

Product data sheet

Specifications



5.7" color touch controller panel - Dig 8 inputs/8 outputs +Ana 4 In/2 Out

HMISCU8B5

Main

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|---------------------------|---------------------------------|
| Range of product | Harmony SCU |
| Product or component type | Small touch HMI controller |
| Display size | 5.7 inch |
| Display type | with backlit LED colour TFT LCD |
| Touch panel | Analogue |
| Device presentation | Complete product |

Complementary

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| Display resolution | 320 x 240 pixels QVGA |
| Backlight lifespan | 50000 hours with 65000 colours |
| Brightness | 16 levels via touch panel |
| View angle horiz x vert | 60° left 60° right 40° top 60° bottom |
| Character font | Chinese (simplified Chinese) Japanese (ANK, Kanji) ASCII Korean Taiwanese (traditional Chinese) |
| 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 | 24 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 Internal data storage FRAM, 128 kB Application run DRAM, 128 MB |

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| Integrated connection type | 1 serial link - RJ45 - RS232/RS485 (rate: <= 115.2 kbits/s) 1 Ethernet TCP/IP - RJ45 1 USB 2.0 type mini B 1 USB 2.0 type A CANopen master bus - SUB-D 9 |
| Realtime clock | Built-in |
| Downloadable protocols | Modbus Modbus TCP/IP CANopen |
| Fixing mode | By 1 nut - diameter: Ø 22 mm, mounting on: 1...6 mm thick panel |
| Enclosure material | PC/PBT and PAA |
| Shock resistance | 147 m/s ² for 11 ms (on DIN rail) conforming to IEC 60068-2-27 294 m/s ² for 6 ms (on panel mounting) conforming to IEC 60068-2-27 |
| Vibration resistance | +/- 3.5 mm (f = 5...9 Hz) conforming to IEC 60068-2-6 1 gn (f = 9...150 Hz) conforming to IEC 60068-2-6 |
| Electromagnetic compatibility | Electrostatic discharge immunity test - test level: 8 kV (air discharge) conforming to IEC 61000-4-2 Electrostatic discharge immunity test - test level: 6 kV (contact discharge) conforming to IEC 61000-4-2 Susceptibility to electromagnetic fields - test level: 10 V/m (80 MHz...3 GHz) conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test - test level: 2 kV (power lines) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (between analogue I/O and operating voltage) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 2 kV (relay wires) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (Ethernet line) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (COM line) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (CAN line) conforming to IEC 61000-4-4 Surge immunity test - test level: 2 kV (power supply (common mode)) conforming to IEC 61000-4-5 Surge immunity test - test level: 1 kV (power supply (differential mode)) conforming to IEC 61000-4-5 Surge immunity test - test level: 1 kV common mode (digital I/O) conforming to IEC 61000-4-5 Surge immunity test - test level: 0.5 kV differential mode (digital I/O) conforming to IEC 61000-4-5 Conducted RF disturbances - test level: 10 V (0.15...80 MHz) conforming to IEC 61000-4-6 Conducted emission - test level: 150 kHz...30 MHz conforming to EN 55011 Radiated emission - test level: 30 MHz...1 GHz conforming to EN 55011 |
| Discrete input number | 2 for fast input (normal mode) conforming to IEC 61131-2 Type 1 6 for digital input conforming to IEC 61131-2 Type 1 |
| Discrete input voltage | 24 V DC, discrete input logic: sink or source (positive/negative) |
| Number of common point | 1 for fast input (HSC mode) 1 for digital input |
| Discrete input current | 7.83 mA for fast input 5 mA for digital |
| Input impedance | 4.7 kOhm 2.81 kOhm |
| Sensor power supply | 15...28.8 V DC >= 15 V, current (state 1): >= 5 mA <= 5 V, current (state 0): <= 1.5 mA 15...28.8 V DC >= 15 V, current (state 1): >= 2.5 mA <= 5 V, current (state 0): <= 1 mA |
| Configurable filtering time | 0 ms no filter (none) 0.004...0.04 ms bounce filter (latch/event and cumulative filter by step Nx0.5ms (64>=N>=2)) 3...12 ms integrator (none/run/stop) |
| Maximum input frequency | 100 kHz for fast input (encoder mode) - control type A/B 100 kHz for fast input - control type single phase 100 kHz for fast input - control type pulse/direction |
| Maximum cable distance between devices | Shielded cable: <10 m for fast input Shielded cable: <100 m for digital input Unshielded cable: <50 m for digital input |
| Connection pitch | 3.5 mm |
| Overvoltage protection | With overvoltage protection |
| Isolation between channels and internal logic | 500 V DC |
| Isolation between channels | None |
| Discrete output number | 2 fast output (normal mode), output logic: source 6 digital output, output logic: source |
| Discrete output voltage | 24 V DC (voltage limit: 19.2...28.8 V) with transistor discrete output(s) 24 V DC (voltage limit: 5...30 V) with relay discrete output(s) 220 V AC (voltage limit: 100...250 V) with relay discrete output(s) |
| Input/Output number | 2 for fast input, terminal(s): FI0...FI1 2 for fast output, terminal(s): FO0...FO1 6 for digital input, terminal(s): DI0...DI5 |

6 for digital output, terminal(s): DQ0...DQ5

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| Discrete output current | 2 A 4 A), response time 5 ms with opening contact for digital output 2 A 4 A), response time 2 ms with closing contact for digital output 300 mA, response time 2 ms for fast output (normal mode) 50 mA, response time 2 ms for fast output (PWM or PTO mode) |
| Insulation resistance | > 10 MOhm between the I/O and internal logic > 10 MOhm between power supply and earth |
| Maximum output frequency | 100 kHz for fast output (PTO mode) 1 kHz for fast output (PWM mode) |
| Absolute accuracy error | +/- 0.1 % of full scale cyclic ratio 1...99% for fast output (PWM or PTO mode) 1 % of full scale cyclic ratio 1...99% for fast output (PWM or PTO mode) +/- 5 % of full scale cyclic ratio 10...90% for fast output (PWM or PTO mode) +/- 10 % of full scale cyclic ratio 20...80% for fast output (PWM or PTO mode) +/- 15 % of full scale cyclic ratio 30...70% for fast output (PWM or PTO mode) |
| Analogue input number | 2 for analog input 2 for RTDs |
| Analogue input range | 0...20 mA/4...20 mA - resolution: 12 bits, input impedance: 250 Ohm (tolerance: +/- 1 %) -10...+10 V or 0...10 V - resolution: 12 bits + sign, input impedance: >= 1 MOhm |
| Analogue input type | RTD at - 200...600 °C - resolution: 16 bits temperature probe: Pt 100/Pt 1000 RTD at - 50...200 °C - resolution: 16 bits temperature probe: Ni 100/Ni 1000 RTD at - 200...760 °C - resolution: 16 bits (thermocouple J) RTD at - 240...1370 °C - resolution: 16 bits (thermocouple K) RTD at 0...1600 °C - resolution: 16 bits (thermocouple R) RTD at 200...1800 °C - resolution: 16 bits (thermocouple B) RTD at 0...1600 °C - resolution: 16 bits (thermocouple S) RTD at - 200...400 °C - resolution: 16 bits (thermocouple T) RTD at - 200...900 °C - resolution: 16 bits (thermocouple E) RTD at - 200...1300 °C - resolution: 16 bits (thermocouple N) |
| Analogue output number | 2 resistive load for 12 bits + sign |
| Analogue output range | 0...20 mA/4...20 mA (> 300 Ohm) for open-circuit -10...10 V/0...10 V (> 2 kOhm) for short-circuit |
| Height | 129.4 mm |
| Width | 163 mm |
| Depth | 76.22 mm |
| Net weight | 0.803 kg |

Environment


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| Standards | FCC Class A EN 61131-2 UL 508 IEC 61000-6-2 CSA C22.2 No 213 Class I Division 2 ANSI/ISA 12-12-01 |
| Product certifications | cULus 508 cULus CSA 22-2 No 142 GOST cUL 1604 Class 1 Division 2 C-Tick KCC |
| Marking | CE |
| Ambient air temperature for operation | 0...50 °C |
| Ambient air temperature for storage | -20...60 °C |
| Relative humidity | 5...85 % without condensation |
| Operating altitude | <= 2000 m |
| Storage altitude | 0...10000 m |
| Maximum pressure | 800...1114 hPa |
| IP degree of protection | IP20 (rear panel) conforming to IEC 60529 IP65 (front panel) conforming to IEC 60529 |
| NEMA degree of protection | NEMA 4X front panel |
| Pollution degree | 2 conforming to IEC 60664 |

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| Environmental characteristic | Corrosive gas free |
|------------------------------|--------------------|

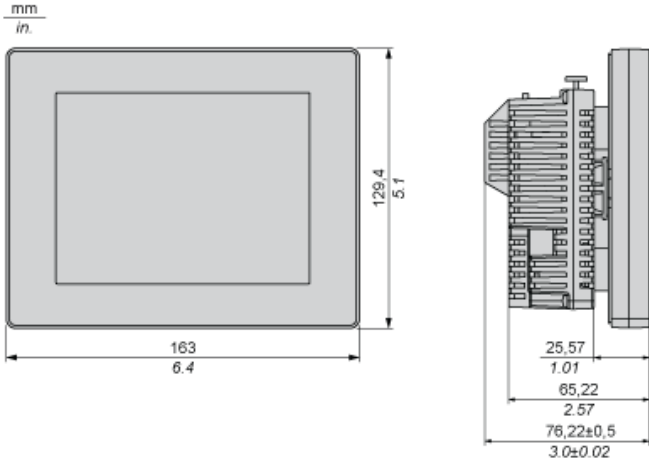
Packing Units

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|------------------------------|------------|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Weight | 1.364 kg |
| Package 1 Height | 18.8 cm |
| Package 1 width | 11 cm |
| Package 1 Length | 20.7 cm |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 4 |
| Package 2 Weight | 5.964 kg |
| Package 2 Height | 30 cm |
| Package 2 width | 30 cm |
| Package 2 Length | 40 cm |
| Unit Type of Package 3 | P12 |
| Number of Units in Package 3 | 64 |
| Package 3 Weight | 135.776 kg |
| Package 3 Height | 75 cm |
| Package 3 width | 80 cm |
| Package 3 Length | 120 cm |

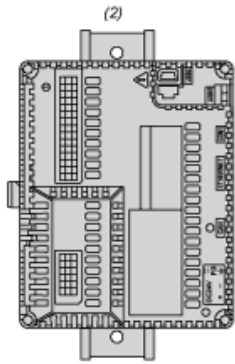
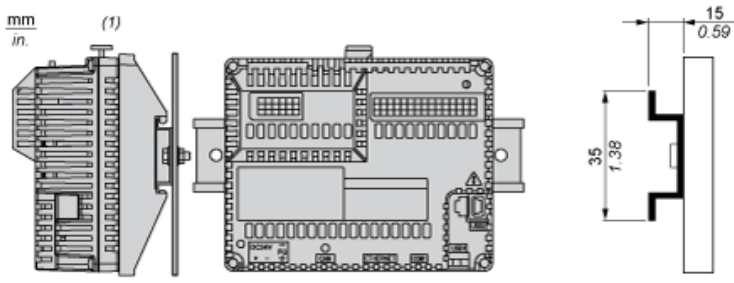
Offer Sustainability

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|----------------------------|---|
| Sustainable offer status | Green Premium product |
| REACH Regulation | REACH Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS declaration |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| 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 www.P65Warnings.ca.gov |
| Upgradeability | Upgradeable through digital modules and upgraded components  |

Dimensions

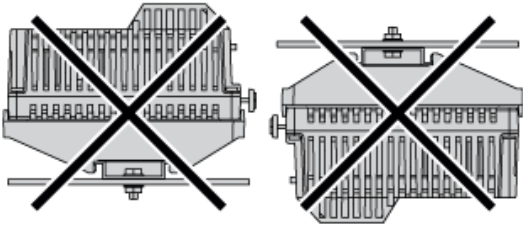


Recommended Mounting position

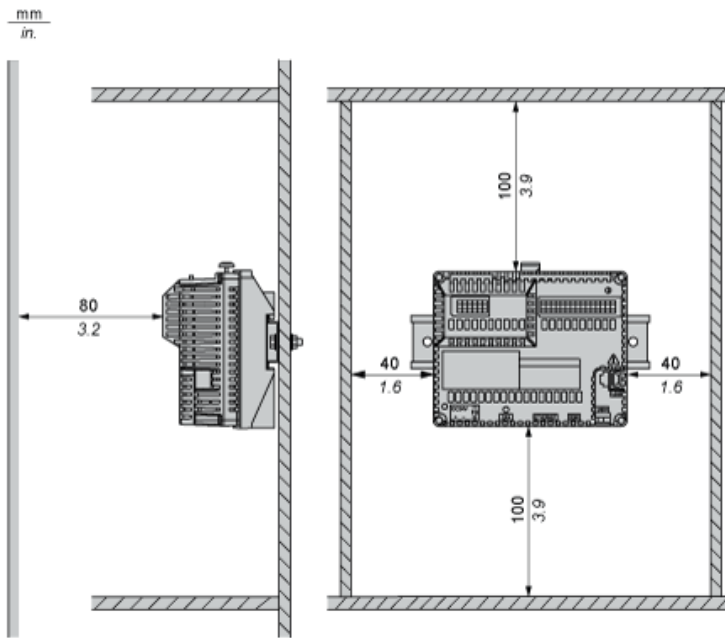


- (1) Horizontal mounting
- (2) Vertical mounting

No Recommended Mounting Position

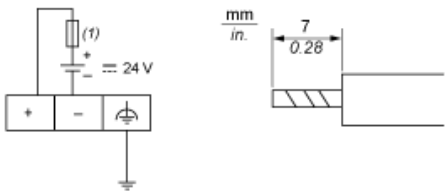


Clearance



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.

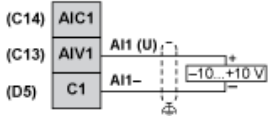
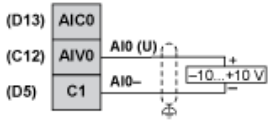
Wiring Diagram



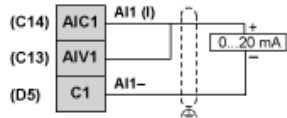
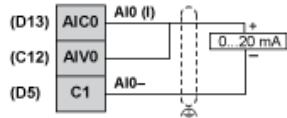
(1) Slow-blow 2A type T fuse

Wiring Diagram of the Analog Inputs and Analog Outputs

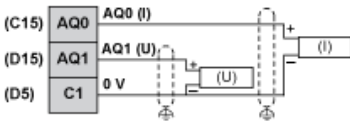
Voltage for Analog Inputs



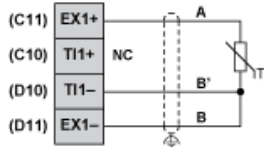
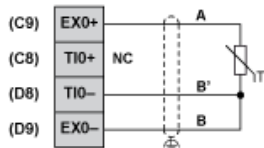
Current for Analog Inputs



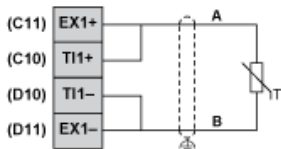
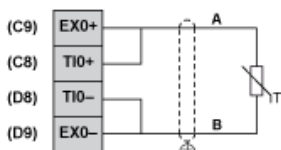
Voltage and Current for Analog Outputs



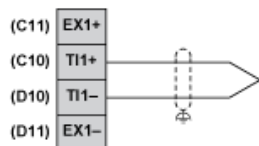
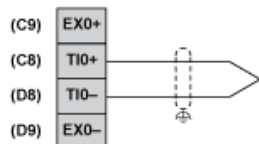
3 Wiring for Analog Inputs PT100



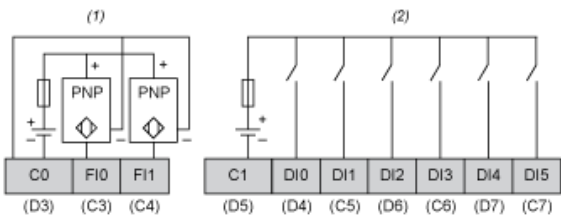
2 Wiring for Analog Inputs PT100



Thermocouple

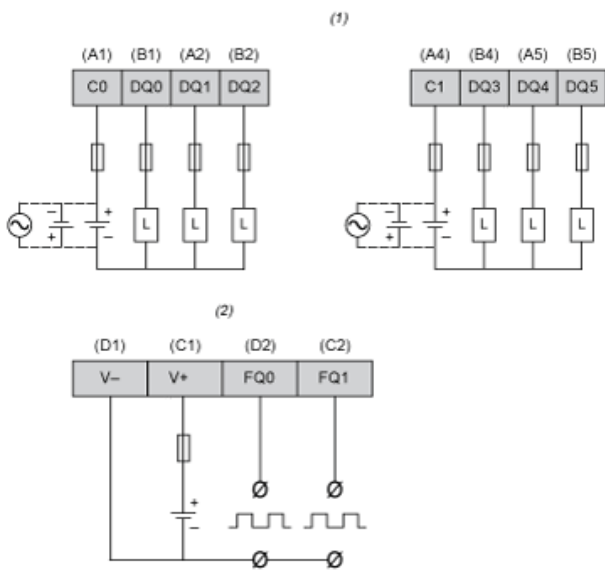


Wiring Diagram of Digital Inputs



- (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.