



### Main

|                           |                            |
|---------------------------|----------------------------|
| Range of Product          | Harmony SCU                |
| Product or Component Type | Small touch HMI controller |
| Display size              | 3.5 inch                   |
| Display type              | Backlit LED colour TFT LCD |
| Touch panel               | Analogue                   |
| Device presentation       | Complete product           |

### Complementary

|                            |   |
|----------------------------|---|
| Display Resolution         | 320 x 240 pixels QVGA   |
| Backlight lifespan         | 50000 hours 65000 colours   |
| Brightness                 | 16 levels via touch panel   |
| View angle horiz x vert    | 60° left<br>60° right<br>40° top<br>60° bottom  |
| Character font             | Chinese (simplified Chinese)<br>ASCII<br>Taiwanese (traditional Chinese)<br>Korean<br>Japanese (ANK, Kanji)   |
| Supply                     | External source   |
| [Us] rated supply voltage  | 24 V 20.4...28.8 V)DC   |
| Immunity to microbreaks    | 10 ms   |
| Inrush current             | 30 A  |
| Power consumption in W     | 15 W  |
| Local signalling           | No indicator  |
| Number of pages            | Limited by internal memory capacity   |
| Software Designation       | SoMachine   |
| Operating System           | Harmony   |
| Processor name             | CPU RISC  |
| Processor frequency        | 333 MHz   |
| Memory description         | Flash NAND, 128 MB<br>Internal data storage FRAM, 128 kB<br>Application run DRAM, 128 MB  |
| Integrated connection type | 1 serial link - RJ45 - RS232/RS485 <= 115.2 kbits/s)<br>1 Ethernet TCP/IP - RJ45<br>1 USB 2.0 type mini B<br>1 USB 2.0 type A<br>CANopen master bus - SUB-D 9 |
| Realtime clock             | Built-in  |
| Downloadable protocols     | Modbus TCP/IP<br>CANopen<br>Modbus  |
| Fixing mode                | By 1 nut Ø 22 mm 1...6 mm thick panel   |
| Enclosure Material         | PC/PBT  |
| Shock resistance           | 147 m/s <sup>2</sup> 11 ms on DIN rail)IEC 60068-2-27<br>294 m/s <sup>2</sup> 6 ms on panel mounting)IEC 60068-2-27   |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|   |  |
|---|--|
| Vibration resistance                          | +/- 3.5 mm 5...9 Hz) IEC 60068-2-6<br>1 gn 9...150 Hz) IEC 60068-2-6   |
| Electromagnetic compatibility                 | Electrostatic discharge immunity test 8 kV air discharge) IEC 61000-4-2<br>Electrostatic discharge immunity test 6 kV contact discharge) IEC 61000-4-2<br>Susceptibility to electromagnetic fields 10 V/m 80 MHz...3 GHz) IEC 61000-4-3<br>Electrical fast transient/burst immunity test 2 kV power lines) IEC 61000-4-4<br>Electrical fast transient/burst immunity test 1 kV between analogue I/O and operating voltage) IEC 61000-4-4<br>Electrical fast transient/burst immunity test 2 kV relay wires) IEC 61000-4-4<br>Electrical fast transient/burst immunity test 1 kV Ethernet line) IEC 61000-4-4<br>Electrical fast transient/burst immunity test 1 kV COM line) IEC 61000-4-4<br>Electrical fast transient/burst immunity test 1 kV CAN line) IEC 61000-4-4<br>Surge immunity test 2 kV power supply (common mode)) IEC 61000-4-5<br>Surge immunity test 1 kV power supply (differential mode)) IEC 61000-4-5<br>Surge immunity test 1 kV common mode digital I/O) IEC 61000-4-5<br>Surge immunity test 0.5 kV differential mode digital I/O) IEC 61000-4-5<br>Conducted RF disturbances 10 V 0.15...80 MHz) IEC 61000-4-6<br>Conducted emission 150 kHz...30 MHz EN 55011<br>Radiated emission 30 MHz...1 GHz EN 55011 |
| Discrete input number                         | 2 fast input (normal mode) IEC 61131-2 Type 1<br>6 digital input IEC 61131-2 Type 1  |
| Discrete input voltage                        | 24 V DC sink or source (positive/negative)   |
| Number of common point                        | 1 fast input (HSC mode)<br>1 digital input   |
| Discrete input current                        | 7.83 MA fast input<br>5 mA digital   |
| Input impedance                               | 2.81 kOhm<br>4.7 kOhm  |
| Sensor power supply                           | 15...28.8 V DC >= 15 V >= 5 mA <= 5 V <= 1.5 mA<br>15...28.8 V DC >= 15 V >= 2.5 mA <= 5 V <= 1 mA   |
| Configurable filtering time                   | 0 ms no filter none)<br>0.004...0.04 ms bounce filter latch/event and cumulative filter by step Nx0.5ms<br>(64>=N>=2))<br>3...12 ms integrator none/run/stop)  |
| Maximum input frequency                       | 100 KHz fast input (encoder mode) A/B<br>100 KHz fast input single phase<br>100 kHz fast input pulse/direction   |
| Maximum cable distance between devices        | Shielded cable <32.81 ft (10 m) fast input<br>Shielded cable <328.08 ft (100 m) digital input<br>Unshielded cable <164.04 ft (50 m) digital input  |
| Connection pitch                              | 0.14 in (3.5 mm)   |
| Overvoltage protection                        | With   |
| Isolation between channels and internal logic | 500 V DC   |
| Isolation between channels                    | None   |
| Discrete output number                        | 2 fast output (normal mode) source<br>6 digital output source  |
| Discrete output voltage                       | 24 V DC 19.2...28.8 V)transistor<br>24 V DC 5...30 V)relay<br>220 V AC 100...250 V)relay   |
| Input/output number                           | 2 fast input FI0...FI1<br>2 fast output FQ0...FQ1<br>6 digital input DI0...DI5<br>6 digital output DQ0...DQ5   |
| Discrete output current                       | 2 A 4 A)5 ms opening contact digital output<br>2 A 4 A)2 ms closing contact digital output<br>300 mA2 ms fast output (normal mode)<br>50 mA2 ms fast output (PWM or PTO mode)  |
| Insulation resistance                         | > 10 MOhm between the I/O and internal logic<br>> 10 MOhm between power supply and earth   |
| Maximum output frequency                      | 100 KHz fast output (PTO mode)<br>1 kHz fast output (PWM mode)   |
| Absolute accuracy error                       | +/- 0.1 % of full scale cyclic ratio 1...99% fast output (PWM or PTO mode)<br>1 % of full scale cyclic ratio 1...99% fast output (PWM or PTO mode)<br>+/- 5 % of full scale cyclic ratio 10...90% fast output (PWM or PTO mode)<br>+/- 10 % of full scale cyclic ratio 20...80% fast output (PWM or PTO mode)<br>+/- 15 % of full scale cyclic ratio 30...70% fast output (PWM or PTO mode)  |
| Analogue input number                         | 2 analog input<br>2 RTDs   |
| Analogue input range                          | 0...20 mA/4...20 mA 12 bits 250 Ohm +/- 1 %)<br>-10...+10 V or 0...10 V 12 bits + sign >= 1 MOhm   |

|                        |  |
|------------------------|--|
| Analogue input type    | RTD - 200...600 °C 16 bitsPt 100/Pt 1000<br>RTD - 50...200 °C 16 bitsNi 100/Ni 1000<br>RTD - 200...760 °C 16 bits thermocouple J)<br>RTD - 240...1370 °C 16 bits thermocouple K)<br>RTD 0...1600 °C 16 bits thermocouple R)<br>RTD 200...1800 °C 16 bits thermocouple B)<br>RTD 0...1600 °C 16 bits thermocouple S)<br>RTD - 200...400 °C 16 bits thermocouple T)<br>RTD - 200...900 °C 16 bits thermocouple E)<br>RTD - 200...1300 °C 16 bits thermocouple N) |
| Analogue output number | 2 resistive load 12 bits + sign  |
| Analogue output range  | 0...20 mA/4...20 mA > 300 Ohm)open-circuit<br>-10...10 V/0...10 V > 2 kOhm)short-circuit   |
| Height                 | 2.95 in (74.95 mm)   |
| Width                  | 5.04 in (128 mm)   |
| Depth                  | 4.02 in (102 mm)   |
| Net Weight             | 1.21 lb(US) (0.551 kg)   |

## Environment

|                                       |  |
|---------------------------------------|--|
| Standards                             | CSA C22.2 No 213 Class I Division 2<br>EN 61131-2<br>IEC 61000-6-2<br>ANSI/ISA 12-12-01<br>UL 508<br>FCC Class A |
| Product Certifications                | CULus CSA 22-2 No 142<br>CUL 1604 Class 1 Division 2<br>C-tick<br>GOST<br>KCC<br>CULus 508                       |
| Marking                               | CE   |
| Ambient Air Temperature for Operation | 32...122 °F (0...50 °C)  |
| Ambient Air Temperature for Storage   | -4...140 °F (-20...60 °C)  |
| Relative humidity                     | 5...85 % without condensation  |
| Operating altitude                    | <= 6561.68 ft (2000 m)   |
| Storage altitude                      | 0.00...32808.40 ft (0...10000 m)   |
| Maximum pressure                      | 800...1114 hPa   |
| IP degree of protection               | IP20 IEC 60529 rear panel)<br>IP65 IEC 60529 front panel)  |
| NEMA degree of protection             | NEMA 4X front panel  |
| Pollution degree                      | 2 IEC 60664  |
| Environmental characteristic          | Corrosive gas free   |

## Ordering and shipping details

|                       |                        |
|-----------------------|------------------------|
| Category              | 22568-HMI CONTROLLERS  |
| Discount Schedule     | MC2                    |
| GTIN                  | 3595864175560          |
| Nbr. of units in pkg. | 1                      |
| Package weight(Lbs)   | 2.45 lb(US) (1.113 kg) |
| Returnability         | Yes                    |
| Country of origin     | CN                     |

## Packing Units

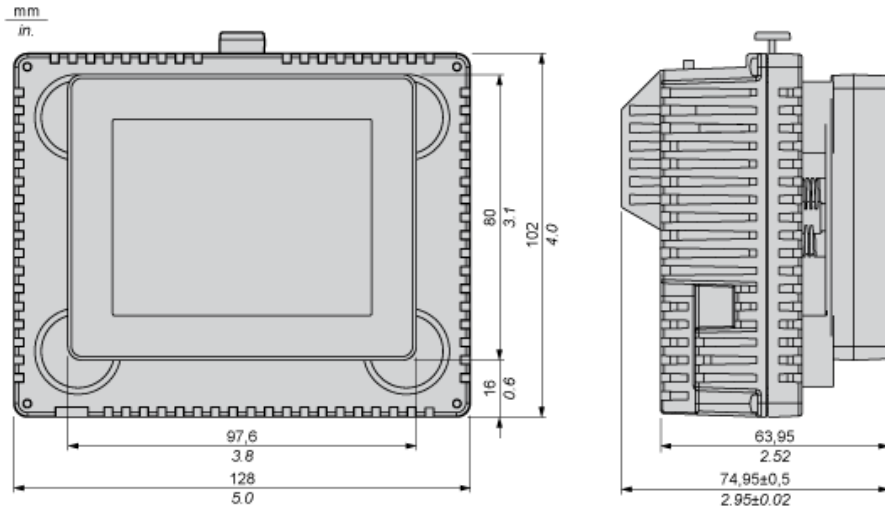
|                              |                       |
|------------------------------|-----------------------|
| Unit Type of Package 1       | PCE                   |
| Package 1 Height             | 7.24 in (18.4 cm)     |
| Package 1 width              | 4.25 in (10.8 cm)     |
| Package 1 Length             | 10.51 in (26.7 cm)    |
| Unit Type of Package 2       | S03                   |
| Number of Units in Package 2 | 4                     |
| Package 2 Weight             | 11.24 lb(US) (5.1 kg) |

|                  |                  |
|------------------|------------------|
| Package 2 Height | 11.81 in (30 cm) |
| Package 2 width  | 11.81 in (30 cm) |
| Package 2 Length | 15.75 in (40 cm) |

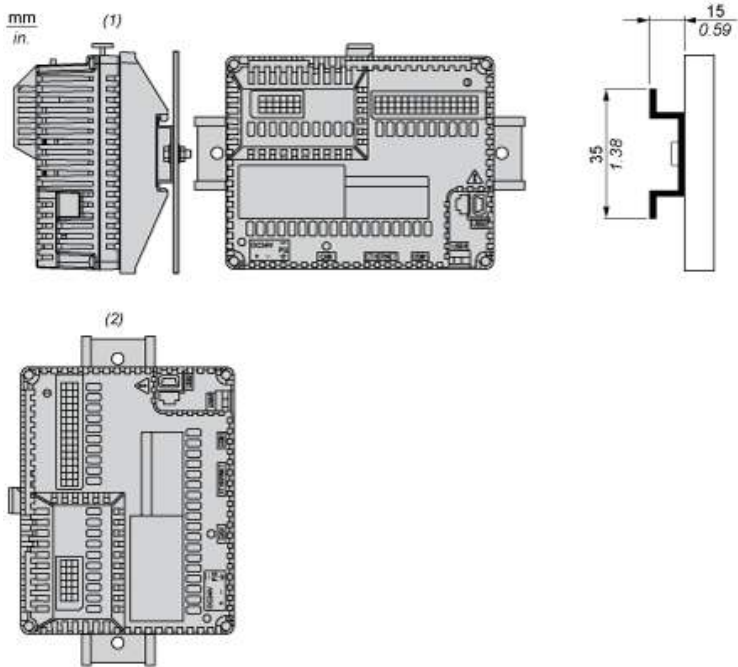
## Offer Sustainability

|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>  |
| Mercury free               | Yes   |
| RoHS exemption information | <a href="#">Yes</a>   |
| China RoHS Regulation      | <a href="#">China RoHS Declaration</a>  |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | <a href="#">End Of Life Information</a>   |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.  |
| Upgradeability             | <a href="#">Upgradeable Through Digital Modules And Upgraded Components</a>   |

## Dimensions

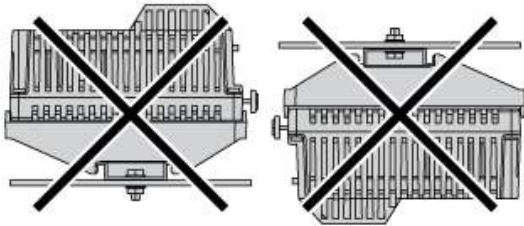


Recommended Mounting position

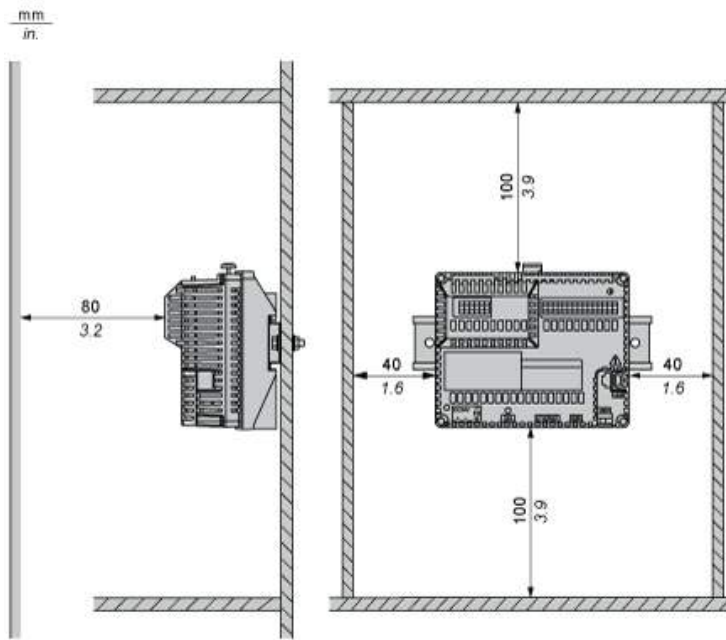


- (1) Horizontal mounting
- (2) Vertical mounting

No Recommended Mounting Position

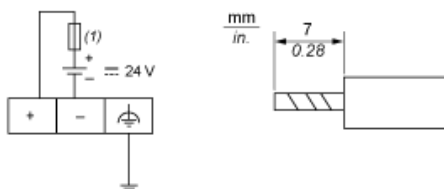


Clearance



Keep adequate spacing for proper ventilation to maintain an ambient temperature between 0...50 °C (32...122 °F) for horizontal installation and 0...40 °C (32...104 °F) for vertical installation.

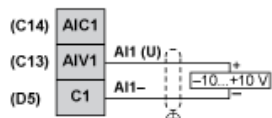
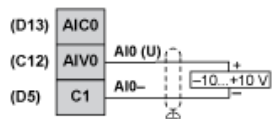
Wiring Diagram



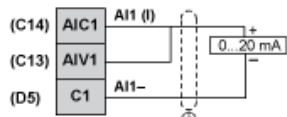
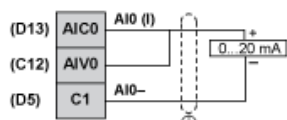
(1) Slow-blow 2A type T fuse

Wiring Diagram of the Analog Inputs and Analog Outputs

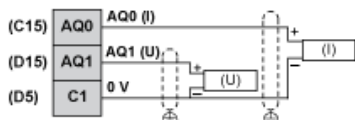
Voltage for Analog Inputs



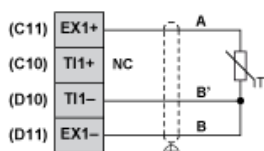
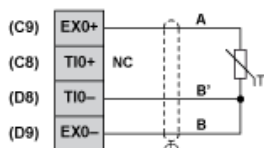
Current for Analog Inputs



Voltage and Current for Analog Outputs

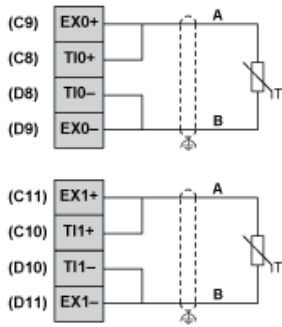


3 Wiring for Analog Inputs PT100

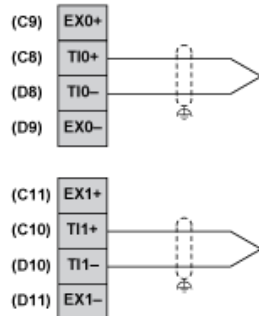




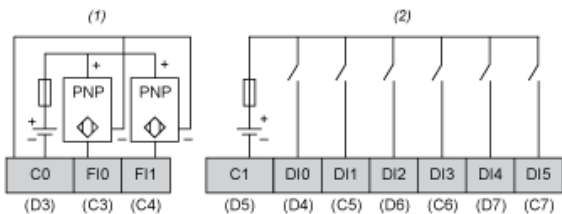
## 2 Wiring for Analog Inputs PT100



## Thermocouple

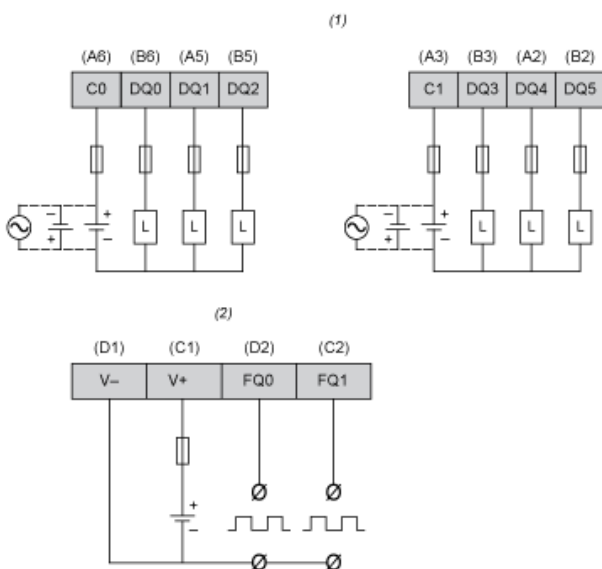


## Wiring Diagram of Digital Inputs



- (1) HSC inputs with pin assignment of terminal blocks C,D.
- (2) Digital inputs with pin assignment of terminal blocks C,D.

## Wiring Diagram of Digital Outputs



- (1) Digital outputs with pin assignment of terminal blocks A,B.
- (2) PWM outputs with pin assignment of terminal blocks C,D.