› Logic Controller Millenium Evo

- High performance Logic Controller up to 44 I/Os - 16 DI (4 HighSpeed/8 AI) - 8 DO
- Wireless programming & Control with bluetooth Interface and Crouzet Virtual Display
- Modbus TCP/IP (Client/Server) and Modbus RTU Network (Slave)
- Event and Datalog Managment via mail/FTP server or Locally
- Up to 1000 programing blocks with intuitive Crouzet Soft to go from simple to complex applications

XBP24
Base 24 I/O

XBP24-E
Base 24 I/O Ethernet

XDP24
Base 24 I/O

XDP24-E
Base 24 I/O Ethernet

Product selection		
LCD display	**Ethernet network**	**Part number**
No	No	**88 975 001**
No	yes	**88 975 011**
Yes	No	**88 975 101**
Yes	Yes	**88 975 111**

	XBP24	XBP24-E	XDP24	XDP24-E
General characteristics				
Part number	**88 975 001**	**88 975 011**	**88 975 101**	**88 975 111**
Products certification	CE, cULus Listed			
Conformity with the low voltage directive (in accordance with 2014/35/EU)	IEC/EN 61131-2 (Open equipment)			
Conformity with the EMC directive (in accordance with 2014/30/EU)	IEC/EN 61000-6-1 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-2 (Industrial) IEC/EN 61000-6-3 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-4 (Industrial)			
Power supply earthing	None			
Overvoltage category	3 in accordance with IEC/EN 60664-1			
Pollution	Degree : 2 in accordance with IEC/EN 61131-2			
Maximum utilization altitude	Operation: 2000 m Transport: 3000 m			
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, Fc test Immunity to shock IEC/EN 60068-2-27, Ea test			
Resistance to electrostatic discharge	Immunity to ESD IEC/EN 61000-4-2, level 3			
Resistance to HF interference (Immunity)	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 55022/11 group 1)	Class B			
Operation temperature	20 °C (-4 °F) → +60 °C (140 °F) (+40 °C (104 °F) in a non-ventilated enclosure) UL: maximum surrounding air: +50 °C (122 °F)			
Storage temperature	40°C (-40 °F) → +80°C (176 °F)			

Standard product Product made to order Contact us

	XBP24	XBP24-E	XDP24	XDP24-E
Relative humidity	95% max. (no condensation or dripping water)			
Screw terminals connection capacity	Flexible wire with ferrule: 1 conductor: 0.2 to 2.5 mm2 (AWG 24-14) Flexible wire with ferrule: 2 conductors: 0.2 to 0.75 mm2 (AWG 24-18) Rigid wire: 1 conductor: 0.2 to 2.5 mm2 (AWG 24-14) Rigid wire: 2 conductors: 0.2 to 0.75 mm2 (AWG 24-18) Tightening torque: 0.5 N.m (4.5 lb-in) (tighten using screwdriver diam. 3.5 mm) Stripping length: 6 mm			
Material	Lexan, UL94V0, Halogen free 1272/2008/CE			
On front panel color	Grey RAL 7035			
On sole color	Black RAL 9011			
Protection rating (in accordance with IEC/EN 60529)	IP 40 on front panel IP 20 on terminal block			
Weight	Without packing: 270 g With packing: 320 g	Without packing: 300 g With packing: 350 g		Without packing: 330 g With packing: 380 g
Dimensions	Without packing: 124.6 x 90 x 61.1 mm / 4.91 x 3.54 x 2.4 inch With packing: 148 x 103 x 65 mm / 5.83 x 4.06 x 2.56 inch		Without packing: 124.6 x 90 x 62 mm / 4.91 x 3.54 x 2.44 inch With packing: 148 x 103 x 65 mm / 5.83 x 4.06 x 2.56 inch	
Processing characteristics				
LCD display	Without	Without		
Programming method	FBD (Function Block Diagram), including SFC (Sequential Function Chart) (Grafcet)			
Program size	Function blocks: typically 512 blocks Macro blocks: 127 max. (255 blocks per macro)			
Program memory	Flash			
Removable memory	N.A			
Data memory	2 k octets			
Back-up time (in the event of power failure)	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 configuration			
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). Synchronizable by network			
Timer block accuracy	0.5 % ± 2 cycle time			
Start up time on power up	< 8 s base alone, < 5 s base + 2 expansions + 1 accessory (RS485)			
Self test	Test firmware integrity (checksum memory) Stability of the internal power supply Check the conformity of the em4 device configuration with the configuration in the application program.			
Supply				
Nominal voltage	24 VDC (-15% / +20%)			
Operating limits	20.4 - 28.8 VDC			
Immunity from micro power cuts	≤ 1 ms (repetition 20 times)			
Max. absorbed power	3.8 W @ 24 VDC, 5 W @ 28.8 VDC, 1.5 W @ 24 VDC I/O OFF	4.8W @ 24 VDC, 6.2 W @ 28.8 VDC, 1.5W @ 24 VDC I/O OFF	4W @ 24 VDC, 5.3 W @ 28.8 VDC, - 0.3 W backlight OFF 1.5W @ 24 VDC (I/O + backlight) OFF	5W @ 24 VDC, 6.5 W @ 28.8 VDC, - 0.3 W backlight OFF 1.5W @ 24 VDC (I/O + backlight) OFF
Protection against polarity inversions	Yes			

	XBP24	XBP24-E	XDP24	XDP24-E
Inputs				
Digital and high speed digital inputs 24 VDC - 4 inputs from I1 to I4				
Input used as digital input				
Input voltage	24 VDC (-15% / +20%)			
Input current	1.8 mA @ 20.4 V 2.1 mA @ 24 V 2.5 mA @ 28.8 V			
Input impedance	11.6 kΩ			
Logic 1 voltage threshold	≥ 15 VDC			
Making current at logic state 1	≥ 1.3 mA			
Logic 0 voltage threshold	≤ 10 VDC			
Release current at logic state 0	≤ 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	Yes			
Status indicator	On LCD screen			
Cable length	≤ 100 m			
Input used as high speed digital input				
Maximum counting frequency	3 channels encoder (I1, I2, I3): 5 kHz* 2 independent counters (I1, I2) (I3, I4) (Cumul, IND, DIR): 2 channels: 10 kHz*, 4 channels: 5 kHz*, 2 independent counters (I1, I2) (I3, I4) (PH, PH2): 2/4 channels: 5 kHz* 4 independent counters (I1, I2, I3, I4) (Up/Down) : 1 channel: 15 kHz*, 2 channels: 10 kHz*, > 2 channels: 5 kHz* * with a time cycle ≤ 10 ms and a ton / toff = 50% ± 5%, level 0 < 2V and level 1 > 20,4V			
Other functions	4 tachometers (I1, I2, I3, I4)			
Cable length	≤ 3 m with shielded twisted cable			
Digital 24 VDC and analog inputs 12 bits / 28.8 V - potentiometer - 8 inputs from I5 to IC				
Input used as digital input				
Input voltage	24 VDC (-15% / +20%)			
Input current	1.8 mA @ 20.4 V 2.1 mA @ 24 V 2.5 mA @ 28.8 V			
Input impedance	11.6 kΩ			
Logic 1 voltage threshold	≥ 11 VDC			
Making current at logic state 1	≥ 1 mA			
Logic 0 voltage threshold	≤ 9 VDC			
Release current at logic state 0	≤ 0.7 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	Yes			
Status indicator	On LCD screen			
Cable length	≤ 30 m			

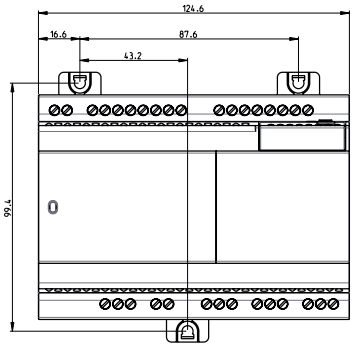
	XBP24	XBP24-E	XDP24	XDP24-E
Input used as analog input				
Measuring range	0 → 10 V or 0 → V power supply			
Input impedance	11.6 kΩ			
Maximum value without destruction	28.8 VDC max			
Input type	Common mode			
Resolution	12 bit at maximum input voltage (10 bit at 10V)			
Value of LSB	7.03 mV			
Conversion time	Controller cycle time			
Maximum error in 0-10V mode	± 3.5 % of full scale at 25°C (77°F) ± 5 % of full scale at 55°C (131°F)			
Maximum error in 0-V power supply mode	± 5 % of full scale at 25°C (77°F) ± 6.2 % of full scale at 55°C (131°F)			
Repeat accuracy at 55°C (131°F)	± 2 %			
Isolation between analogue channel and power supply	None			
Protection against polarity inversions	Yes			
Potentiometer control	2.2 kΩ / 0.5 W (recommended), 10 KΩ max.			
Cable length	≤ 10 m with shielded twisted cable (sensor not isolated)			
Digital 24 VDC - 4 inputs from ID to IG				
Input voltage	24 VDC (-15% / +20%)			
Input current	1.5 mA @ 20.4 V 1.7 mA @ 24 V 2.1 mA @ 28.8 V			
Input impedance	13.9 kΩ			
Logic 1 voltage threshold	≥ 11 VDC			
Making current at logic state 1	≥ 0.8 mA			
Logic 0 voltage threshold	≤ 8 VDC			
Release current at logic state 0	≤ 0.5 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	No			
Status indicator	On LCD screen			
Cable length	≤ 30 m			
Outputs				
6 A relay output - 2 outputs from O1 to O2				
Breaking voltage	250 VAC max			
Breaking current	6 A Derating: UL: ≥ 45°C (113°F): 4A max			
Maximum breaking current in the common	IEC @ 25°C (77 °F): 12 A IEC @ 60°C (140 °F) or UL: 10 A			
Mechanical life	5 000 000 operations (cycles)			
Electrical durability for 50 000 operating cycles	24 VDC tau = 0 ms: 6 A, tau = 7 ms: 3 A, tau = 15 ms: 1.8 A Usage category DC-12: 24 V, 6 A Usage category DC-14: 24 V, 1.8 A 250 VAC cos phi = 1: 6 A, cos phi = 0.7: 5 A, cos phi = 0.4: 2.5 A Usage category AC-12: 250 V, 6 A Usage category AC-13: 250 V, 5 A Usage category AC-15: 250 V, 2 A			

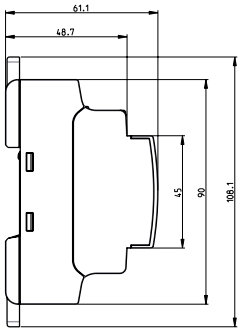
	XBP24	XBP24-E	XDP24	XDP24-E
Minimum switching capacity	100 mA (at minimum voltage of 12V)			
Maximum operating rate	Off load: 10 Hz At operating current: 0.1 Hz			
Voltage for withstanding shocks	In accordance with IEC/EN 60947-1 and IEC/EN 60664-1: 4 kV			
Response time	Make = 1 cycle time + 8 ms typical Release = 1 cycle time + 4 ms typical			
Built-in protections	Against short-circuits: None Against over voltages and overload: None			
Status indicator	On LCD screen			
Cable length	≤ 30 m			
8 A relay output - 6 outputs from O3 to O8				
Breaking voltage	250 VAC max			
Breaking current	8 A Derating: CEI ≥ 55°C (131°F) or UL: ≥ 45°C (113°F): 6A max			
Maximum breaking current in the common	IEC @ 25°C (77°F): C3, C6: 8A ; C4, C5: 16 A IEC @ 60°C (140 °F) or UL: C3, C6: 8 A ; C4, C5: 10 A			
Mechanical life	20 000 000 operations (cycles)			
Electrical durability for 50 000 operating cycles	24 VDC tau = 0 ms: 8 A, tau = 7 ms: 3 A, tau = 15 ms: 1.5 A Usage category DC-12: 24 V, 8 A Usage category DC-14: 24 V, 1.5 A 250 VAC cos phi = 1: 8 A, cos phi = 0.7: 4.75 A, cos phi = 0.4: 3 A Usage category AC-12: 250 V, 8 A Usage category AC-13: 250 V, 4.3 A Usage category AC-15: 250 V, 1.5 A			
Minimum switching capacity	100 mA (at minimum voltage of 12V)			
Maximum operating rate	Off load: 10 Hz At operating current: 0.1 Hz			
Voltage for withstanding shocks	In accordance with IEC/EN 60947-1 and IEC/EN 60664-1: 4 kV			
Response time	Make = 1 cycle time + 10 ms typical Release = 1 cycle time + 5 ms typical			
Built-in protections	Against short-circuits: None Against over voltages and overload: None			
Status indicator	On LCD screen			
Cable length	≤ 30 m			
Ethernet network				
Programming / exploitation	-	USB & Ethernet port / Ethernet port	-	USB & Ethernet port / Ethernet port
Ethernet connection	-	Type RJ45, 10/100 Mbit/s, MDI/MDIX	-	Type RJ45, 10/100 Mbit/s, MDI/MDIX
Adressage	-	Static or dynamic (DHCP server / Auto IP)	-	Static or dynamic (DHCP server / Auto IP)
Protocols	-	Modbus TCP (client / server), Discovery, UDP, TCP, SMTP, SSL (workshop communication via Ethernet)	-	Modbus TCP (client / server), Discovery, UDP, TCP, SMTP, SSL (workshop communication via Ethernet)
Cable length	-	Maximun length between 2 devices: 100 m / 3937 inch	-	Maximun length between 2 devices: 100 m / 3937 inch
Ethernet earthing	-	Yes, refer to the quick reference guide supplied with the product	-	Yes, refer to the quick reference guide supplied with the product

Technical sketches

Dimensions (mm)

Version	XBP24	XBP24-E	XDP24	XDP24-E

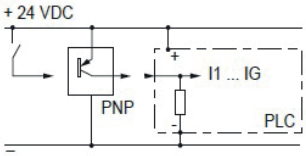




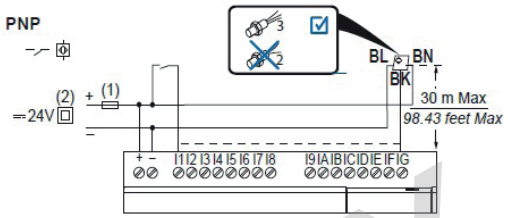
Connections

INPUTS

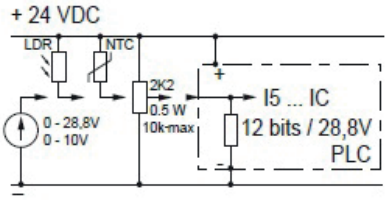
I1 ... IG 0/1



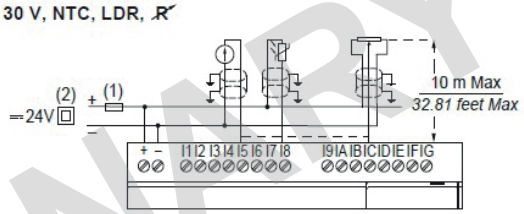
PNP



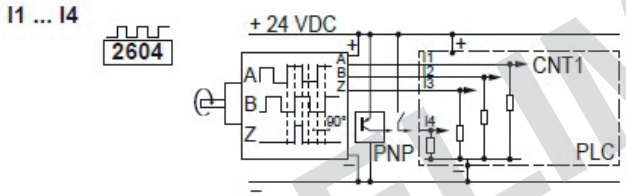
I5 ... IC U



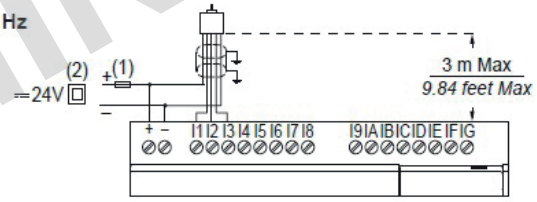
30 V, NTC, LDR, R



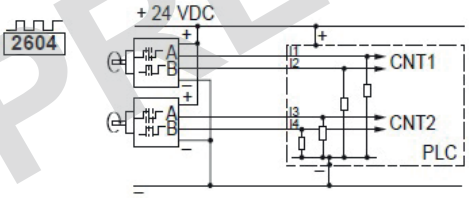
I1 ... I4



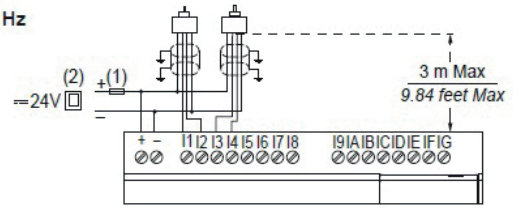
Hz



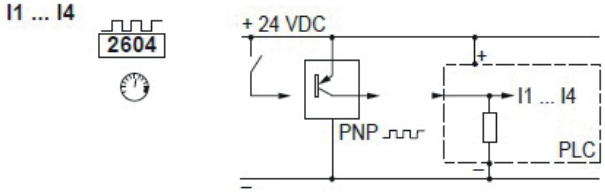
I1 ... I4



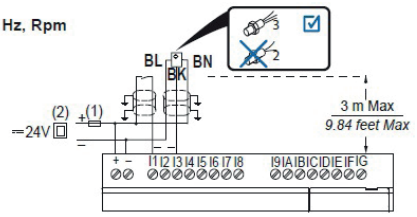
Hz



I1 ... I4



Hz, Rpm



OUTPUTS