

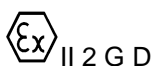


EU Type Examination Certificate CML 15ATEX3203X Issue 10

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **470-Z1 and 490-Z1 HMI Modules**
- 3 Manufacturer **HMI Elements Limited**
- 4 Address **Unit A&B,
Windmill Industrial Estate, Malton,
North Yorkshire,
YO17 6BT
United Kingdom**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, 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 equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

| | | |
|---------------------|------------------|--------------------------|
| EN 60079-0:2018 | EN 60079-11:2012 | EN 60079-18:2015/A1:2017 |
| EN 60079-28:2015 | EN 60079-31:2014 | EN 60079-7:2015/A1:2018 |
| Ref EN 60079-1:2007 | | |
- 10 The equipment shall be marked with the following:



II 2 G D

Ex eb ib mb IIC T4 Gb

Ex tb IIIC T135°C Db

Ta= Up to -40°C to +60°C



II 2 (2) G D

See description for
alternative marking and
ambient options





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11 Description

The 470-Z1 and 490-Z1 are mains supplied, transportable hazardous area computers with a touchscreen and keypad control interface, as well as optional keyboard/mouse, USB, Wi-Fi, Ethernet or Optical interface connections. An internal USB connection point is provided for software updates in safe area use.

The 470-Z1 and 490-Z1 consist of an aluminium enclosure, which has the supply / interface connections either via the bottom side or enclosure back panel.

The 470-Z1 and 490-Z1 consist of three main parts, an increased safety terminal/connection section, an encapsulation hinged lid section and an encapsulated section in the base. The encapsulated section in the base is designed with 3 replaceable encapsulated modules for the model 490-Z1 while it is only one encapsulated block for model 470-Z1.

The increased safety section interfaces the input and output connections (when fitted) via separately certified terminals and intrinsically safe connections.

The encapsulated sections in the base contain the power supply, the computer processor, hard drive, memory and interface circuits, as well as the intrinsically safe barrier and limiting circuits for the optional Wi-Fi, USB, Ethernet LAN and optical peripheral communications.

The lid section contains the low power projected capacitance touchscreen, LCD panel adaptor, touchscreen controller, back light LEDs. The lid section also includes two keypads, indicating LEDs and the keypad encoder board.

External connections

- The mains input supply will be via either a separately approved in-line connector or cable gland (various options).
- The external keyboard/mouse interface (when fitted) is provided by a PS/2 connector and protected by an Intrinsically Safe Zener barrier with entity parameters shown in Table 1 below.
- One Ethernet port (when fitted) is provided by either:
 - Non-Intrinsically safe 10/100/1000 Mbps - a separately certified connector or cable gland.
 - 10/100 Mbps – an Ex d socket, entity parameters shown in Table 4
 - Ex ia (IS993 galvanically isolated) Copper 10/100 Mbps – Ex d socket or gland, entity parameters shown in Table 3
- One Fibre-optic (when fitted) is provided by either:
 - Energy limited (op is) optical – an optical connector, entity parameters shown in Table 5
- Optionally, one Wi-Fi modules will be provided via a N-type socket:
 - Ex ia (IS752 or iSOLATE501 barrier), WiFi 2.4GHz Zcomax
 - Ex ia (IS752 or iSOLATE501 barrier), WiFi 2.4GHz Zigbee
 - Ex ia (IS752 or iSOLATE501 barrier), WiFi 2.4GHz + 5GHz Sparklan
- Optionally, one of the following external USB is provided:
 - USB2.0 – a separately certified, ROTA DR4/DE2 Ex d USB memory stick/connector (Gas atmospheres only), CEAG Exlink, or Hawke ControlEx/InstrumEx connectors
 - USB2.0 – Fischer 103 core series connection (Safe area use only).
- Optional, RS232 port, via a separately certified gland or connector.
- Optional Bluetooth 2.0 + EDR. Transmitter is located under the lid encapsulation behind left hand keypad.



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Some optional connectors are via separately certified flameproof equipment, where these are utilised, the equipment has flameproof parts which does not form part of the equipment marking.

The equipment has the following safety description:

Um = 100-240V ac, 50-60 Hz, 2A

| Table 1 | | |
|--|---|---------------|
| PS/2 Interface (Where fitted) | | |
| Uo | = | 5.355 Vdc |
| Io | = | 0.155 A |
| Po | = | 0.572 W |
| Ci | = | 17.05 μ F |
| Co | = | 47.95 μ F |
| Li | = | 0 |
| Lo | = | 0.4 mH |
| Note: NOT galvanically isolated | | |

| Table 2 | | |
|--|---|---------------------|
| Wi-Fi- Interface (IS752 RF barrier) | | |
| Uo | = | 6.51 Vdc |
| Io | = | 1.031 A (at 2.4Ghz) |
| Po | = | 1.69 W |
| Co | = | <22 μ F |
| Lo | = | <33 μ H |
| Ci | = | 10.5pF |
| Li | = | 0 |
| Note: NOT galvanically isolated | | |

| Table 3 | | | | | |
|---|---|--------------------------------|-----------------------------------|---|-----------|
| IS993 Ethernet Isolator (where fitted) – only for IIB or IIA applications | | | | | |
| 10/100 Ethernet TX (output) | | | 10/100 Ethernet RX (input) | | |
| Uo | = | 4.935 Vdc | Ui | = | 5.88 Vdc |
| Io | = | 1.176 A | Ii | = | 1.666 A |
| Po | = | 1.451 W | Pi | = | Any value |
| Co | = | 999 μ F | Ci | = | 908 nF |
| Lo | = | 12.8 μ H or | Li | = | 0 |
| Lo / Ro | = | 31 μ H / Ω (Note 1) | | | |
| <p>Note 1: The quoted value of Lo/Ro can only be used if the connected Ethernet device has a terminal inductance (Li) of zero. The quoted value of Lo/Ro takes into account the total current from the IS993 Ethernet isolator, plus the connected Ethernet device and is calculated on the basis of a IIB system. If the connected Ethernet device quotes a lower value of Lo/Ro, this lower value should be used in the selection of a suitable cable.</p> <p>Note 2: The Ethernet port connected to the IS993 Ethernet Isolator shall be resistively-limited, with a source resistance $R_s \geq U_o/I_o$</p> | | | | | |

| Table 4 – Only suitable for -20°C ambient | | |
|--|---|-------|
| Solexy Ethernet Barrier (where fitted) | | |
| 10/100 Ethernet TX (output) | | |
| Um | = | 250 V |

| Table 5 | |
|---------------------------|------------|
| Optical (Output) | |
| TOSA-E168-9010-ELC | |
| Po | 30 μ W |
| 62.5/125 μ m MM Fibre | |



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| | | |
|----|---|-------------|
| Uo | = | 3.4 V |
| Io | = | 701 mA |
| Co | = | 100 μ F |
| Lo | = | 85 μ H |

| Optical (Output) Cotsworks Module | |
|--|--------|
| Po | < 35mW |
| Wave length | 850 nm |

Marking

| Design Option | | |
|----------------------|---|---|
| Gas Marking | | |
| 1 | With 'IS' and Optical interfaces | Ex eb ib mb [ib] [op is] IIC T4 Gb |
| 2 | Without 'IS' and Optical interfaces | Ex eb ib mb IIC T4 Gb |
| 3 | With Optical interfaces only | Ex eb ib mb [op is] IIC T4 Gb |
| 4 | With Solexy Ethernet Coupler (op is not available) | Ex eb ib mb [ib] IIC T4 Gb Ta = -20°C to +60°C |
| 5 | With Solexy Ethernet Coupler & Ex I PS2 | Ex eb ib mb [ib] IIC T4 Gb Ta = -20°C to +60°C |
| Dust Marking | | |
| 1 | With Rota DE2/DR4 Connector(s) | N/A |
| 2 | With 'IS' and Optical interfaces | Ex tb [ib] [op is] IIIC T135°C Db |
| 3 | Without 'IS' and Optical interfaces | Ex tb IIIC T135°C Db |
| 4 | With Optical interfaces only | Ex tb [op is] IIIC T135°C Db |
| 5 | With Solexy Ethernet Coupler (op is not available) | Ex tb [ib] IIIC T135°C Db |
| 6 | With Solexy Ethernet Coupler & Ex I PS2 | Ex tb [ib] IIIC T135°C Db |



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| Design Option | |
|---------------|--|
| Notes: | <p>(1) Options fitted with Rota DE2 / DR4 Couplers are not to be marked 'Dust Protected – 'Ex tb'</p> <p>(2) When either the Wi-Fi (IS752) and/or the IS993 (iSiS-Ex Ethernet Barrier) are fitted, the Ex codes will be those shown in line 5 of the gas table and line 6 of the dust table above.</p> <p>(3) When the IS993 is fitted, the Gas group shall be downgraded to IIB.</p> <p>(4) Some optional connectors are separately certified flameproof equipment, where these are utilised, the equipment has flameproof parts, this is not marked on the equipment</p> |
| Ambient | <p>Ta = -40°C to +60°C</p> <p>Ta = -20°C to +60°C (with Solexy Ethernet Couplers)</p> <p>Ta = -40°C to +55°C (with Rota DE2 Couplers)</p> <p>Ta = -40°C to +55°C (with Main Power cable plug arrangement)</p> |

Variation 1

This variation introduces the following modifications:

- To allow two additional alternative PSU arrangements.
- To update certificate to reference the 2014/34/EU Directive.

Variation 2

This variation introduces the following modifications:

- To allow alternative thermal fuses to be utilised.
- To update certificate to reference the 2014/34/EU Directive.

Variation 3

This variation introduces the following modifications:

- Change of the manufacturer's name to HMI Elements Limited.
- Removal of reference to the previous company name from the equipment name/model number.
- Correction of a typographical error on the certificate. Certificate showed 'EC Type Examination Certificate'; this was replaced with 'EU Type Examination Certificate'.
Compliance with the 2014/34/EU Directive was verified under Variation 1.

Variation 4

This variation introduces the following modifications:

- To allow an alternative power cable arrangement to be included
- To allow an alternative MIO CPU module to be used
- To allow an alternative Optical radiation media converter arrangement and external fibre connectors to be used.
- The description and marking has been updated in accordance with the modifications above.



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Variation 5

This variation introduces the following modifications:

- i. Alternative separate internal encapsulated optical transmitter
- ii. Correction of drawing typographic errors

Variation 6

This variation introduces the following modifications:

- i. To allow an alternative touchscreen controller to be used.
- ii. To correct drawing revision errors, as well as include a drawing reference omitted from previous variation.
- iii. The EN 60079-7 and EN 60079-18 standards are updated to current harmonised editions. Subsequently, the certification was transferred from CML U.K to CML B.V.

Variation 7

This variation introduces the following modification:

- i. Update EN 60079-0:2012+A11:2013 to EN 60079-0:2018

Variation 8

This variation introduces the following modifications:

- i. The introduction of an alternative display
- ii. Changes to the PCB layout of the SA606 and SA731 interfaces
- iii. The introduction of a new WiFi option
- iv. The introduction of an alternative internal programming connector
- v. The introduction of an alternative RF isolator
- vi. Changes to the touchscreen controller mounting arrangement
- vii. Update to equipment marking

Variation 9

This variation introduces the following modifications:

- i. The introduction of the modular version 490-Z1 HMI Module
- ii. New implementation of 470-Z1 base board

12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|--------------|-------------|--------------------------|--|
| 0 | 26 Feb 2016 | R405B/00 | Issue of prime certificate |
| 1 | 27 May 2016 | R1138A/00 | To introduce variation 1 |
| 2 | 19 Aug 2016 | N/A | Re-issued to correct a typographic error |
| 3 | 17 Feb 2017 | R1946A/00 | To introduce variation 2 |
| 4 | 16 Jan 2018 | R11519A/00 | To introduce variation 3 |
| 5 | 22 Feb 2018 | R11525A/00 | To introduce variation 4 |
| 6 | 28 Jun 2018 | R11809A/00 | To introduce variation 5 |



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| Issue | Date | Associated report | Notes |
|-------|-------------|---------------------------|---|
| 7 | 08 Mar 2019 | R12311A/00 and R12311B/00 | To introduce variation 6. To transfer to CML B.V. |
| 8 | 10 Nov 2020 | R13634B/00 | To introduce variation 7 |
| 9 | 14 Apr 2022 | R12439A/00 | To introduce variation 8 |
| 10 | 01 Mar 2024 | R17002A/00 | To introduce variation 9 |

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate. A copy of the certification and instructions shall be provided for the separately certified items fitted.
- The equipment shall be subjected to an electric strength test using a test voltage of 1500Vac applied between the input circuits (90V peak or above) and frame, for a period of 60 secs.
- Each section of 'm' encapsulated equipment shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion or softening.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- The Apparatus intrinsically safe output circuits are not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the equipment.
- When supplied, the Non-Intrinsically Safe Ethernet or RS232 cable shall be protected from damage or breakage in accordance with IEC 60079-14.
- The internal USB connection shall only be used within the safe (non-hazardous) area.
- The external USB connection (when supplied) shall only be used within the hazardous area if fitted Ex d USB interface or Ex d connector, when the non Ex d option is provided, this shall be used in the safe area only.

Certificate Annex

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Equipment 470-Z1 and 490-Z1 HMI Modules
Manufacturer HMI Elements Ltd.



The following documents describe the equipment defined in this certificate:

Issue 0

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|---------|-----|---------------|--|
| D100004 | 1 of 1 | B1 | 26 Feb 2016 | Fischer DBEE '103 Z056-130' connector – Internal USB |
| D100028 | 1 of 1 | C1 | 26 Feb 2016 | Interface Components N-Type Bulkhead Connector |
| D100194 | 1 to 9 | A0 | 26 Feb 2016 | General Arrangement Drawing |
| D100195 | 1 to 3 | A0 | 26 Feb 2016 | GA Case Front |
| D100198 | 1 to 2 | A0 | 26 Feb 2016 | Protection Concepts |
| D100199 | 1 to 30 | A0 | 26 Feb 2016 | Intrinsically Safe Circuitry and Calculations Document |
| D100200 | 1 to 2 | A0 | 26 Feb 2016 | SA009 AC PSU Schematic and Layout |
| D100210 | 1 to 2 | A0 | 26 Feb 2016 | SA900 Thermal Fuse Positions |
| D100211 | 1 of 1 | A0 | 26 Feb 2016 | SA606 Certification Drawing |
| D100212 | 1 of 1 | A0 | 26 Feb 2016 | SA680 Assembly Drawing |
| D100214 | 1 of 1 | A0 | 26 Feb 2016 | SA735 Assembly Drawing |
| D100215 | 1 of 1 | A0 | 26 Feb 2016 | SA711 Assembly Drawing |
| D100217 | 1 of 1 | A0 | 26 Feb 2016 | SA790 Assembly Drawing |
| D100220 | 1 of 1 | A0 | 26 Feb 2016 | Block Diagram with Power Indications |
| D100222 | 1 to 2 | A0 | 26 Feb 2016 | SA606 Schematic and Layout |
| D100224* | 1 of 1 | A1 | 26 Feb 2016 | SA849 Assembly Drawing |
| D100226 | 1 of 1 | A0 | 26 Feb 2016 | SA710 Assembly Drawing |
| D100227 | 1 of 1 | A0 | 26 Feb 2016 | SA705 Assembly Drawing |
| D100233 | 1 to 2 | A0 | 26 Feb 2016 | Base Thermal Fuse Reference Drawing – Basic Option |
| D100234 | 1 to 2 | A0 | 26 Feb 2016 | Lid Thermal Fuse Reference Drawing |
| D100235 | 1 to 3 | A0 | 26 Feb 2016 | SA909 Extended Plate Assembly Drawing |
| D100236 | 1 to 3 | A0 | 26 Feb 2016 | SA909 Standard Plate Assembly Drawing |
| D100237 | 1 to 2 | A0 | 26 Feb 2016 | Base Thermal Fuse Reference Drawing – Zigbee Option |
| D100238 | 1 to 2 | A0 | 26 Feb 2016 | Base Thermal Fuse Reference Drawing – Fibre media Converter Option |
| D100239 | 1 to 2 | A0 | 26 Feb 2016 | Base Thermal Fuse Reference Drawing – Exi Ethernet Option |
| D100240 | 1 to 2 | A0 | 26 Feb 2016 | LCD Thermal Fuse Position Drawing |
| D100241 | 1 of 1 | A0 | 26 Feb 2016 | SA731 Certification Drawing |

Certificate Annex

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Equipment 470-Z1 and 490-Z1 HMI Modules
Manufacturer HMI Elements Ltd.



| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|--|
| D100242 | 1 of 1 | A0 | 26 Feb 2016 | Specification Plate and Warning Label |
| D100243 | 1 of 1 | A0 | 26 Feb 2016 | Internal and external earth Stub Arrangement |
| D100244 | 1 of 1 | A0 | 26 Feb 2016 | SA795 Certification Drawing (Schematics) |
| D100245 | 1 of 1 | A0 | 26 Feb 2016 | SA795 Assembly Drawing |
| D100246 | 1 of 1 | A0 | 26 Feb 2016 | SA865 Certification Drawing (Schematics) |
| D100247 | 1 of 1 | A0 | 26 Feb 2016 | Enclosure Lid Certification Drawing |
| D100248 | 1 to 2 | A0 | 26 Feb 2016 | Enclosure Rear Certification Drawing |
| D100249 | 1 of 1 | A0 | 26 Feb 2016 | SA680 Certification Drawing (Schematics) |
| D100250 | 1 of 1 | A0 | 26 Feb 2016 | SA735 Certification Drawing (Schematics) |
| D100251 | 1 of 1 | A0 | 26 Feb 2016 | SA790 Certification Drawing (Schematics) |
| D100252 | 1 of 1 | A0 | 26 Feb 2016 | SA785 – Media Converter and Carrier Board |
| D100253 | 1 of 1 | A0 | 26 Feb 2016 | SA705 Certification Drawing (Schematics) |
| D100254 | 1 to 2 | A0 | 26 Feb 2016 | SA711 Schematic and Layout |
| D100255 | 1 of 1 | A0 | 26 Feb 2016 | 501935 Bluetooth Module Certification Drawing |
| D100256 | 1 of 1 | A0 | 26 Feb 2016 | SA909 Certification Drawing (Schematics) |
| D100257 | 1 of 1 | A0 | 26 Feb 2016 | SA826 Bios back up Battery |
| D100258 | 1 of 1 | A0 | 26 Feb 2016 | SA816 Certification Drawing (Schematics) |
| D100259 | 1 of 1 | A0 | 26 Feb 2016 | SA849 Certification Drawing (Schematics) |
| D100260 | 1 of 1 | A0 | 26 Feb 2016 | Glass, Touchscreen sensor & Optically Bonded LCD Panel Certification Drawing |
| D100261 | 1 to 2 | A0 | 26 Feb 2016 | SA731 Schematic and Layout |
| D100265 | 1 of 1 | A0 | 26 Feb 2016 | Internal mounting Plate Bare PCB |
| D100266 | 1 of 1 | A0 | 26 Feb 2016 | Fuse Assembly |
| D100267 | 1 of 1 | A0 | 26 Feb 2016 | MIO2262 Battery Back Up Circuit |
| D500004 | 1 of 1 | B | 26 Feb 2016 | IS752 Wi-Fi Antenna Barrier Circuit Diagram |
| D500005* | 1 of 1 | A | 26 Feb 2016 | IS752 Wi-Fi Antenna Barrier Board Layout |
| CAA10645 | 1 of 1 | 4 | 26 Feb 2016 | S900 2CH AL/BR BH to ST PC 62.5/125 M/M 0.4mtr Optical Connector |
| FM-TN-068 | 1 to 4 | A | 26 Feb 2016 | Wi-Fi Barrier General Construction |
| D502383 | 1 of 1 | A0 | 26 Feb 2016 | Modified Box for ISO752 Assembly |
| D100268 | 1 to 7 | A0 | 26 Feb 2016 | Fischer PS2 Creepage and Clearances |

Certificate Annex

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Manufacturer HMI Elements Ltd.



Issue 1

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|---|
| D100194 | 1 to 9 | B0 | 27 May 2016 | General Arrangement Drawing |
| D100198 | 1 to 5 | A1 | 27 May 2016 | Protection Concepts |
| D100220 | 1 to 3 | A1 | 27 May 2016 | Block Diagram with Power Indications |
| D100265 | 1 to 2 | B0 | 27 May 2016 | Internal mounting Plate Bare PCB |
| D100269 | 1 of 1 | A0 | 27 May 2016 | Smart-Ex - 470-Z1 – Power Supply Construction Options |
| D100270 | 1 to 2 | A0 | 27 May 2016 | Smart-Ex – 470-Z1 – SA905 Base PCB and PSU Assembly Drawing |
| D100271 | 1 to 2 | A0 | 27 May 2016 | Smart-Ex – 470-Z1 – PSU Thermal Fuse Reference Drawing |
| D100272 | 1 of 1 | A0 | 27 May 2016 | Smart-Ex – 470-Z1 – SA987 DC to DC converter PSU Assembly Drawing |

Issue 2

No drawings issued

Issue 3

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|-----------------------------|
| D100194 | 6 to 9 | C0 | 17 Feb 2017 | General Arrangement Drawing |

Issue 4

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|--|
| D100242 | 1 of 1 | C0 | 16 Jan 2018 | 470-Z1 Specification Plate and Warning Label |

Issue 5

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|----------|-----|---------------|--|
| D100194 | 5a of 10 | C1 | 22 Feb 2018 | General Arrangement Drawing |
| D100194 | 6 to 10 | C1 | 22 Feb 2018 | General Arrangement Drawing |
| D100220 | 1 of 1 | B0 | 22 Feb 2018 | Block diagram with Power Indications |
| D100198 | 1 to 5 | B0 | 22 Feb 2018 | 470-Z1 Protection Concepts |
| D100209 | 1 of 1 | A0 | 22 Feb 2018 | 470-Z1 Wiring Diagram |
| D100275 | 1 to 2 | A0 | 22 Feb 2018 | 470 Thermal Fuse Reference – Cotsworks Media Converter |

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Manufacturer HMI Elements Ltd.



| Drawing No | Sheets | Rev | Approved date | Title |
|----------------------------------|--------|-----|---------------|---|
| 2444 | 1 to 3 | 3 | 22 Feb 2018 | GEO-BEAM BH D 2CH (Reversed Mounting) Assembly & Customer Technical Outline |
| 5313 | 1 of 1 | B | 22 Feb 2018 | GEO-BEAM BH D 2CH Reversed Mounting to LC (Buffered Fibre 0.9mm) |
| 5413 | 1 of 1 | A | 22 Feb 2018 | Junior Protective Window 2CH Plug to LC (MIL-TAC) |
| BM / rev ENG01/13/2/ 18/RH | 1 to 6 | - | 22 Feb 2018 | Work Method for HMI Elements Fibre Bulkhead (Geobeam connector) |
| D100242 | 1 of 1 | D0 | 22 Feb 2018 | Specification Plate and Warning Label |

Issue 6

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|--|
| D100194 | 6 to 9 | C2 | 28 Jun 2018 | General Arrangement Drawing |
| D100198 | 1 to 5 | C0 | 28 Jun 2018 | Protection Concepts |
| D100209 | 1 of 1 | B0 | 28 Jun 2018 | 470-Z1 Wiring Diagram |
| D100210 | 1 of 1 | B0 | 28 Jun 2018 | SA900 Thermal Fuse Positions |
| D100220** | 1 of 1 | C0 | 28 Jun 2018 | Block Diagram with Power Indications |
| D100235 | 1 to 3 | A2 | 28 Jun 2018 | SA909 Extended Plate Assembly Drawing |
| D100246 | 1 of 1 | B0 | 28 Jun 2018 | SA865 Certification Drawing (Schematics) |
| D100256 | 1 of 1 | B0 | 28 Jun 2018 | SA909 Certification Drawing (Schematics) |
| D100270 | 1 to 2 | A1 | 28 Jun 2018 | SA905 base PCB and PSU Assembly Drawing |
| D100277 | 1 to 2 | A0 | 28 Jun 2018 | 470-Z1 CotsWorks Potted Box – Bubble Diagram |
| RD0109 | 1 of 1 | A0 | 28 Jun 2018 | 470-Z1 – SA1179 Positioning Placement |
| D100236* | 1 to 3 | A2 | 28 Jun 2018 | SA865 Standard Plate Assembly Drawing |

*The above drawing was included as part of the approved drawings but had been previously missed off the drawing list. This was corrected at Issue 7.

**The above drawing was included as part of the approved drawings but the drawing list stated '1 of 3' sheets instead of '1 of 1'. This was corrected at Issue 7.

Issue 7

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|--------------------------------------|
| D100194 | 6 of 9 | C3 | 08 Mar 2019 | General Arrangement Drawing |
| D100198 | 1 to 5 | D0 | 08 Mar 2019 | Protection Concepts |
| D100209 | 1 of 1 | C0 | 08 Mar 2019 | 470-Z1 Wiring Diagram |
| D100224 | 1 of 1 | B0 | 08 Mar 2019 | SA849 Assembly Drawing |
| D100220 | 1 of 1 | D0 | 08 Mar 2019 | Block Diagram with Power Indications |

Certificate Annex

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Equipment 470-Z1 and 490-Z1 HMI Modules
Manufacturer HMI Elements Ltd.



| Drawing No | Sheets | Rev | Approved date | Title |
|-----------------------------|--------|-----|---------------|--|
| D100234 | 1 to 2 | B0 | 08 Mar 2019 | Lid Thermal Fuse Reference Drawing |
| D506113 | 1 of 1 | A0 | 08 Mar 2019 | Heat Spreader Plate for 470-Z1 Touchscreen Controller |
| BM / Rev A0 20/2/19 / RH | 1 of 1 | A0 | 08 Mar 2019 | WORK Method FOR SA1349 DYTOS Touchscreen Controller Assembly |

Issue 8

No additional drawings

Issue 9

| Drawing No. | Sheets | Rev | Approved date | Title |
|-------------|--------|-----|---------------|--|
| D100194 | 1 to 5 | C3 | 14 Apr 2022 | General arrangement |
| D100194 | 6 to 9 | C4 | 14 Apr 2022 | 470 Z-1 General arrangement |
| D100195 | 1 to 3 | A1 | 14 Apr 2022 | 470 GA Case front |
| D100198 | 1 to 6 | E1 | 14 Apr 2022 | 4*0-Z1 Protection concepts |
| D100209 | 1 to 2 | D1 | 14 Apr 2022 | 470-Z1 Wiring diagram |
| D100211 | 1 to 2 | A1 | 14 Apr 2022 | 470 SA606 Certification drawing |
| D100214 | 1 to 2 | A1 | 14 Apr 2022 | 470-Z1 WiFi Carrier Board Assembly Drawing |
| D100220 | 1 to 2 | E1 | 14 Apr 2022 | 470-Z1 Block diagram with power indications |
| D100224 | 1 to 3 | C0 | 14 Apr 2022 | 470_Z1 SA849 Assembly drawing |
| D100234 | 1 to 4 | C0 | 14 Apr 2022 | 470_Z1 Lid thermal fuse reference drawing |
| D100240 | 1 to 4 | B0 | 14 Apr 2022 | 470_Z1 LCD thermal fuse position drawing |
| D100241 | 1 to 2 | A1 | 14 Apr 2022 | SA731 certification drawing |
| D100250 | 1 to 2 | A1 | 14 Apr 2022 | SA735 certification drawing (schematics) |
| D100242 | 1 of 1 | G0 | 14 Apr 2022 | 470-Z1 Specification plate and warning label |

Issue 10

| Drawing No. | Sheets | Rev | Approved date | Title |
|-------------|----------|-----|---------------|---------------------------------------|
| D100194 | 1 to 5 | D2 | 01 Mar 2024 | General arrangement |
| D100194 | 6 to 10 | D2 | 01 Mar 2024 | 470-Z1 and 490-Z1 General arrangement |
| D100194 | 11 to 13 | D2 | 01 Mar 2024 | 490-Z1 General arrangement |
| D100198 | 1 to 7 | F0 | 01 Mar 2024 | 4*0-Z1 Protection concepts |
| D100209 | 1 to 3 | E1 | 01 Mar 2024 | 470-Z1 and 490-Z1 Wiring diagram |

Certificate Annex

Certificate Number CML 15ATEX3203X
Equipment 470-Z1 and 490-Z1 HMI Modules
Manufacturer HMI Elements Ltd.



| Drawing No. | Sheets | Rev | Approved date | Title |
|-------------|--------|-----|---------------|--|
| D100220 | 1 to 3 | F0 | 01 Mar 2024 | 470-Z1 and 490-Z1 Block diagram with power indications |
| D100234 | 1 to 4 | C0 | 01 Mar 2024 | 470_Z1 Lid thermal fuse reference drawing |
| D100240 | 1 to 4 | B1 | 01 Mar 2024 | 470_Z1 and 490-Z1 LCD thermal fuse position drawing |
| D100242 | 1 of 1 | H0 | 01 Mar 2024 | Specification plate and warning label |
| D100374 | 1 to 3 | A2 | 01 Mar 2024 | 490-Z1 - Cotsworks + wifi assembly – thermal fuse drawing (SA1377) |
| D100446 | 1 to 5 | A2 | 01 Mar 2024 | 490-Z1 MIO processor - thermal fuse drawing (SA1354) |
| D100469 | 1 to 3 | A0 | 01 Mar 2024 | 490-Z1 GA Case Front |
| D100472 | 1 to 3 | A1 | 01 Mar 2024 | 490-Z1 PSU thermal fuse drawing (SA1338) |
| D100486 | 1 to 3 | A0 | 01 Mar 2024 | 490_Z1 - Zigbee assembly - thermal fuse drawing (SA1378) |
| D100487 | 1 to 2 | A0 | 01 Mar 2024 | 490-Z1 - Lid Thermal Fuse Reference Drawing |
| D100489 | 1 to 3 | A0 | 01 Mar 2024 | 490_Z1 - Xbee assembly - thermal fuse drawing (SA1763) |
| D100490 | 1 to 3 | A0 | 01 Mar 2024 | 490_Z1 - Sparklan assembly - fuse drawing (SA1764) |
| D100491 | 1 to 3 | A0 | 01 Mar 2024 | 490_Z1 - Omnitron assembly - fuse drawing (SA1803) |
| D506168 | 1 to 4 | A1 | 01 Mar 2024 | 490-Z1 ALUMINIUM LID CHASSIS |
| D100515 | 1 to 3 | A0 | 01 Mar 2024 | 490-Z1 C-Grid interface PCB |
| D100520 | 1 to 1 | A0 | 01 Mar 2024 | 490-Z1 - Enclosure Lid Certification Drawing |
| D100521 | 1 to 1 | A0 | 01 Mar 2024 | 490-Z1 - Enclosure Lid Certification Drawing |
| DSA1929 | 1 to 4 | A0 | 01 Mar 2024 | 490-Z1 -Screened Ribbon Cable |
| D100471 | 1 to 2 | A0 | 01 Mar 2024 | 470-Z1 –SA1818 Base PCB and PSU Assembly Drawing |