-19
- Belt Controller 8081
- Separately certified Barrier Z960
- Channel Generator DEX 3490 0000 712 – 1 unit
- Programmer GAP 1605 – 1 unit
- Zener Limiter AEL1 – 1 unit
- Repeater A2WCCT1 and Repeater SILBUS-A2WCCT2 mixed – max 4 units; or Repeater Type SILBUS-A2WCCT2 – 8 units for a single channel generator on same SILBUS network (maximum 32 networks in series).
- 4 channel Analog Transmitter ATX4A – * (see note below)
- 8 channel Digital Transmitter 8084 – * (see note below)
- R1+D1 termination unit or DT01 termination unit – 8 units

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- Analog Receiver ARX8A – * (see note below)
- Digital Receiver ARX4D – * (see note below)
- Test Unit GTU8 – 2 units
- Analog Transmitter Type G3210 1161 – * (see note below)
- Temperature Transmitter Type G3210 1112 – * (see note below)
- Digital Transmitter 8023 – * (see note below)
- Safety Transmitter type SILBUS8150 – * (see note below) and SILBUS – 63 max.
- Tail End Unit type TEU2 – 1 unit (+ SILBUS – 2 Units)
- Single Channel Digital Transmitter Type SILBUS 8161 – * (see note below) and SILBUS – 128 max.
- Eight Channel Digital Transmitter Type SILBUS 8163 – * (see note below) and SILBUS – 128 max.
- Dual Port Channel Generator type GSW1-AC – ** (see note below)
- Dual Port Channel Generator type GSW1-DC – ** (see note below)
- Four channel analogue transmitter type SILBUS-TX4A – 32 units max.
- Four channel analogue receiver type SILBUS-RX4A – 32 units max.
- Four channel digital transmitter type SILBUS-TX4D – 32 units max.
- Four channel digital receiver type SILBUS-RX4D – 32 units max.
- Termination Unit Type SILBUS-OAS1-BEG – 4 units.
- Termination Unit Type SILBUS-OAS1-END – 4 units.
- Network Bridge Type SILBUS-SNB1 – 16 units max.
- Single Channel Temperature Transmitter Type SILBUS-TX1T– * (see note below)
- Dual Channel Frequency Transmitter Type SILBUS-TX2F– * (see note below)
- Network Monitor Type SILBUS-SNM1-EOL – 2 units
- Network Monitor Type SILBUS-SNM1-ELD – 2 units

* Note: The Dupline bus allows any combination of Digital Transmitters up to a maximum of 128 channels, or any combination of Digital and Analog Transmitters up to a maximum of 112 channels.

** Note: The item GSW1-AC/DC provides a new bus output called “SILBUS”. This is described in drawings 120-002-19 and 120-003-19. This connects to the original bus using zener limiter AEL1 shown in 120-003-19.


Specific Conditions of use pertaining to Issue 8 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Drawing list pertaining to Issue 8 of this Certificate:

Drawing/ Document Number:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
120-002-19	5	SILBUS Fieldbus Loads Certification System Diagram	06	2011-10-18

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Variations permitted by Issue 9 of this Certificate:

Dongguan Hubbell Electrical Products Company Limited is added as a new manufacturing site.

Specific Conditions of use pertaining to Issue 9 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Variation permitted by Issue 10:

The following modules are now to be added to the system:

- The Uninterruptible Power Supply 12/NMH/288 (see Certificate – IECEx TSA 13.0017X)
- Intrinsically Safe CM Filter type CMF1 (see Report AU/TSA/ExTR14.0002/00)
- SILBUS Series Resistor type SR1 (see Report AU/TSA/ExTR14.0002/00)
- Display Trip Amplifier type ABBD2 (see Certificate – IECEx MSC 14.0020X)

The system has been assessed in test report 34444, AU/TSA/ExTR13.0045/00.

Specific Conditions of use pertaining to Issue 10 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Drawing list pertaining to Issue 10 of this Certificate:

Document No.	No. of sheets	Document Title	Issue	Date (yyyy/mm/dd)
120-002-19	5	SILBUS Fieldbus Loads Certification System Diagram	07	2015-08-05
61-164-19	1	Intrinsically Safe Ex ia UPS Type 12/NMH/288 Connection System Diagram	02	2014-11-17
120-003-19	2	SILBUS Fieldbus Barriers Certification System Diagram	04	2014-09-19
13-365-19	2	Display Trip Amplifier type ABBD2 Connection System Diagram	01	2015-08-04

Variation permitted by Issue 11:

The following modules are now to be added to the system:


- Intrinsically Safe 4 Channel Indicator Output Transceiver Type SILBUS-BLIP2 and Intrinsically Safe Multi-colour Indicator Type IND2 (see Report AU/TSA/ExTR16.0001/00)
- SILBUS Modbus Bridge Type SILBUS-MB1 (see Report AU/TSA/ExTR16.0007/00)

The following modules are modified in the system:

- Single Transmitter Type SILBUS-TX1T (see Report AU/TSA/ExTR11.0021/01)
- 4 Channel Analogue Transmitter Type SILBUS-TX4A (see Report AU/TSA/ExTR16.0008/00)

The system has been assessed in test report 35509, AU/TSA/ExTR16.0010/00.

Certificate issued by:

	TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia
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IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 07.0002X	Issue No.:	14
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Specific Conditions of use pertaining to Issue 11 of this Certificate:

The conditions of manufacture and safe use in earlier issues of this certificate remain unchanged.

Drawing list pertaining to Issue 11 of this Certificate:

Document No.	No. of sheets	Document Title	Issue	Date (yyyy/mm/dd)
120-002-19	6	SILBUS Fieldbus Loads Certification System Diagram	08	2016-03-17
120-525-19	1	I.S. SILBUS 4 Channel Indicator Output Transceiver type SILBUS-BLIP2 Connection System Diagram	01	2016-02-19
120-665-19	2	SILBUS Modbus to SILBUS Bridge Type SILBUS-MB1 Connection System Diagram	01	2016-03-16
120-191-19	1	SILBUS 4 Channel Analogue Transmitter Type SILBUS-TX4A Connection System Diagram	06	2016-01-05

Variation permitted by Issue 12:

- Change of both Applicant address and Manufacturer address from
 "1 / 4 Packard Avenue, Castle Hill, NSW 2154, Australia"
 To
 "Unit 1, 42 Carrington Road, Castle Hill, NSW 2154, Australia"

Specific Conditions of use pertaining to Issue 12 of this Certificate:

No changes. The previous conditions still apply.

Variation permitted by Issue 13:

The following device is now to be added to the system:

- Hand Held Programmer Type HHP1-S, assessed in TestSafe test report 36092. (AU/TSA/ExTR17.0014/00)

Refer Instruction manual 120-769-12 for specific conditions of use for the Hand Held Programmer Type HHP1-S.

The system has been assessed in test report 36244, AU/TSA/ExTR18.0005/00.

Specific Conditions of use pertaining to Issue 13 of this Certificate:

No changes. The previous conditions still apply.

For Hand Held Programmer Type HHP1-S, the following conditions apply:

- The batteries can only be removed or replaced in the non-hazardous area.
- The Hand Held programmer shall be used with the protection leather case.
- Only the following primary batteries shall be used with the HHP1-S

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IECEX Certificate of Conformity Annexe

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- VARTA LONGLIFE ALKALINE LR6 Type 4106
 - VARTA HIGH ENERGY ALKALINE LR6 Type 4906
 - PROCELL ALKALINE LR6 Type PC1500
 - DURACELL COPPERTOP ALKALINE LR6 Type MN1500
4. The micro SD card must only be removed or installed in the non-hazardous area.

Drawing list pertaining to Issue 13 of this Certificate:

Document No.	No. of sheets	Document Title	Issue	Date (yyyy/mm/dd)
120-002-19	6	SILBUS Fieldbus Loads Certification System Diagram	09	2018-02-02

Variation permitted by Issue 14:

The following device is now to be added to the system:

- SILBUS Universal Bridge type SUB1, assessed in TestSafe test report 36343. (AU/TSA/ExTR18.0014/00) which includes the list of drawing for this device.

The SILBUS-SUB1 has following parameters:

SILBUS Input (TB1, TB2) Input voltage U_i 16.5 V Input current I_i 3.3 A Internal capacitance C_i 0 μ F Internal inductance L_i 0 mH Output voltage U_o 0 V Output current I_o 0 A	Power Input (TB3, TB4) Input voltage U_i 16.5 V Input current I_i 3.3 A Internal capacitance C_i 0 μ F Internal inductance L_i 0 mH Output voltage U_o 0 V Output current I_o 0 A
MODBUS Input (TB16 – TB18) Maximum voltage U_m 265 V Input voltage U_i 16.5 V Input current I_i 3.3 A Internal capacitance C_i 0 μ F Internal inductance L_i 0.75 mH Output voltage U_o 6.88 V Output current I_o 100 mA External capacitance C_o 10 μ F External inductance/resistance ratio L_o/R_o 2.3 mH/ Ω	Ethernet port (X101) Maximum voltage U_m 265 V Input voltage U_i 16.5 V Input current I_i 3.3 A Input power P_i 1 W Internal capacitance C_i 0.242 μ F Internal inductance L_i 0 mH Output voltage U_o 6.88 V Output current I_o 511 mA External capacitance C_o 60 μ F External inductance L_o 1.5 mH
Console port (X60) Input voltage U_i 5.88 V Input current I_i 3.3 A Output voltage U_o 5.88 V Output current I_o 185 mA External capacitance C_o 10 μ F External inductance L_o 13 mH	

The SILBUS-SUB1 requires a host enclosure providing ingress protection to minimum IP54.

Certificate issued by:

	<p style="margin: 0;">TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia</p>
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IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 07.0002X	Issue No.:	14
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Refer Instruction manual 120-621-12 for specific conditions of use for the SILBUS Universal Bridge type SUB1.

The system has been assessed in test report 36438, AU/TSA/ExTR18.0025/00.

Specific Conditions of use pertaining to Issue 14 of this Certificate:

No changes for port parameters. The previous conditions still apply.

For SILBUS-SUB1:

1. The equipment must be installed in a host enclosure which provides a minimum of IP54 ingress protection and suitable for Group I.
2. Um = 265 V only be used in safe area.

Drawing list pertaining to Issue 14 of this Certificate:

Document No.	No. of sheets	Document Title	Issue	Date (yyyy/mm/dd)
120-002-19	6	SILBUS Fieldbus Loads Certification System Diagram	10	2018-08-13
120-624-19	1	SILBUS Universal Bridge Type SILBUS-SUB1 Connection System Diagram	01	2018-08-14

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