

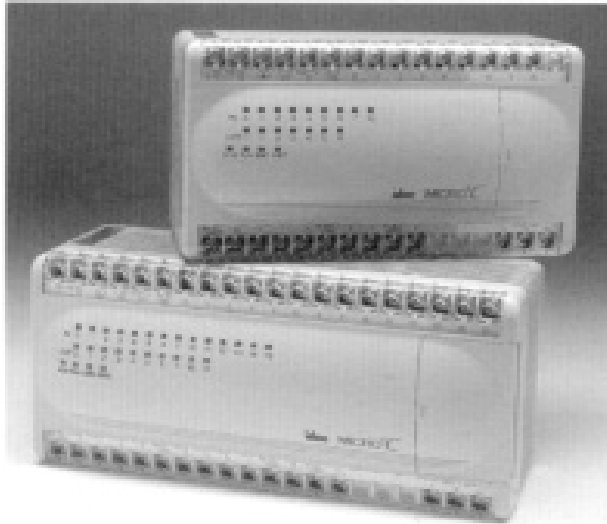
Micro³ and Micro³C

PLC

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CONTROLLERS & SENSORS

Micro³C



The True Micro PLC Ambassador

Key features of the Micro³C include:

- All the features of the Micro³
- Talks both ASCII and binary
- Equipped with two serial ports, RS232 and RS485
- Capable of connecting to dial-up modem, serial printer, and bar code reader
- Up to 500 data registers
- Handles a wide range of analog input signals
- Comes with an easy reset button
- Available in 2 sizes: 16- and 24-V0 with relay output

 UL Listed
File No. E102542

 CSA Certified
File No. LR66809

 CE Certified
EMC Approved
File No. B950913332312



Micro³




The Benchmark for Micro-PLCs

Key features of the Micro³ include:

- Built-in communications and networking
- Input/output analog capability
- User program password protection
- Catch input, pulse output
- Real-time clock and calendar available
- Built-in power supply for sensors
- Arithmetic, comparison, and Boolean computation
- High-speed: 400µ/100 steps, 10kHz

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	Standard Mode	High-Speed Mode
Program Capacity	1012 steps	100 steps (approximately)
Processing	2.9ms/1k steps (average)	400µs/100 steps (average)
Internal Relay	232 points	40 points
Data Register	Micro ³ : 100 points Micro ³ C: 500 points	32 points
Control Data Register	10 points	—
Counter/Timer	32 points total	16 points total
Shift Register	64 points	32 points
Communication Channel	Data link channel: RS485 Baud rate: 19,200 bps (fixed) Cable length: 656' (200m) (maximum) Data link: 6 slave stations (maximum) Expansion: 1 unit (maximum)	—
	Programming channel: complies with EIA RS485 (Micro ³)/RS232 (Micro ³ C) standards Baud rate: 1,200/2,400/4,800/9,600/19,200 bps (selectable); Extension: 16.4' (5m) (maximum)	
Instructions	Micro ³ : 22 basic, 33 advanced Micro ³ C: 22 basic, 35 advanced	
Memory	EEPROM	
I/O	See configurations shown on page J-6	
Catch Input Relays	8 points	
Special Internal Relay	16 points	
Power Failure Protection	Internal relay, shift register, counter, data register; backup time, lithium battery fully charged— With clock: 30 days at 25°C (approximately); Without clock: 50 days at 25°C (approximately)	
Self-Diagnostic Function	CPU error (WDT), user program CRC error, user program sum check error, communication error, sensor power overload, transistor output overload	
Catch Input	8 points; Minimum detectable pulse width (when hard filter is set to 10); Input I0 ON pulse = 28µs, OFF pulse = 30µs; Inputs I1 to I7 ON pulse = 37µs, OFF pulse = 120µs (depending on input filter settings)	
Input Filter Function (DC input type only)	Normal input: 0ms, 3ms, 7ms, 10ms; Catch input: Input I0 ON pulse = 4 to 616µs, OFF pulse = 6 to 618µs; Input I1 to I7 ON pulse = 20 to 625µs, OFF pulse = 120 to 618µs	
High-Speed Counter	1 point, single-phase, 10kHz (maximum), 32 bits	
Analog Potentiometer	Micro ³ : 1 point (10-point), 2 points (16-, 24-point) Micro ³ C: 1 point only	
Pulse Output	1 channel, frequency/PWM output (not available in Micro ³ C)	
Real Time Clock	Clock accuracy ±30s/month (maximum) at 25°C (typical); year, month, day, hour, minute, second	
Sensor Power Supply	24V ±3.6V DC, 150mA (maximum) including input current, overload detected	

General Specifications



Micro³C only available in 16 I/O or 24 I/O.

	AC Power	DC Power
Rated Power Range	100 to 240V AC, 50/60Hz (85 to 264V)	24V DC (19 to 30V DC)
Power Consumption	Approximately 30VA (240V AC)	Approximately 14W (24V DC)
Inrush Current	40A (maximum)	
Power Disruption	25ms (momentary disruption) allowed	
Dielectric Strength	Between power terminal and ground: 2,000V AC, 1 minute	Between power terminal and ground: 1,500V AC, 1 minute
	Between I/O terminal and ground: 1,500V AC, 1 minute	
Temperature	Operating: 0 to 60°C, Storage: -20 to +70°C	
Operating Humidity	45 to 85% RH (avoid condensation)	
Vibration Resistance	5 to 55Hz, 6G, 2 hours in each of 3 axes	
Shock Resistance	30G, 3 shocks in each of 3 axes	
Noise Resistance	Between power terminal and ground: 1.3kV, 1µs; Between I/O terminal and ground: 1kV, 1µs (with noise simulator) — complies with IEC1131-2	
Insulation Resistance	Between power or I/O terminal and ground: 10MΩ (minimum), 500V DC	
Ground Resistance	100Ω (maximum)	

Electrical Specifications

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CONTROLS & SENSORS

Part Numbers: Micro³

Item	Part No.	Description	Remarks
100 to 240V AC 50/60Hz Power Micro ³ CPU	FC2A-CA16A1	16 I/O: 9 inputs and 7 outputs	Inputs: 120V AC (85-132V AC) 50/60Hz (housing = 24 I/O size)
	FC2A-C10A1 FC2A-C16A1 FC2A-C24A1	10 I/O: 6 inputs and 4 outputs 16 I/O: 9 inputs and 7 outputs 24 I/O: 14 inputs and 10 outputs	
	FC2A-C10B1 FC2A-C16B1 FC2A-C24B1	10 I/O: 6 inputs and 4 outputs 16 I/O: 9 inputs and 7 outputs 24 I/O: 14 inputs and 10 outputs	
24V DC Power Micro ³ CPU	FC2A-C10A4 FC2A-C16A4 FC2A-C24A4	10 I/O: 6 inputs and 4 outputs 16 I/O: 9 inputs and 7 outputs 24 I/O: 14 inputs and 10 outputs	Inputs: 24V DC sink/source Only the 16- and 24-I/O units have real-time clock/calendar
	FC2A-C10B4 FC2A-C16B4 FC2A-C24B4	10 I/O: 6 inputs and 4 outputs 16 I/O: 9 inputs and 7 outputs 24 I/O: 14 inputs and 10 outputs	
	FC2A-C10D4 FC2A-C16D4 FC2A-C24D4	10 I/O: 6 inputs and 4 outputs 16 I/O: 9 inputs and 7 outputs 24 I/O: 14 inputs and 10 outputs	
Programming Starter Kits "Micro Mania"	MM-MICRO1 MM-MICRO3-10 MM-MICRO3-16 MM-MICRO3-24 MM-MICRO3C-16 MM-MICRO3C-24 MM-Cables	Micro-1 PLC, WindLDR, computer link cable, input switch simulator Micro ³ 10 I/O, WindLDR, computer link cable, input switch simulator Micro ³ 16 I/O, WindLDR, computer link cable, input switch simulator Micro ³ 24 I/O, WindLDR, computer link cable, input switch simulator Micro ³ C 16 I/O, WindLDR, computer link cable, input switch simulator Micro ³ C 24 I/O, WindLDR, computer link cable, input switch simulator WindLDR, 3 computer link cables for Micro-1, Micro ³ and Micro ³ C	
Program Loader	FC2A-HL1EC	Program loader with cable	
Loader Cable	FC2A-KL1 FC2A-KL2	6.56' (2m) long 16.4' (5m) long	Connects program loader to Micro ³
Loader Adaptor	PSR-GA05005	5V power supply adaptor for using program loader when not connected to CPU	
Computer Link Cable	FC2A-KC2	Connects Micro ³ or loader to PC (1:1 link), 6.56' (2m)	
Memory Card	FC2A-MC1	Used with program loader to store user programs in SRAM memory	
Expansion Cable	FC2A-KE1	Close proximity Micro ³ link expansion, 9.84" (250mm) long	
1:N Computer Link Interface Unit	FC2A-LC1	One required to connect each Micro ³ in a 1:N computer link system (all connected to one central RS232C/RS485 converter)	
1:N Computer Link Interface Cable	FC2A-KC3	One required to connect each Micro ³ in a 1:N computer link system (connected to each interface unit), 32.8' (10m) long	
1:N RS232C/RS485 Converter	HD9Z-T11	One required to connect all Micro ³ units in a 1:N computer link system	
1:N RS232C/RS485 Converter	HD9Z-T11-DS783	One required to connect all Micro ³ units in a 1:N computer link system; Additionally, the DS783 should be used in applications requiring PC to Micro ³ communications via modem	
1:N PC Cable	HD9Z-C52	Connects RS232C/RS485 converter to PC in a 1:N computer link system, 4.92' (1.5m) long (D-sub 9-pin female computer connector)	
Analog Input Unit	FC2A-AD1 FC2A-AD2 FC2A-AD3 FC2A-AD4 FC2A-AD5	0 to 5V 0 to 10V ±5V 4 to 20mA ±10V	Converts analog signals to digital and sends to input I0 of Micro ³ (not for use with AC input type units)
Analog Output Unit	FC2A-DA1 FC2A-DA2 FC2A-DA3 FC2A-DA4 FC2A-DA5	0 to 5V 0 to 10V ±5V 4 to 20mA ±10V	Converts digital (PWM) signal from output Q0 of Micro ³ to analog (not for use with relay output type units)
Analog Timer Unit	PFA-U11	For fine adjustment of analog timer preset value	
Input Switches	FC2A-SW6 FC2A-SW9 FC2A-SW14	Input simulator switches (6) for 10 I/O Micro ³ s Input simulator switches (9) for 16 I/O Micro ³ s Input simulator switches (14) for 24 I/O Micro ³ s	
WindLDR™, Version 1.0	WINDLDR	Windows-based application software, performs ladder programming and monitors IDEC's Micro-1, Micro ³ , and Micro ³ C PLCs (soon: available for FA series)	
CUBIQ, Version 2.0	FC9Y-LP1E314	DOS-based application software, performs ladder programming and monitoring; supports Micro ³ and Micro ³ C PLCs only	

PLC

Micro³ and Micro³C

Part Numbers: Micro³C

Item	Part No.	Description	
AC Power (100 to 240V AC, 50/60Hz power supply)	FC2A-C24A1C	Base units: Input (24V DC sink/source) Relay output (240V AC/30V DC, 2A)	24 I/O (14 in, 10 out)
	FC2A-C16A1C		16 I/O (9 in, 7 out)
DC Power (24V DC, 19 to 30V DC)	FC2A-C24A4C		24 I/O (14 in, 10 out)
	FC2A-C16A4C		16 I/O (9 in, 7 out)
Program Loader	FC2A-HL1EC	Version 2.0+; also compatible with Micro ³ C	

Optional Item	Part No.	Description
Loader Cable (2m)	FC2A-KL3C	Connects basic unit (loader port) and program loader
Loader Cable (2m)	FC2A-KL4C	Connects basic unit (data link terminal) and program loader
Modem Cable (3m)	FC2A-KM1C	Connects basic unit (loader port) and modem (1:1 communications)
PC Interface Cable (3m)	FC2A-KC4C	Connects basic unit (loader port) and PC (1:1 communications)
PC Interface Cable (2m)	FC2A-KC6C	Connects basic unit (data link terminal) and PC (1:1 communications)
User Communication Cable (2.4m)	FC2A-KP1C	Connects basic unit (loader port) and user's equipment
PC Connect Cable (5m)	HG9Z-XC183	Connects basic unit (loader port) and Micro Q/I™
Memory Card (RAM)	FC2A-MC1	Memory to store user's programs (64K)
AC Adaptor	PSR-GA05005	Connects basic unit (data link terminal) and program loader/PC
Expansion Cable (25cm)	FC2A-KE1	Connects basic unit and expansion function unit
1:N Link Adaptor	FC2A- MD1	Connects basic unit (data link terminal) and PC
RS232C Cable (4 lines, 1.5m)	HD9Z-C52	Connects link adaptor and PC (1:N communications), D-sub 9-pin
WindLDR™, Version 1.0	WINDLDR	Windows-based application software, performs ladder programming and monitors IDEC's Micro-1, Micro ³ , and Micro ³ C PLCs
CUBIQ, Version 2.0	FC9Y-LP1E314	DOS-based application software, performs ladder programming and monitoring; also compatible with the Micro ³