

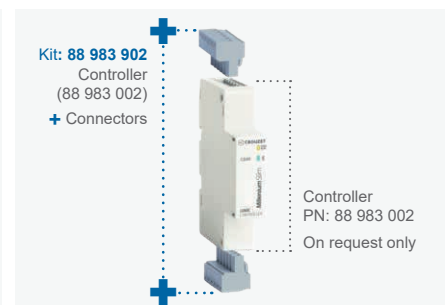
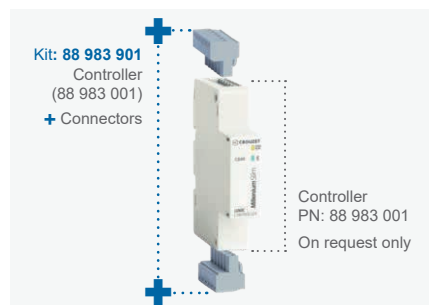
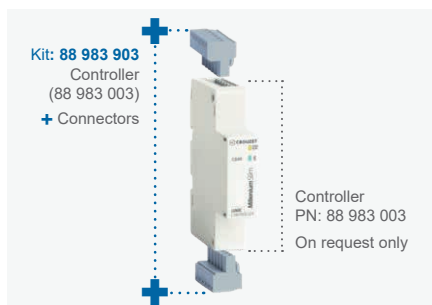
› Logic Controller Millenium Slim

- › A logic controller in a 17.5 mm (0.69") width
- › DIN rail mount and panel mount
- › 8 I/Os: 4 digital inputs (convertibles to analog in DC versions) and 4 digital outputs (relay or static)
- › Highspeed & PWM inputs available in DC versions, PWM outputs available in static versions
- › DC (24V) and AC (110-240V) power supply available
- › Removable connectors
- › Wireless Bluetooth to communicate with other MilleniumSlim logic controllers, retrieve datalog and program transfer
- › Virtual display possible in mobile devices trough Crouzet app
- › Intuitive & easy-to-use graphical programming software (FBD)
- › Certified CE, cULus Listed, NOM, RCM, SCM, UKCA



Millenium Slim

| Product Selection | | | | | | | | |
|-------------------|------------|--|---|----------------|--------------------|-------------------------------------|------------|-------------|
| Type | Total I/Os | Input | Output | Supply Voltage | Communication | Screen | Connectors | Part Number |
| CB8R (AC) | 8 | 4 Inputs › 4 x Digital | 4 Outputs › 4 x 6 A Relay | 110-240 V~ | Bluetooth Embedded | Via App: Crouzet Virtual Display | Included | 88983903 |
| CB8R (DC) | | 4 Inputs › 2 x Convertibles to | 4 Outputs › 4 x 6 A Relay | 24 VDC | | | | 88983901 |
| CB8S (DC) | | <ul style="list-style-type: none"> ▪ Digital ▪ Analog ▪ High-Speed › 2 x Convertibles to <ul style="list-style-type: none"> ▪ Digital ▪ Analog ▪ PWM | 4 Outputs › 4 x 0.5 A Static (Transistor - Sourcing) | | | | | 88983902 |



You have a project? Contact us on www.crouzet.com

Description:

Millenium Slim: The smallest logic controller ever!

Designed for **space reduction** in any control panel or machine thanks to its 17.5 mm (0.69") body, this multipurpose industrial logic controller with 8 highly configurable I/Os, can replace dozens of control panel products, and will give **wireless capabilities** to your applications via Bluetooth. Powered by the **easiest-to-use** and free programming software "CrouzetSoft", a virtual display from any smartphone or PC, remote program transferring and plenty of pre-programmed applications ready to quick-start your next small-scale automation project.

For more information about **Millenium Slim**, please visit www.crouzet.com.

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|---|--|-----------------------------|-----------------------------|
| General Characteristics | | | |
| Part Number | 88983903 | 88983901 | 88983902 |
| Safety certifications | CE, cULus Listed, NOM, RCM, SCM, UKCA | | |
| Environmental certifications | Reach, RoHS | | |
| Conformity with programmable controllers' standard | CEI/EN 61131-2 (Open equipment) | | |
| Conformity with the RADIO directive (in accordance with 2014/53/UE) | <ul style="list-style-type: none"> ▪ EN 61010-1 & EN 61010-2-201: Safety requirements ▪ EN 301489-1 & EN 301489-17: EMC requirements ▪ EN 61000-6-1, EN 61000-6-2, EN 61000-6-3 & EN 61000-6-4: EMC requirements ▪ EN 300328: Radio requirements ▪ EN62311: Health requirements | | |
| Power supply earthing | None | | |
| Overvoltage category | II (in accordance with IEC/EN 60664-1) | | |
| Pollution Degree | 2 (in accordance with IEC/EN 61131-2) | | |
| Maximum utilization altitude | <ul style="list-style-type: none"> ▪ Operation: 2000 m ▪ Transport: 3000 m | | |
| Mechanical resistance | <ul style="list-style-type: none"> ▪ Immunity to vibrations IEC/EN 60068-2-6, Fc test ▪ Immunity to shock IEC/EN 60068-2-27, Ea test ▪ Degrees of protection provided by enclosures of electrical equipment against external mechanical impacts CEI62262: IK07 (test method: 500G steel ball drop, 40cm high) | | |
| Resistance to electrostatic discharge | Immunity to ESD IEC/EN 61000-4-2, level 3 | | |
| Resistance to HF interference (Immunity) | <ul style="list-style-type: none"> ▪ Immunity to radiated electrostatic fields IEC/EN 61000-4-3, level 3 ▪ Immunity to fast transients (burst immunity) IEC/EN 61000-4-4, level 3 ▪ Immunity to shock waves IEC/EN 61000-4-5 ▪ Radio frequency in common mode IEC/EN 61000-4-6, level 3 | | |
| Conducted and radiated emissions (in accordance with EN 55032) | Class B | | |
| Bluetooth protocol | Bluetooth ≥ V5.0 | | |
| Bluetooth range | ≤ 10 m (max. 20 m in free fields) | | |
| Operating temperature | Ventilated enclosure: -20 °C (-4 °F) to +60 °C (140 °F) Non-ventilated enclosure: -20 °C (-4 °F) to +40 °C (104 °F) UL: maximum surrounding air: +50 °C (122 °F) | | |
| Storage temperature | -40 °C (-40 °F) to +80 °C (176 °F) | | |
| Humidity | 95% max. (no condensation or dripping water) | | |
| Connecting capacity | <ul style="list-style-type: none"> ▪ Flexible wire with ferrule: 1 conductor: 0.25 to 2.5 mm² ▪ Flexible wire with ferrule: 2 conductors: 0.25 to 1 mm² (1.5 mm² with ferrule TWIN) ▪ Rigid wire: 1 conductor: 0.2 to 2.5 mm² ▪ Rigid wire: 2 conductors: 0.2 to 1 mm² ▪ Tightening torque: 0.5 N.m (4.5 lb-in) (screw M3, tighten using a flat screwdriver) ▪ Stripping length: 7 mm | | |
| Housing material | Makrolon, UL94V0 | | |
| Housing Color | Light Gray RAL 7035 | | |
| Degree of protection | <ul style="list-style-type: none"> ▪ IP 40 on front panel ▪ IP 20 excluding terminal blocks | | |
| Weight | <ul style="list-style-type: none"> ▪ Without packing: 103g (88983903), 97g (88983901), 79g (88983902) ▪ With unitary packing: 119g (88983903), 113g (88983901), 95g (88983902) | | |
| Dimensions | <ul style="list-style-type: none"> ▪ Without packing: 18 x 90 x 69.6 mm (excluding terminal blocks and DIN rail clip) ▪ With unitary packing: 22 x 137 x 74 mm | | |
| Connectors Type | Removable Connectors with compatibility for Screw connectors or Cage Clamp connectors (see installation sheet for compatible connectors recommended) | | |
| DIN rail mounting | Mounting in 35 mm symmetrical DIN rail (see installation sheet of instructions), compatible with modular enclosures | | |
| Panel mounting | Flat panel mounting by screws (see installation sheet of instructions) | | |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|--|--|-----------------------------|-----------------------------|
| Processing Characteristics | | | |
| Part Number | 88983903 | 88983901 | 88983902 |
| HMI / MMI | <ul style="list-style-type: none"> ▪ 1 green Led for Power/Status ▪ 1 blue Led for Bluetooth ▪ Virtual display & keypad with Crouzet Virtual Display or Crouzet Soft | | |
| Programming Software | Crouzet Soft | | |
| Programming method | FBD (Function Block Diagram), including SFC (Sequential Function Chart) (Grafcet) | | |
| Program size | <ul style="list-style-type: none"> ▪ Function blocks: typically 350 blocks (1024 max.) ▪ Macro blocks: 127 max. (255 blocks per macro) | | |
| Program memory | Flash | | |
| Data memory | 2 k octets | | |
| Back-up time (in the event of power failure) | <ul style="list-style-type: none"> ▪ Program and settings in the controller: 10 years ▪ Data memory: 10 years | | |
| Data back-up | Data backup in the flash memory is guaranteed if the product is powered on more than 10 seconds | | |
| Cycle time | From 2 ms* to 90 ms, default value: 10 ms *: Depending on program memory | | |
| Clock data retention | 10 years (lithium battery) at 25 °C (77 °F) | | |
| Clock drift | Drift < 12 min/year (at 25 °C (77 °F)) 6 s / month (at 25 °C (77 °F) with user-definable correction of drift). | | |
| Timer block accuracy | 0.5 % ± 2 cycle time | | |
| Startup time on power up | < 3 s | | |
| Self-test | <ul style="list-style-type: none"> ▪ Test firmware integrity (checksum memory) ▪ Stability of the internal power supply ▪ Check the conformity of the device configuration with the configuration in the application program. | | |

| Power Supply | | | |
|--|---|--|--|
| Part Number | 88983903 | 88983901 | 88983902 |
| Nominal supply voltage | 110 V \sim → 240 V \sim | 24 V --- | |
| Voltage supply tolerance | -15% / +10% | -15% / +20% | |
| Operating limits | 93.5 → 264 V \sim * Accepts temporary overvoltage occurring on the power network | 20.4 → 28.8 V --- * Accepts temporary overvoltage occurring on the power network | |
| AC supply voltage frequency | 50/60Hz (-6% / +5%) so 47Hz → 53Hz / 57 → 63Hz | N/A | |
| Immunity to power micro cuts | ≤ 10 ms (repetition 20 times) | ≤ 1 ms (repetition 20 times) | |
| Max. absorbed power | <ul style="list-style-type: none"> ▪ 6.9 VA @ 240 V\sim ▪ 6 VA @ 240 V\sim I/Os = 0 | <ul style="list-style-type: none"> ▪ 1.2 W @ 24 V--- ▪ 1.56 W @ 28.8 V---, ▪ 0.5 W @ 24 V--- I/Os = 0 | <ul style="list-style-type: none"> ▪ 0.75 W @ 24 V--- ▪ 0.8 W @ 28.8 V---, ▪ 0.5 W @ 24 V--- I/Os = 0 |
| Protection against polarity inversions | Not applicable | Yes | |
| Power monitoring | Yes, but no value available through the application "FB Status" | Yes, and value available through the application "FB Status", 1/10V, 5% of full scale | |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|---|--|--|-----------------------------|
| Inputs | | | |
| Part Number | 88983903 | 88983901 | 88983902 |
| Used as Digital Inputs | | | |
| Quantity | 4 digital inputs -> from I1 to I4 | | |
| Rated voltage | 110 V \sim → 240 V \sim | 24 V --- | |
| Voltage tolerance | -15% / +10% | -15% / +20% | |
| Operating limits | 93.5 → 264 V \sim | 20.4 → 28.8 V --- | |
| Input current | <ul style="list-style-type: none"> ▪ 0.25 mA @ 93.5 V\sim ▪ 0.3 mA @ 110 V\sim ▪ 0.6 mA @ 230 V\sim ▪ 0.7 mA @ 265 V\sim | <ul style="list-style-type: none"> ▪ 1.8 mA @ 20.4 V ▪ 2.1 mA @ 24 V ▪ 2.5 mA @ 28.8 V | |
| Input frequency | 50/60Hz (-6% / +5%) so 47% → 53Hz / 57 → 63Hz | N/A | |
| Input impedance | 559 k Ω | 11.7 k Ω | |
| Logic 1 voltage threshold | \geq 79 V \sim | \geq 11 V --- | |
| Making current at logic state 1 | \geq 0.2 mA | \geq 1 mA | |
| Logic 0 voltage threshold | \leq 45 V \sim | \leq 9 V --- | |
| Release current at logic state 0 | \leq 0.1 mA | \leq 0.8 mA | |
| Response time | 1 to 2 cycle times | | |
| Sensor type | Contact or 3-wire PNP | | |
| Conforming to IEC/EN 61131-2 | Type 1 | | |
| Input type | Resistive | | |
| Isolation between power supply and inputs | None | | |
| Isolation between inputs | None | | |
| Protection against polarity inversions | Not applicable | Yes | |
| Status indicator | Yes, on Virtual Display (CVD & Crouzet Soft) | | |
| Cable length | \leq 30 m | | |
| Used as High-Speed Inputs | | | |
| Quantity | N/A | 2 High-Speed inputs -> from I1 to I2 | |
| Input voltage | N/A | 24 V --- | |
| Voltage tolerance | N/A | -5% / +20% | |
| Operating limits | N/A | 22.8 → 28.8 V --- | |
| Input current | N/A | <ul style="list-style-type: none"> ▪ 1.9 mA @ 22.8 V ▪ 2.1 mA @ 24 V ▪ 2.5 mA @ 28.8 V | |
| Input impedance | N/A | 11.7 k Ω | |
| Logic 1 voltage threshold | N/A | \geq 22.8 V --- | |
| Making current at logic state 1 | N/A | \geq 1.9 mA | |
| Logic 0 voltage threshold | N/A | \leq 12 V --- | |
| Release current at logic state 0 | N/A | \leq 1 mA | |
| Maximum counting frequency | N/A | <ul style="list-style-type: none"> ▪ 2 independent counters: 5 kHz* ▪ Function: UP and DOWN <p>* with a time cycle \leq 10 ms and a ton / toff = 50% \pm 5%, level 0 < 12V and level 1 > 22.8V</p> | |
| Cable length | N/A | \leq 3 m with shielded twisted cable | |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|----------------------------------|-----------------------------|---|-----------------------------|
| Used as PWM Inputs | | | |
| Quantity | N/A | 2 PWM inputs -> from I3 to I4 | |
| Input voltage | N/A | 24 V $\overline{\text{---}}$ | |
| Voltage tolerance | N/A | -5% / +20% | |
| Operating limits | N/A | 22.8 \rightarrow 28.8 V $\overline{\text{---}}$ | |
| Input current | N/A | <ul style="list-style-type: none"> ▪ 1.9 mA @ 22.8 V ▪ 2.1 mA @ 24 V ▪ 2.5 mA @ 28.8 V | |
| Input impedance | N/A | 11.7 k Ω | |
| Logic 1 voltage threshold | N/A | \geq 22.8 V $\overline{\text{---}}$ | |
| Making current at logic state 1 | N/A | \geq 1.9 mA | |
| Logic 0 voltage threshold | N/A | \leq 12 V $\overline{\text{---}}$ | |
| Release current at logic state 0 | N/A | \leq 1 mA | |
| Input frequency | N/A | from 10 Hz to 1 KHz | |
| Restitution | N/A | 0 to 100% duty cycle reading | |
| Accuracy | N/A | 5% with duty cycle between 10% and 90% | |
| Cable length | N/A | \leq 30 m | |

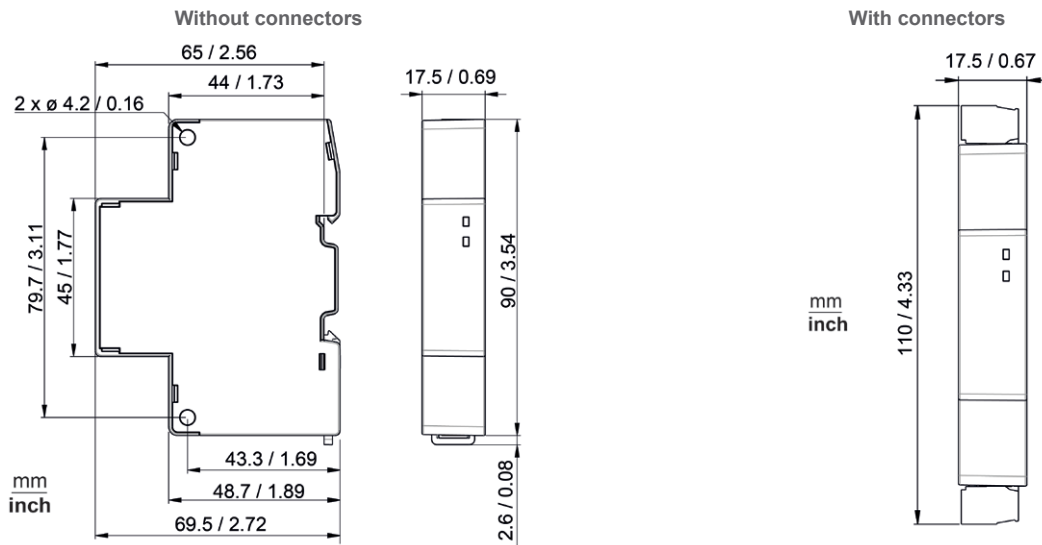
| Used as Analog Inputs | | | |
|---|-----|---|--|
| Quantity | N/A | 4 analog inputs -> from I1 to I4 | |
| Measuring range | N/A | <ul style="list-style-type: none"> ▪ 0 \rightarrow 10 V ▪ 0 \rightarrow V power supply or Voltmeter | |
| Input impedance | N/A | 11.7 k Ω | |
| Maximum value without destruction | N/A | <ul style="list-style-type: none"> ▪ 28.8 V$\overline{\text{---}}$ max for 0 \rightarrow 10 V and 0 \rightarrow V power supply ▪ 30.5 V$\overline{\text{---}}$ max for Voltmeter | |
| Input type | N/A | Common mode | |
| Resolution | N/A | 12 bits at maximum input voltage (10 bits at 10V) | |
| Value of LSB | N/A | 7.03 mV | |
| Conversion time | N/A | Controller cycle time | |
| Maximum error in 0-10V mode | N/A | <ul style="list-style-type: none"> ▪ \pm 3.5 % of full scale at 25 $^{\circ}$C (77 $^{\circ}$F) ▪ \pm 5 % of full scale at 55 $^{\circ}$C (131 $^{\circ}$F) | |
| Maximum error in 0-V power supply mode | N/A | <ul style="list-style-type: none"> ▪ \pm 5 % of full scale at 25 $^{\circ}$C (77 $^{\circ}$F) ▪ \pm 6.2 % of full scale at 55 $^{\circ}$C (131 $^{\circ}$F) | |
| Repeat accuracy at 55 $^{\circ}$ C (131 $^{\circ}$ F) | N/A | \pm 2 % | |
| Voltmeter | N/A | from 0 to 30.5 V Accuracy: \pm 5% of full scale at 25 $^{\circ}$ C (77 $^{\circ}$ F) \pm 6.2 % of full scale at 55 $^{\circ}$ C (131 $^{\circ}$ F) | |
| Isolation between analogue channel and power supply | N/A | None | |
| Protection against polarity inversions | N/A | Yes | |
| Potentiometer control | N/A | 2.2 k Ω / 0.5 W (recommended), 10 K Ω max. | |
| Cable length | N/A | \leq 10 m with shielded twisted cable (sensor not isolated) | |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|--|--|---|-----------------------------|
| Outputs | | | |
| Part Number | 88983903 | 88983901 | 88983902 |
| Relay Outputs | | | |
| Quantity | 4 relay outputs, from O1 to O4 | | N/A |
| Breaking voltage | <ul style="list-style-type: none"> ▪ 30 V$\overline{\text{---}}$ max ▪ 250 V\sim max | | N/A |
| Breaking current in the outputs | <ul style="list-style-type: none"> ▪ @ 25 °C -> O1, O2, O3, & O4: 6A max ▪ @ 40 °C -> O1, O2, O3, & O4: 4A max ▪ @ 55 °C -> O1, O2, O3, & O4: 2A max ▪ @ 60 °C -> O1, O2, O3, & O4: 1.3A max | | N/A |
| Breaking current in the common | <ul style="list-style-type: none"> ▪ @ 25 °C -> C1: 10A max & C2: 8A max ▪ @ 40 °C -> C1 & C2: 8A max ▪ @ 55 °C -> C1 & C2: 4A max ▪ @ 60 °C -> C1 & C2: 2.6A max | | N/A |
| Mechanical life | 10 000 000 operations (cycles) | | N/A |
| Electrical durability | 100 000 operations (cycles) resistive loads, @ 25 °C | | N/A |
| Electrical durability for 100 000 operating cycles | Resistive <ul style="list-style-type: none"> ▪ 24 V$\overline{\text{---}}$ tau = 0 ms: 6 A (UL/CUL: 5A) ▪ 250 V\sim cos phi = 1: 6 A Inductive <ul style="list-style-type: none"> ▪ 1/4 HP 250 V\sim @ 25 °C | | N/A |
| Minimum switching capacity | 100 mA (at minimum voltage of 12V) | | N/A |
| Maximum operating rate | 360 per hour | | N/A |
| Response time | <ul style="list-style-type: none"> ▪ Make = 1 cycle time + 8 ms max ▪ Release = 1 cycle time + 5 ms max | | N/A |
| Isolation between power supply and outputs | Reinforced insulation | | N/A |
| Isolation between outputs | Simple isolation between block C1 / O1 / O2 and C2 / O3 / O4 | | N/A |
| Built-in protections | <ul style="list-style-type: none"> ▪ Against short-circuits: None ▪ Against over voltages and overload: None | | N/A |
| Status indicator | Yes, on Virtual Display (CVD & Crouzet Soft) | | N/A |
| Cable length | ≤ 30 m | | N/A |
| Static (Transistor) Outputs | | | |
| Quantity | N/A | 4 static outputs -> from O1 to O4 | |
| Breaking voltage | N/A | 10 → 28.8 V $\overline{\text{---}}$ | |
| Nominal voltage | N/A | 12 / 24 V $\overline{\text{---}}$ | |
| Nominal breaking current | N/A | 0.5 A | |
| Maximum breaking current | N/A | 0.7 A | |
| Breaking current in the common | N/A | 2.8 A | |
| Voltage drop | N/A | < 2V for I=0.5A | |
| Min. load | N/A | 1 mA | |
| Response time | N/A | <ul style="list-style-type: none"> ▪ Make = 1 cycle time + 60 μs max ▪ Release = 1 cycle time + 60 μs max | |
| Built-in protections | N/A | <ul style="list-style-type: none"> ▪ Against overloads and short-circuits: Yes ▪ Against over voltages (*): Yes (*) In the absence of a volt-free contact between the output of the logic controller and the load ▪ Against inversions of power supply: Yes ▪ Current limitation (min: 1.1A, max: 2.6A, @VCC: 24 V$\overline{\text{---}}$, Rload < 10mOhms) | |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|--|-----------------------------|-----------------------------|--|
| Isolation between power supply and outputs | N/A | | None |
| Isolation between outputs | N/A | | None |
| Wiring | N/A | | PNP (Load Common at 0V) |
| Status indicator | N/A | | Yes, on Virtual Display (CVD & Crouzet Soft) |
| Cable length | N/A | | ≤ 10 m |

| Static PWM Outputs | | | |
|----------------------|-----|--|---|
| Quantity | N/A | | 4 static outputs -> from O1 to O4 |
| PWM frequency | N/A | | 20 Hz to 1500 Hz |
| PWM duty cycle | N/A | | 0 → 100 % |
| PWM Max. error | N/A | | < 2% (de 10% à 90%) |
| Built-in protections | N/A | | <ul style="list-style-type: none"> ▪ Against overloads and short-circuits: Yes ▪ Against over voltages (*): Yes (* In the absence of a volt-free contact between the output of the logic controller and the load ▪ Against inversions of power supply: Yes ▪ Current limitation (min: 1.1A, max: 2.6A, @VCC: 24 V_{DC}, Rload < 10mOhms) |
| Cable length | N/A | | ≤ 10 m |

| | Millenium Slim CB8R (AC) | Millenium Slim CB8R (DC) | Millenium Slim CB8S (DC) |
|--|-----------------------------|-----------------------------|-----------------------------|
| Product Dimensions | | | |
| Side and Front Dimensions | | | |
| Dimensions valid for: 88983903 - 88983901 - 88983902 | | | |



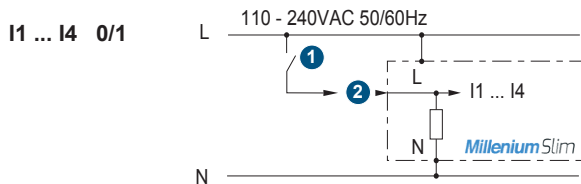
Electronic & Wiring Diagrams

Inputs

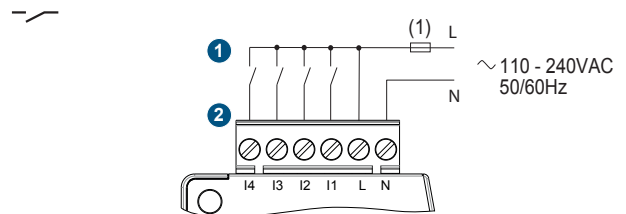
Digital Inputs (AC Voltage)

Millenium Slim - Type CB8R AC - 88983903 → Inputs I1, I2, I3 and I4

Electronic Diagram



Wiring Diagram



- ① Contact
- ② Digital Input

(1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)
L: Line
N: Neutral

I1.. I4: Inputs I1, I2, I3 and I4

Inputs

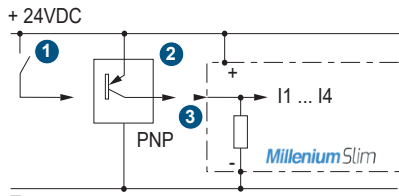
Digital Inputs (DC Voltage)

Millenium Slim - Type CB8R DC - 88983901 → Inputs I1, I2, I3 and I4

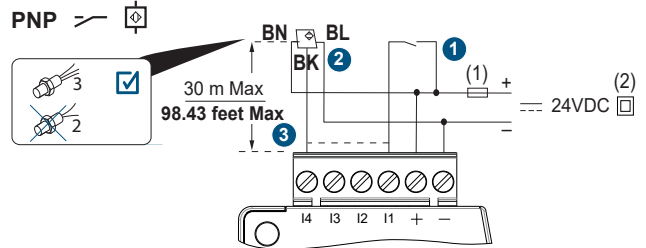
Millenium Slim - Type CB8S DC - 88983902 → Inputs I1, I2, I3 and I4

Electronic Diagram

I1 ... I4 0/1



Wiring Diagram



- 1 Contact
- 2 3-wire PNP sensor
- 3 Digital Input

I1.. I4: Inputs I1, I2, I3 and I4

(1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)

(2) Isolating source

BN: Brown cable of the 3-Wire PNP sensor

BL: Blue cable of the 3-Wire PNP sensor

BK: Black cable of the 3-Wire PNP sensor

Inputs

High-Speed Inputs (Wiring of 3-wire PNP sensors)

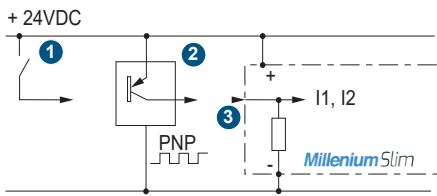
Millenium Slim - Type CB8R DC - 88983901 → Inputs I1 and I2

Millenium Slim - Type CB8S DC - 88983902 → Inputs I1 and I2

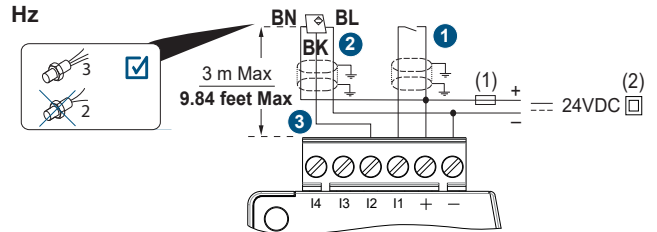
Electronic Diagram

I1, I2

HIGH SPEED



Wiring Diagram



- 1 Contact
- 2 3-wire PNP sensor
- 3 Digital Input

I1, I2: Inputs I1 and I2

(1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)

(2) Isolating source

BN: Brown cable of the 3-Wire PNP sensor

BL: Blue cable of the 3-Wire PNP sensor

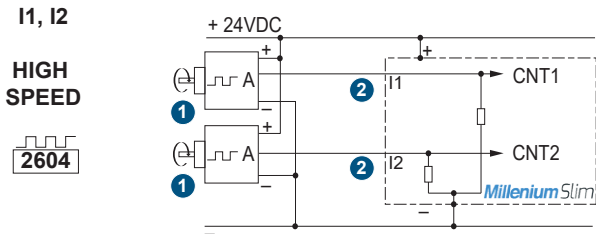
BK: Black cable of the 3-Wire PNP sensor

Inputs

High-Speed Inputs (Wiring of Encoders)

Millenium Slim - Type CB8R DC - 88983901 → Inputs I1 and I2
 Millenium Slim - Type CB8S DC - 88983902 → Inputs I1 and I2

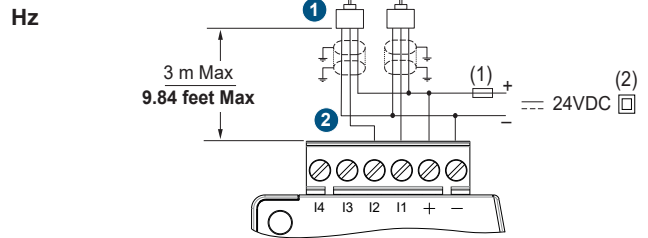
Electronic Diagram



- 1 Encoder
- 2 High-Speed Input

I1, I2: Inputs I1 and I2

Wiring Diagram



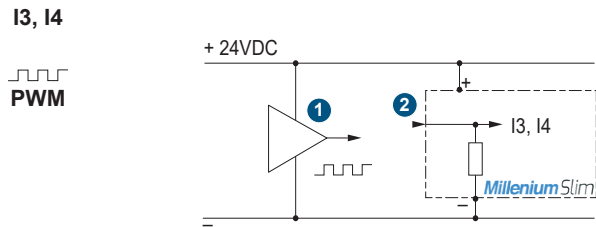
- (1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)
- (2) Isolating source

Inputs

PWM Inputs

Millenium Slim - Type CB8R DC - 88983901 → Inputs I3 and I4
 Millenium Slim - Type CB8S DC - 88983902 → Inputs I3 and I4

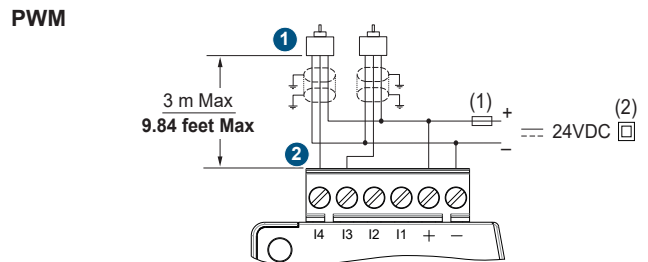
Electronic Diagram



- 1 PWM Source
- 2 PWM Inputs

I3, I4: Inputs I3 and I4

Wiring Diagram



- (1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)
- (2) Isolating source

Inputs

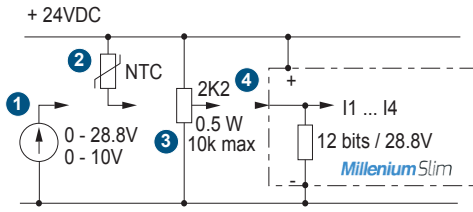
Analog Inputs

Millenium Slim - Type CB8R DC - 88983901 → Inputs I1, I2, I3 and I4

Millenium Slim - Type CB8S DC - 88983902 → Inputs I1, I2, I3 and I4

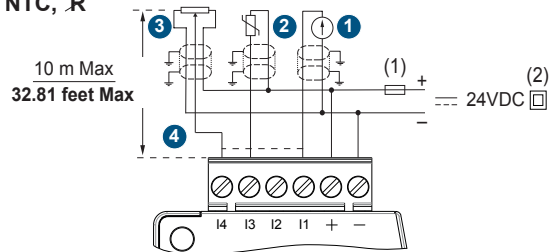
Electronic Diagram

I1 ... I4 U



Wiring Diagram

28.8 V, NTC, R



- 1 0-10 V
- 2 NTC Probe
- 3 Potentiometer
- 4 Analog Input

- (1) 1A (UL248) quick blowing fuse, circuit breaker, or circuit protector (US)
- (2) Isolating source

I1... I4: Inputs I1, I2, I3 and I4

Outputs

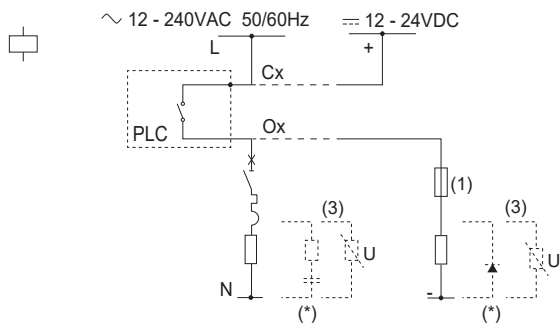
Relay Outputs

Millenium Slim - Type CB8R AC - 88983903 → Outputs O1, O2, O3 and O4

Millenium Slim - Type CB8R DC - 88983901 → Outputs O1, O2, O3 and O4

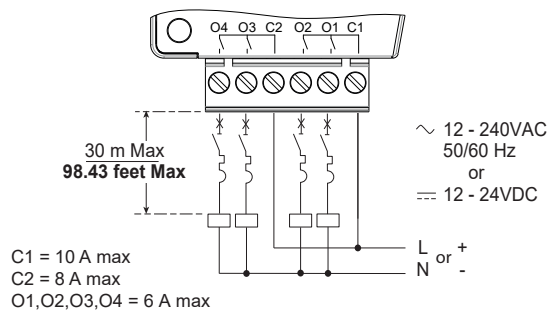
Electronic Diagram

O1 ... O4



Wiring Diagram

6 A



- C1 = 10 A max
- C2 = 8 A max
- O1, O2, O3, O4 = 6 A max

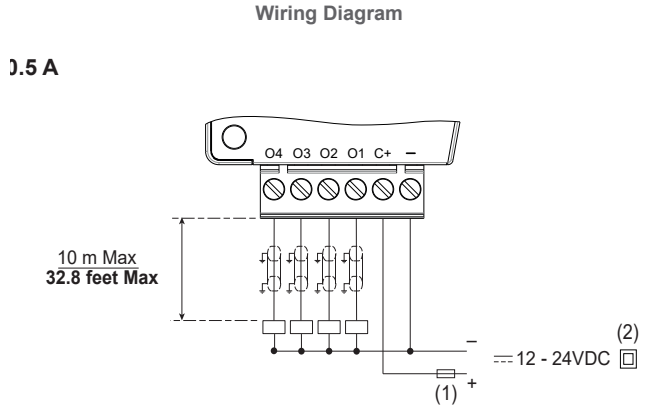
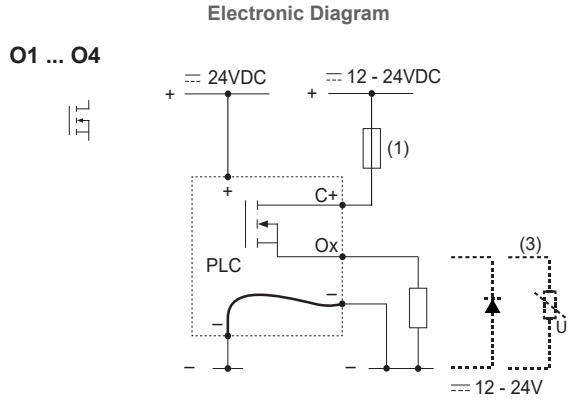
(*) Protection
*PLC: Millenium Slim Logic Controller

Common limits currents
O1+O2= 10A max @25C (8A @40C, 4A @55C, 2.6 @ 60C)
O3+O4=8A max @25C (8A @40C, 4A @ 55C, 2.6 @ 60C)

Outputs

Static / PWM Outputs

Millenium Slim - Type CB8S DC - 88983902 → Outputs O1, O2, O3 and O4



(3) Inductive load
 *PLC: Millenium Slim Logic Controller

(1) 1A (UL248) quick-blowing fuse, circuit-breaker, or circuit protector (US)
 (2) Isolating source

Accessories

BLUETOOTH DONGLE



| Description | Part Number |
|--|-----------------|
| USB Dongle Bluetooth, CE, FCC and IC certified | 88980124 |

SIGNAL CONVERTER



| Description | Part Number |
|-------------------|-----------------|
| 0-20 mA to 0-10 V | 88950108 |

TEMPERATURE PROBES



| Description | Part Number |
|-----------------|-----------------|
| NTC2, PVC probe | 89750174 |



| | |
|-----------------|-----------------|
| NTC1, TPE probe | 89750180 |
|-----------------|-----------------|



| | |
|------------------|-----------------|
| NTC2, INOX probe | 89750182 |
|------------------|-----------------|



| | |
|-----------------|-----------------|
| NTC2, POM probe | 89750185 |
|-----------------|-----------------|



| | |
|----------------------|-----------------|
| NTC3, SILICONE probe | 89750186 |
|----------------------|-----------------|

TEMPERATURE CONVERTERS



| Description | Part Number |
|----------------------------|-----------------|
| Pt1000 3-wire | 88950150 |
| Pt100 3-wire (-40 → +40°C) | 88950151 |
| Pt100 3-wire (0 → +100°C) | 88950152 |
| Pt100 3-wire (0 → +250°C) | 88950153 |
| Thermocouple J | 88950154 |
| Thermocouple K | 88950155 |

POWER SUPPLIES



| Description | Part Number |
|----------------|-----------------|
| Modular of 10W | 89451001 |



| | |
|----------------|-----------------|
| Modular of 30W | 89451003 |
|----------------|-----------------|



| | |
|----------------|-----------------|
| Modular of 60W | 89451006 |
|----------------|-----------------|



| | |
|-----------------|-----------------|
| Modular of 100W | 89451010 |
|-----------------|-----------------|

TEMPERATURE SENSORS



| Description | Part Number |
|-------------|-----------------|
| Air Sensor | 89750190 |



| | |
|------------|-----------------|
| Duct Probe | 89750191 |
|------------|-----------------|



| | |
|----------------|-----------------|
| External Probe | 89750192 |
|----------------|-----------------|



| | |
|--------------------|-----------------|
| Remote/Submersible | 89750193 |
|--------------------|-----------------|

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