



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX UL 21.0067X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2021-07-29

Applicant: **GE Drives & Controls Inc.**  
1501 Roanoke Blvd.  
Salem, VA 24153  
**United States of America**

Equipment: **Mark VIe Programmable Controller System, Models IS220PCNOH1B, IS220PPRFH1B, IS220PDIH1B, IS220PTCCH1B, IS220PRTDH1B, IS220PDIAH1B, IS220PDOAH1B, IS220PAICH1B, IS220PCLAH1B, ISx2yPDIOH1B, IS220PAOCH1B, IS220PPRAS1B, IS220PPROS1B, IS220PTURH1B, IS220PSVOH1B, ISx2yPSCAH1B, IS42yPVIBH1B, ISx2yYAICS1B, IS220PHRAH1B, IS220YSILS1A, IS220YSILS1B, IS42yYVIBS1B, IS221PDIAH1B, IS221PDOAH1B, IS221PHRAH1B, IS221PRTDH1B.**

Optional accessory: Accessory Board Cat Nos: IS200SPIDG1A, ISx0ySDIHH1A, ISx0ySTTCH1A, ISx0ySTTCH2A, ISx0yTBTCH1B, ISx0yTBTCH1C, ISx0yTRLYH2E, ISx0yTRLYH3E, ISx0yTRLYH1F, ISx0yTRLYH2F, ISx0ySTAIH1A, ISx0ySTAIH2A, ISx0yTBAlH1C, IS200STCIH8A, IS200TBCIH4C, IS200TRTDH2D, IS200SRTDH1A, IS200SRTDH2A, IS210SCLSH1A, IS200SCLTH1A, ISx0yTDBSH8A, ISx0yTDBTH8A, IS200STAOH1A, IS200STAOH2A, IS200TBAOH1C, IS200STCIH1A, IS200STCIH2A, ISx0yTBCIH2C, ISx0yTDBSH2A, ISx0yTDBTH2A, IS200TREAS1A, IS200WREAS1A, IS200SPROH1A, IS200SPROH2A, IS200TPROH1C, IS200TPROH2C, IS200TPROS1C, IS200TPROS2C, IS200TREAHA1A, IS200TREAHA3A, IS200TRPAH1A, IS210WSVOH1A, IS200TSVCH2A, ISx0ySSCAH1A, ISx0ySSCAH2A, ISx0yTRLYS1F, ISx0yTRLYS2F, ISx0ySTAIS1A, ISx0ySTAIS2A, ISx0yTBAIS1C, ISx0ySTCIS1A, ISx0ySTCIS2A, IS200TBCIS2C, IS200SHRAH1A, IS200SHRAH2A, IS200TCSAS1A, IS200WCSAS1A, IS200SCSAS1A, IS40ySSUPS1A, IS201STCIH1A, IS201STCIH2A, IS201STCIH8A, ISx0yTBCIH2C, IS201TBCIH4C, ISx01TRLYH2E, ISx01TRLYH3E, ISx01TRLYH1F, ISx01TRLYH2F, IS201SHRAH1A, IS201SHRAH2A, IS201TRTDH2D, IS201SRTDH1A, IS201SRTDH2A, ISx0ySRLYH1A, ISx0ySRLYH2A, IS40yWROBH1A, IS40yWROGH1A, IS40yWROFH1A, IS40yWROHH1A, IS40yTVBAH2B, IS20yTVBAH2A, ISx0yWNPSS1A, IS40yTVBAS2B, ISx0yTVBAS2A, ISx0yWNPSS1A where x = 2 or 4 and y = 0 or 1.

Type of Protection: **Increased Safety"ec", Intrinsic Safety "ic"**

Marking: Ex ec IIC T4 Gc or

Ex ec [ic] IIC T4 Gc or

Ex ic ec IIC T4 Gc or

Ex ic ec [ic] IIC T4 Gc

Approved for issue on behalf of the IECEx  
Certification Body:

**Katy A. Holdredge**

Position:

**Senior Staff Engineer**

Signature:  
(for printed version)

Date:

2021-07-29

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Certificate issued by:

**UL LLC**  
333 Pfingsten Road  
Northbrook IL 60062-2096  
United States of America





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Manufacturer: **GE Drives & Controls Inc.**  
1501 Roanoke Blvd.  
Salem, VA 24153  
**United States of America**

Additional manufacturing locations: **Jabil Circuit (Guangzhou) Ltd**  
128 Jun Cheng Road  
Guangzhou Economic & Technologist  
Development  
District Guangzhou, 510530  
**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 equipment 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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with 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:

[US/UL/ExTR21.0070/00](#)

Quality Assessment Reports:

[US/UL/QAR21.0014/00](#)

[US/UL/QAR21.0016/00](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Mark VIe control system is an open type microprocessor based system designed for complete integrated control, protection and monitoring of generator and mechanical drive applications for gas and steam turbines and other industrial control applications. The devices are field mounted in a suitable electrical enclosure adjacent to the turbine. The specific Model Nomenclature is included in the Annex to CoC.

**Please see Annex for additional information.**

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Provision shall be made to limit transient voltages to less than 140% of the peak rated voltage.
- This equipment shall be used in an environment of not more than Pollution Degree 2 (as defined in IEC 60664-1).
- For installation in the European Union, this equipment shall be installed within an IECEx certified enclosure with a minimum ingress protection rating of at least IP54 (as defined in IEC 60529).
- This equipment shall be powered through a power distribution board that is certified for the applicable classified location.
- This equipment shall be powered by a switched-mode power supply (SMPS) that is certified for the applicable location, and has its output current limited to 20 A maximum, and has the features listed for Vendor Manufactured Control Power supplies in GEH-6721\_Vol\_II, Mark VIe Control, Volume II System Hardware Guide.
- Mark VIe Cat Nos. IS220PTCCH1B, IS220PRTDH1B, IS221PRTDH1B and IS220PCLAH1B must contain the following installation conditions:
  - Only resistive simple apparatus, such as thermocouples or RTD's shall be connected.
  - Each cable used to connect the simple apparatus must have suitable insulation as required by the applicable local electrical codes.

## **Annex:**

[Annex to IECEx UL 21.0067X Issue 0.pdf](#)



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## TYPE DESIGNATION

The Mark VIe Control CANopen® Master Gateway Module, Cat No. IS220PCNOH1B is intended to be used with accessory terminal board Cat. No. IS200SPIDG1A.

The Mark VIe Control PROFIBUS® Master Gateway, Cat No. IS220PPRFH1B is intended to be used with accessory terminal board Cat. No. IS200SPIDG1A.

The Mark VIe Control Isolated Discrete Input Module, Cat No. IS220PDIIH1B is intended to be used with accessory terminal board Cat. No. ISx0ySDIIH1A.

The Mark VIe Control Thermocouple Input Module, Cat No. IS220PTCCH1B is intended to be used with accessory terminal board Cat. Nos. ISx0ySTTCH1A, ISx0ySTTCH2A, ISx0yTBTCH1B, ISx0yTBTCH1C.

The Mark VIe Control Discrete Output Module, Cat. No. IS220PDOAH1B is intended to be used with accessory terminal board Cat. Nos. ISx0yTRLYH2E, ISx0yTRLYH3E, ISx0yTRLYH1F, ISx0yTRLYH2F, ISx0ySRLYH1A or ISx0ySRLYH2A;  
Cat No. IS221PDOAH1B is intended to be used with accessory terminal board Cat. Nos. ISx01TRLYH2E, ISx01TRLYH3E, ISx01TRLYH1F or ISx01TRLYH2F.

The Mark VIe Control Discrete Output Module, Cat. No. IS220PDOAH1B is intended to be used with accessory terminal board Cat. Nos. ISx0ySRLYH1A or ISx0ySRLYH2A with optional monitoring boards IS40yWROBH1A, IS40yWROGH1A, IS40yWROFH1A and IS40yWROHH1A.

The Mark VIe Control Analog I/O Module, Cat. No. IS220PAICH1B is intended to be used with accessory terminal board Cat. Nos. ISx0ySTAIH1A, ISx0ySTAIH2A, ISx0yTBAIH1C.

Mark VIeS Safety Analog I/O pack ISx2yYAICS1B with accessory terminal board ISx0ySTAIS1A, ISx0ySTAIS2A, or ISx0yTBAIS1C, where x = 2 or 4 and y = 0 or 1.

The Mark VIe Control Discrete Input Module, Cat. No. IS220PDIH1B is intended to be used with accessory terminal board Cat. Nos. ISx0ySTCIH1A, ISx0ySTCIH2A, ISx0ySTCIH8A, ISx0yTBCIH2C, ISx0yTBCIH4C.

Cat No. IS221PDIH1B is intended to be used with accessory terminal board Cat. Nos. ISx01STCIH1A, ISx01STCIH2A, ISx01STCIH8A, ISx0yTBCIH2C or ISx01TBCIH4C where x = 2 or 4 & y = 0 or 1.

The Mark VIe Control Resistance Temperature Device (RTD) Input Modules, Cat No. IS220PRTDH1B is intended to be used with accessory terminal board Cat. Nos. IS200TRTDH2D, IS200SRTDH1A, IS200SRTDH2A and Cat No. IS221PRTDH1B is intended to be used with accessory terminal board Cat. Nos. IS201TRTDH2D, IS201SRTDH1A, IS201SRTDH2A.

The Mark VIe Control Core Analog Module, Cat. No. IS220PCLAH1B is intended to be used with accessory terminal board Cat. Nos. IS210SCLSH1A, IS200SCLTH1A.

The Mark VIe Control Discrete I/O Module, Cat. No. ISx2yPDIOH1B is intended to be used with accessory terminal board Cat. Nos. ISx0yTDBSH2A, ISx0yTDBSH8A, ISx0yTDBTH2A, ISx0yTDBTH8A.

The Mark VIe Control Analog Output Module, Cat. No. IS220PAOCH1B is intended to be used with accessory terminal board Cat. Nos. IS200STAOH1A, IS200STAOH2A, IS200TBAOH1C



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The Mark Vles Control PPRA Emergency Turbine Protection Module Cat. No. IS220PPRAS1B is intended to be used with accessory terminal board Cat. Nos. IS200TREAS1A and IS200WREAS1A.

The Mark Vle Backup turbine protection I/O Module, Cat. No. IS220PPROS1B is intended to be used with accessory terminal board Cat. Nos. IS200SPROH1A, IS200SPROH2A, IS200TPROH1C, IS200TPROH2C, IS200TPROS1C, IS200TPROS2C, IS200TREA1A, IS200TREA3A.

The Mark Vle Turbine Specific Primary Trip I/O Module IS220PTURH1B is intended to be used with accessory terminal board Cat. No. IS200TRPAH1A.

The Mark Vle Servo Control Module, Cat. No. IS220PSVOH1B is intended to be used with accessory servo driver board Cat. No. IS210WSVOH1A and accessory terminal board Cat. No. IS200TSVCH2A; with RoHS compliant boards, the model IS220PSVOH1B constructed with internal acquisition board IS400BSVOH1A, intended to be used with accessory terminal board Cat. Nos. IS200TSVCH2A and RoHS compliant board IS210WSVOH1A.

The Mark Vle PSCA Serial Communications Modules, Cat. No. ISx2yPSCAH1B is intended to be used with accessory terminal boards ISx0ySSCAH1A or ISx0ySSCAH2A.

The Mark Vle HART enabled I/O Module IS220PHRAH1B is intended to be used with accessory terminal boards ISx0ySHRAH1A or ISx0ySHRAH2A and Module IS221PHRAH1B is intended to be used with accessory terminal boards ISx01SHRAH1A or ISx01SHRAH2A.

The Mark VleS Core Safety Protection Modules IS220YSILS1A or IS220YSILS1B are intended to be used with accessory boards IS200TCSAS1A, IS200WCSAS1A, IS200SCSAS1A and IS40ySSUPS1A.

The Mark Vle Control Vibration Monitor Module, Cat. No. IS42yPVIBH1B, consisting of IS40yBBAH1A I/O Board and IS40yBPPCH1A CPU Board, is intended to be used with accessory terminal board Cat. No. IS40yTVBAH2B, or IS20yTVBAH2A and negative power supply daughter board accessory Cat. No. ISx0yWNPSH1A.

The Mark VleS Control Vibration Monitor Module, Cat. No. IS42yYVIBS1B, consisting of IS40yBBAAS1A I/O Board and IS40yBPPCS1A CPU Board, is intended to be used with accessory terminal board Cat. No. IS40yTVBAS2B, or IS20yTVBAS2A and negative power supply daughter board accessory Cat. No. IS2xyWNPSS1A where x = 2 or 4 and y = 0 or 1.

Nomenclature:

IS 2 2 0 PAIC H 1 B A  
I II III IV V VI VII VIII

I - 2 – not RoHS compliant  
4 – RoHS compliant

II – 0 – single circuit board assembly  
1 – single circuit board assembly + mechanical assembly  
2 – one or more circuit board assemblies + housing

III – 0 – not conformal coated



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1 – conformal coated (not required for safety)

Note – coated or non-coated versions of the circuit board assemblies have identical constructions and schematic drawings

IV – Function mnemonic – Any four A-Z characters

V - H – Surface mount components  
G – No surface mount components  
S – SIL-certified (IEC 61508)

VI – BOM variant – Any number 1-9

VII – Major revision – Single letter

VIII– Minor revision – One or two letters

## PARAMETERS RELATING TO THE SAFETY

### Temperature range:

-40 °C to +70 °C

ISx2yPSCAH1B, IS42yPVIBH1B, ISx2yYAICS1B, IS42yYVIBS1B where x = 2 or 4 and y = 0 or 1.

-30 °C to +65 °C

(IS220PDIIH1B, IS220PTCCH1B, IS220PRTDH1B, IS220PDI AH1B, IS220PDOAH1B, IS220PAICH1B, IS220PCLAH1B, ISx2yPDIOH1B, IS220PAOCH1B IS220PPRAS1B, IS220PPROS1B, IS220PTURH1B, IS220PSVOH1B, IS220YDOAS1B, IS220YAICS1B, IS220PHRAH1B, IS220YSILS1A, IS220YSILS1B, IS221PDIAH1B, IS221PDOAH1B, IS221PHRAH1B, IS221PRTDH1B)

-20 °C to +55 °C

(IS220PCNOH1B, IS220PPRFH1B)

### Ratings :

I/O pack System Cat. No IS220PCNOH1B with Cat. No. IS200SPIDG1A. Input Supply: 28.6 Vdc , 0.17 A max

I/O pack System Cat. No IS220PPRFH1B with Cat. No. IS200SPIDG1A. Input Supply: 28.6 Vdc, 0.18 A max

I/O pack System Cat. No IS220PDIIH1B with Cat. No. ISx0ySDIIH1A. Input Supply: 28.6 Vdc, 0.15 A max

Contact Input: 0 to 32 Vdc

I/O pack System Cat. No. IS220PTCCH1B with Cat. Nos. ISx0ySTTCH1A, ISx0ySTTCH2A, ISx0yTBTCH1B, ISx0yTBTCH1C:

Input: 28 Vdc, 0.16 A max

Thermocouple: -8 to +45 mV dc

I/O pack System Cat Nos. IS220PDOAH1B with Cat. Nos. ISx0yTRLYH2E, ISx0yTRLYH3E, ISx0yTRLYH1F,



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ISx0yTRLYH2F, ISx0ySRLYH1A, ISx0ySRLYH2A, ; Cat. No. IS221PDOAH1B with Cat. Nos. ISx01TRLYH2E, ISx01TRLYH3E, ISx01TRLYH1F or ISx01TRLYH2F:

Input: 24-28 Vdc, 0.71 A max

Contact Out (TRLYH1F, 2F, SRLY): 30 V dc, 5 A dc

Contact Out (TRLYH2E): 28 V dc, 7 A dc

Contact Out (TRLYH3E): 140 V dc, 2 A dc

I/O Pack system Cat. No. ISIS220PDOAH1B with cat. Nos. ISx0ySRLYH1A and ISx0ySRLYH2A with optional monitoring boards.

IS40yWROBH1A, IS40yWROGH1A, IS40yWROFH1A, IS40yWROHH1A.

IS40yWROBH1A, IS40yWROGH1A, IS40yWROFH1A:

Supply Ratings (Wetting Power): 24/125Vdc/120/240Vac, 13.5A max.

(monitors 6 relays fused 3.15A)

Supply Rating (Wetting Power (WROB) - JG1): 24/125Vdc/120/240Vac, 5A max.

IS40yWROHH1A

Supply Ratings (Wetting Power J1): 24/48Vdc, 18 A max.

(monitors 12 relays fused 3.15A)

Supply Rating (Wetting Power - JG1): 24/48Vdc, 5A max.

I/O pack System Cat. No. IS220PAICH1B with Cat. Nos. ISx0ySTAIH1A, ISx0ySTAIH2A, ISx0yTBAIH1C:

Input: 24-28 Vdc, 0.49 A max

Analog In (1-8): -10 to +10 V dc, 0 to 20 mA dc

Analog In (9-10): -5 to +5 V dc, -1 to 20 mA dc

Analog Out: 0 to 16.3 V dc, 0 to 20 mA dc

Analog Transmitter Power: 24 V dc, 21 mA dc

I/O pack System Cat. Nos. IS220PDIAH1B with Cat. Nos. IS200STCIH1A, IS200STCIH2A, IS200STCIH8A, ISx0yTBCIH2C, IS200TBCIH4C; IS220PDIAH1B with Cat. Nos. IS400BPDIH1A, IS400STCIH1A, IS400STCIH2A, IS400STCIH8A, ISx0yTBCIH2C, IS400TBCIH4C; and Cat. No. IS221PDIAH1B with Cat. Nos. ISx01STCIH1A, ISx01STCIH2A, ISx01STCIH8A, ISx0yTBCIH2C or ISx01TBCIH4C:

Input: 24-28 Vdc, 0.24 A max

Contact In: 0 to 32 V dc

STCIH1A, 2A, TBCIH2C:

Contact Wetting Out : 32 V dc, 110 mA dc

STCIH8A, TBCIH4C:

Contact Wetting Out (1-21): 31 V dc, 10 mA dc

Contact Wetting Out (22-24): 31 V dc, 41 mA dc

I/O pack System Cat. Nos. IS220PRTDH1B with Cat. Nos. IS200TRTDH2D, IS200SRTDH1A, IS200SRTDH2A, and Cat. No. IS221PRTDH1B with Cat. Nos. IS201TRTDH2D, IS201SRTDH1A or IS201SRTDH2A:

Input: 28 Vdc, 0.24 A max

RTD: 0 to 4.2 V dc, 10 mA dc

I/O pack System Cat. No. IS220PCLAH1B with Cat. Nos. IS210SCLSH1A, IS200SCLTH1A:



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Input: 28 Vdc, 0.78 A max  
Analog In: -10 to +10 V dc, 0 to 20 mA dc  
Thermocouple: -16 to +63 mV dc  
RTD: 0 to 0.7 V dc, 1 mA dc  
Analog Out: 0 to 16.3 V dc, 0 to 20 mA dc  
Analog Transmitter Power: 24 V dc, 21 mA dc

I/O pack System Cat. No. ISx2yPDIOH1B with Cat. Nos. ISx0yTDBSH2A, ISx0yTDBSH8A, ISx0yTDBTH2A, ISx0yTDBTH8A:

Input: 28 Vdc, 0.81 A max  
Contact In: 0 to 32 V dc  
Contact Out: 32 V dc, 3.15 A dc

ISx0yTDBSH2A, ISx0yTDBTH2A:

Contact Wetting Out: 32 V dc, 110 mA dc  
ISx0yTDBSH8A, ISx0yTDBTH8A:  
Contact Wetting Out (1-21): 31 V dc, 10 mA dc  
Contact Wetting Out (22-24): 31 V dc, 41 mA dc

I/O pack System Cat. No. IS220PAOCH1B with Cat. Nos. IS200STAOH1A, IS200STAOH2A, IS200TBAOH1C:

Input: 28 Vdc, 0.45 A max  
Analog Out: 0 to 18 V dc, 0 to 20 mA dc

I/O pack System Cat. No. IS220PPRAS1B with Cat. Nos. IS200TREAS1A, IS200WREAS1A:

Input: 28 Vdc, 0.5 A max  
Speed In: -50 to 50 V dc  
Voltage In: 16 to 140 V dc  
E-Stop In: 18 to 140 V dc  
Contact In: 0 to 32 V dc  
Contact Out: (1-2): 28 V dc, 7 A dc  
Contact Out: 28 V dc, 5 A dc  
Contact Wetting Out: 32 V dc, 13.2 mA dc

I/O pack System Cat. No. IS220PROS1B with Cat. Nos. IS200SPROH1A, IS200SPROH2A, IS200TPROH1C, IS200TPROH2C, IS200TPROS1C, IS200TPROS2C, IS200TREAHA1A, IS200TREAHA3A:

Power Supply: 28 V dc, 0.37 A dc  
PT In (SPRO/TPRO): 0 to 138 V ac, 5 to 66 Hz  
Speed In (SPRO/TPRO): -15 to +15 V dc  
Speed Sensor Power Out (TPRO): 24 V dc, 25 mA dc  
Voltage In (TREA): 16 to 140 V dc  
E-stop In (TREA): 18 to 140 V dc  
Contact Out (TREA): 28 V dc, 7 A dc

I/O pack System Cat. No. IS220PTURH1B with Cat. No. IS200TRPAH1A:

Power Supply: 28 V dc, 0.41 A dc  
Speed In: -15 to +15 V dc  
Voltage In: 16 to 140 V dc  
E-stop In: 18 to 140 V dc



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E-stop Power Out: 24 V dc O.C., 24 mA dc S.C.

Contact Out: 28 V dc, 7 A dc

I/O pack System Cat. No. IS220PSVOH1B with Cat. Nos. IS200TSVCH2A, IS210WSVOH1A;  
IS220PSVOH1B with Cat. Nos. IS400BSVOH1A, IS200TSVCH2A, IS410WSVOH1A:

Power Supply: 28 V dc, 1 A dc

LVDT In: 7.14 V ac, 3.2 KHz

Speed In: -15 to +15 V dc

LVDT Out: 7.14 V ac, 127 mA ac, 3.2 KHz

Servo Out: -10 to +10 V dc, -120 to +120 mA dc

Speed Sensor Power Out: 24 V dc, 40 mA dc

I/O pack System Cat. Nos. ISx2yPSCAH1B with Cat. Nos. ISx0ySSCAH1A, ISx0ySSCAH2A:

Power Supply: 24-28 V dc, 0.36 A dc

I/O pack System Cat. No. ISx2yYAICS1B, with Cat. Nos. ISx0ySTAIS1A, ISx0ySTAIS2A, ISx0yTBAIS1C:

Input: 24-28 Vdc, 0.49 A max

Analog In (1-8): -10 to +10 V dc, 0 to 20 mA dc

Analog In (9-10): -5 to +5 V dc, -1 to 20 mA dc

Analog Out: 0 to 16.3 V dc, 0 to 20 mA dc

Analog Transmitter Power: 24 V dc, 21 mA dc

I/O pack System Cat. No IS220PHRAH1B with Cat. Nos. ISx0ySHRAH1A, ISx0ySHRAH2A and Cat. No.  
IS221PHRAH1B with Cat. Nos. ISx0ySHRAH1A or ISx0ySHRAH2A:

Power Supply: 28 V dc, 0.5 A dc

Analog In (1-8): -5 to +5 V dc, 0 to 20 mA dc

Analog In (9-10): -5 to +5 V dc, -1 to 20 mA dc

Analog Out: 0 to 16.3 V dc, 0 to 20 mA dc

Analog Transmitter Power: 24 V dc, 21 mA dc

I/O pack System Cat. No IS220YSILS1A or IS220YSILS1B with IS200TCSAS1A, IS200WCSAS1A,  
IS200SCSAS1A, and IS40ySSUPS1A:

Power Supply (YSIL): 28 V dc, 1 A dc

Power Supply (SCSA): 28 V dc, 0.75 A dc

E-Stop In (TCSA): 32 V dc

E-Stop Wetting Power Out (TCSA): 24 V dc, 100 mA dc

Solenoid Out (TCSA): 30 V dc, 2 A dc, pilot duty (SSUPS1A inputs)

Contact Out (TCSA): 30 V dc, 5 A dc

PT In (TCSA): 138 V ac, 5 to 66 Hz

Contact In (TCSA): 32 V dc

Contact Wetting Power Out (TCSA): 32 V dc, 3 mA dc

Speed In (TCSA): +/- 15 V pk, 2 to 20,000 Hz

RSFD/Analog In (WCSA): 0 to 20 mA dc

RSFD/ Analog Transducer Power Out (WCSA): 24 V dc,  
21 mA dc

Speed Repeater Out (WCSA): +/- 5 V pk, 250 mA dc

Contact In (SCSA): 32 V dc

Contact Wetting Power Out (SCSA): 32 V dc, 3 mA dc

Contact Out (SCSA): 30 V dc, 5 A dc



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Analog In (SCSA): 0 to 20 mA dc  
 Analog Transducer Power Out (SCSA): 24 V dc, 21 mA dc  
 Thermocouple In (SCSA): -8 to 45 mV dc

I/O pack System Cat. No. IS42yPVIBH1B with IS40yTVBAH2B, or IS20yTVBAH2A and ISx0yWNPSH1A; I/O pack System Cat. No. IS42yYVIBSIB with IS40yTVBAS2B, or IS20yTVBAS2A and ISx0yWNPSS1A:

Power Supply: 24-28 V dc, 0.98 A dc  
 Vibration In: -20 to 15.6 V dc  
 Position In: -20 to -0.5 V dc  
 Buffered Out: -20 to 4.5 V dc, -3 mA dc  
 Probe Power: -24 V dc, 12 mA dc

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. Nos. IS220PRTDH1B, with IS200TRTDH2D, IS200SRTDH1A, IS200SRTDH2A, and IS221PRTDH1B with IS201TRTDH2D, IS201SRTDH1A or IS201SRTDH2A:

$U_o = 15 \text{ V dc}$   
 $I_o = 10 \text{ mA}$   
 $P_o = 150 \text{ mW}$   
 $C_o = 3 \text{ } \mu\text{F}$   
 $L_o = 100 \text{ mH}$

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. Nos. IS220PDIAH1B IS200STCIH1A, IS200STCIH2A, IS200STCIH8A, ISx0yTBCIH2C, IS200TBCIH4C; IS220PDIAH1B with Cat. Nos. IS400BPDIAH1A, IS400STCIH1A, IS400STCIH2A, IS400STCIH8A, ISx0yTBCIH2C, IS400TBCIH4C; IS221PDIAH1B with ISx0ySTCIH1A, ISx0ySTCIH2A, ISx0ySTCIH8A, ISx0yTBCIH2C or ISx0yTBCIH4C:

Cat. Nos. ISx0ySTCIH8A, ISx0yTBCIH4C

Circuits 1-21:	Circuits 22-24:
$U_o = 31.0 \text{ V dc}$	$U_o = 31.0 \text{ V dc}$
$I_o = 3.2 \text{ mA}$	$I_o = 13 \text{ mA}$
$C_o = 0.18 \text{ } \mu\text{F}$	$C_o = 0.18 \text{ } \mu\text{F}$
$L_o = 100 \text{ mH}$	$L_o = 100 \text{ mH}$
$P_o = 0.10 \text{ W}$	$P_o = 0.40 \text{ W}$

Cat. Nos. ISx0ySTCIH1A, ISx0ySTCIH2A, ISx0yTBCIH2C, ISx0ySTCIS1A, ISx0ySTCIS2A, or ISx0yTBCIS2C :

Circuits 1-21:	Circuits 22-24:
$U_o = 32.0 \text{ V dc}$	$U_o = 32.0 \text{ V dc}$
$I_o = 3.3 \text{ mA}$	$I_o = 13.4 \text{ mA}$
$C_o = 0.18 \text{ } \mu\text{F}$	$C_o = 0.18 \text{ } \mu\text{F}$
$L_o = 100 \text{ mH}$	$L_o = 100 \text{ mH}$
$P_o = 0.11 \text{ W}$	$P_o = 0.43 \text{ W}$

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. No. IS220PCLAH1B with Cat. Nos. IS210SCLSH1A, IS200SCLTH1A:

Thermocouple Inputs:  
 $U_o = 0.5 \text{ V dc}$



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$I_o = 25 \text{ nA}$   
 $P_o = 13 \text{ nW}$   
 $C_o = 1000 \text{ } \mu\text{F}$   
 $L_o = 100 \text{ mH}$   
 RTD Inputs:  
 $U_o = 15 \text{ V dc}$   
 $I_o = 1.0 \text{ mA}$   
 $P_o = 15 \text{ mW}$   
 $C_o = 3 \text{ } \mu\text{F}$   
 $L_o = 100 \text{ mH}$

Analog Outputs:  
 $U_o = 28.6 \text{ V dc}$   
 $I_o = 22.4 \text{ mA}$   
 $P_o = 0.64 \text{ W}$   
 $C_o = 0.26 \text{ } \mu\text{F}$   
 $L_o = 90 \text{ mH}$

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. No. ISx2yPDIOH1B with Cat. Nos. ISx0yTDBSH2A, ISx0yTDBSH8A, ISx0yTDBTH2A, ISx0yTDBTH8A:

Relay Contacts

$U_i = 32 \text{ V dc}$   
 $I_i = 132 \text{ mA}$   
 $P_i = 4.224 \text{ W}$   
 $C_i = 0 \text{ } \mu\text{F}$   
 $L_i = 0 \text{ mH}$

Contact Wetting Outputs:

Cat. Nos. ISx0yTDBSH8A and ISx0yTDBTH8A

Circuits 1-21:	Circuits 22-24:
$U_o = 31.0 \text{ V dc}$	$U_o = 31.0 \text{ V dc}$
$I_o = 3.2 \text{ mA}$	$I_o = 13 \text{ mA}$
$P_o = 0.10 \text{ W}$	$P_o = 0.40 \text{ W}$
$C_o = 0.18 \text{ } \mu\text{F}$	$C_o = 0.18 \text{ } \mu\text{F}$
$L_o = 100 \text{ mH}$	$L_o = 100 \text{ mH}$

Cat. Nos. ISx0yTDBSH2A and ISx0yTDBTH2A

Circuits 1-21:	Circuits 22-24:
$U_o = 32.0 \text{ V dc}$	$U_o = 32.0 \text{ V dc}$
$I_o = 3.3 \text{ mA}$	$I_o = 13.4 \text{ mA}$
$P_o = 0.11 \text{ W}$	$P_o = 0.43 \text{ W}$
$C_o = 0.18 \text{ } \mu\text{F}$	$C_o = 0.18 \text{ } \mu\text{F}$
$L_o = 100 \text{ mH}$	$L_o = 100 \text{ mH}$

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. No. IS220PAOCH1B with Cat. Nos.



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IS200STAOH1A, IS200STAOH2A, IS200TBAOH1C:

Analog Outputs

$U_o = 28.6 \text{ V dc}$

$I_o = 22.5 \text{ mA}$

$P_o = 0.641 \text{ W}$

$C_o = 0.255 \mu\text{F}$

$L_o = 100 \text{ mH}$

Intrinsically Safe Field Wiring Parameters for I/O pack System Cat. No. IS220PAOCH1B with Cat. Nos. IS200STAOH1A, IS200STAOH2A, IS200TBAOH1C:

Analog Outputs

$U_o = 28.6 \text{ V dc}$

$I_o = 22.5 \text{ mA}$

$P_o = 0.641 \text{ W}$

$C_o = 0.255 \mu\text{F}$

$L_o = 100 \text{ mH}$

## **MARKING**

Marking has to be readable and indelible; it has to include the following indications:

1. The registered GE Drives & Controls Inc. trademark;
2. Cat. No. or Model Name per "PRODUCTS COVERED";
3. Electrical Supply Ratings per "ELECTRICAL RATINGS";
4. Reference to installation instructions;
5. Date code in text or barcode form;
6. Serial number;
7. IECEx protection string;
8. Address: GE Drives and Controls, Inc., 1501 Roanoke Blvd., Salem, Virginia, 24153 USA; and
9. Certificate number: IECEx UL 21.0067X.

Marking Requirements for Accessories:

1. The registered GE Drives & Controls Inc. trademark;
2. Cat. No or Model Name per PRODUCTS COVERED Section of this drawing;
3. 336A4940FFP80 label for reference to Installation instructions; and
4. Fuse Voltage & Current Ratings for replacement.

IS40yWROBH1A, IS40yWROFH1A, IS40yWROGH1A, IS40yWROHH1A	250VAC, 125VDC minimum, 3.15A
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