

Durus Controllers Introduction

Durus* Controllers

The Durus Controllers are loaded with features such as easy to use built-in display/keypad, high current outputs, multiple communication options, and are very affordable. The Durus Controllers can be programmed using both the built-in display and keypad or with the Durus Controllers programming software. The Durus Controllers are ideal for applications that require some logic, a few timers/counters and

real-time clock control. The Durus Controllers are designed for simple control applications such as light control, gate control, HVAC, pump control and much more.

Key Features:

- 8 Amp Relay Outputs, isolated
- Support for Modbus Slave, Profibus Slave and DeviceNet Slave

- Durus Controllers programming software enables the user to fully simulate the application without the hardware
- The Memory Module enables easy upgrades
- Software is free for downloading from the Web (www.gefanuc.com)
- LCD Backlit display for easy viewing in all environments

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- Backlit LCD Display
- Keypad
- Socket for memory module or communications interface cable
- Optional Expansion (Up to 3)

Durus Controllers Selection Guide

Features	Durus -10 and -12	Durus -20
Built-in Discrete I/O	6 in/ 4 out	12 in/ 8 out (AC powered models) 8 in/ 8 out (DC powered models)
Maximum Discrete I/O	18 in/ 16 out	24 in/ 20 out
Built-in Analog I/O	2 on DC powered models	4 on DC powered models
I/O Expansion Units	Up to 3 discrete and 1 analog expansion units supported	
Logic Memory	200 Lines (4 cells wide per rung) or 99 Function Blocks	
Programming Language	Ladder or Function Block Diagram	
Execution Speed	10ms/cycle	
LCD Display	4 line, 12 character LCD backlit display	
Maximum Text Displays	15	
Display Languages	English, French, German, Spanish, Portuguese, Chinese, Italian	
Real Time Clock	Up to 15 uses	
Number of Timers	Up to 15; 0.01 seconds to 9999 minutes	
Number of Counters	Up to 15; 0 to 999999 counts	
Comparator Instruction	Up to 15; Supports Less Than Equal To or Greater Than Equal To for Timers, Counters or Analog	
High Speed Input Frequency	1kHz	
PWM Output Frequency	0.5kHz (1msec On, 1msec Off)	
Modbus Slave Support Built-in	No	No; Yes on selective models
Modbus Slave Support	Yes (built-in on certain models and available for all controllers that support expansion [Modbus Slave expansion module])	
Profibus Slave Support	Yes	
DeviceNet Slave Support	Yes	
Agency Approvals	CE, C-UL, UL	
Temperature Range	0 to 55°C	

AC Models



The AC versions of the Durus Controllers come with 10 points (6 discrete inputs and 4 discrete outputs) or 20 points (12 discrete inputs and 8 discrete outputs). The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DAR012	IC210DAR010	IC210BAR010	IC210NAR010
Product Name	10 point (8) 24 VAC Inputs, (4) Isolated Relay Out (8 Amps), 24 VAC input power, supports expansion and display/keypad	10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, supports expansion and display/keypad	10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, supports expansion and no display/keypad	10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, no expansion, no plastic case and no display/keypad
Number of Discrete Inputs/Outputs	8 In/ 4 Out	6 In/ 4 Out	6 In/ 4 Out	6 In/ 4 Out
Number of Analog Inputs	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None
Physical I/O Maximum	34 I/O	34 I/O	34 I/O	34 I/O
Support Expansion	Yes	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	24 VAC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VAC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
Dimensions (W x H x D) mm	72mm x 90mm x 58mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm

AC Models



The AC versions of the Durus Controllers come with 10 points (6 discrete inputs and 4 discrete outputs) or 20 points (12 discrete inputs and 8 discrete outputs). The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DAR020	IC210BAR020	IC210NAR020
Product Name	20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, supports expansion and display/keypad	20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, supports expansion and no display/keypad	20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, no expansion and no display/keypad
Number of Discrete Inputs/Outputs	12 In/ 8 Out	12 In/ 8 Out	12 In/ 8 Out
Number of Analog Inputs	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None
Physical I/O Maximum	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Power Supply Power Consumption	150 mAmps	150 mAmps	150 mAmps
Input Device Voltage	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

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DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDR112	IC210DDR012	IC210BDR012	IC210NDR012
Product Name	10 point (6) 12 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 12 VDC input power, supports expansion and display/keypad	10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad	10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion, no display/keypad	10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, no expansion, no plastic case and no display/keypad
Number of Discrete Inputs/Outputs	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out
Number of Analog Inputs	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in
Physical I/O Maximum	36 I/O	36 I/O	36 I/O	36 I/O
Support Expansion	Yes	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	12 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	12 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
PWM Maximum Output Frequency	N/A	N/A	N/A	N/A
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72mm x 90mm x 58mm

* Analog inputs can be configured as DC input points.

DC Models



The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDD012	IC210BDD012	IC210NDD012	IC210MDR124
Product Name	10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, supports expansion and display/keypad	10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, supports expansion, no display/keypad	10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, no expansion, no plastic case and no display/keypad	20 point with Modbus Slave communications built-in (8) 12 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 12 VDC input power, supports expansion and display/keypad
Number of Discrete Inputs/Outputs	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out	8* In/ 8 Out
Number of Analog Inputs	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in	4 built in, 4 with Analog Expansion
Physical I/O Maximum	36 I/O	36 I/O	36 I/O	44 I/O
Support Expansion	Yes	Yes	No	Yes
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	12 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	12 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	24 VDC Transistors	24 VDC Transistors	24 VDC Transistors	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
PWM Maximum Output Frequency	0.5K (1ms ON/ 1ms OFF)	100Hz	100Hz	N/A
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.

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DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDR024	IC210BDR024	IC210NDR024	IC210DDD024
Product Name	20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad	20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion, no display/keypad	20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, no expansion, no plastic case and no display/keypad	20 point (4) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion and display/keypad
Number of Discrete Inputs/Outputs	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out
Number of Analog Inputs	4 built in, 4 with Analog Expansion	4 built in, 4 with Analog Expansion	4 built in	4 built in, 4 with Analog Expansion
Physical I/O Maximum	44 I/O	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	Yes	No	Yes
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	24 VDC Transistors
PWM Maximum Output Frequency	N/A	N/A	N/A	100Hz
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.

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DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210BDD024	IC210NDD024	IC210MDR024	IC210MDD024
Product Name	20 point (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion, no display/keypad	20 point (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, no expansion, no plastic case and no display/keypad	20 point with Modbus Slave communications built-in (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad	20 point Modbus Slave communications built-in (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion and display/keypad
Number of Discrete Inputs/Outputs	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out
Number of Analog Inputs	4 built in, 4 with Analog Expansion	4 built in	4 built in, 4 with Analog Expansion	4 built in, 4 with Analog Expansion
Physical I/O Maximum	44 I/O	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	No	Yes	Yes
LCD Display and Keypad	No	No	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	24 VDC Transistors	24 VDC Transistors	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	24 VDC Transistors
PWM Maximum Output Frequency	100Hz	100Hz	N/A	100Hz
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.



Discrete Expansion Units

The Durus Controllers support up to 3 discrete and 1 analog expansion units. The discrete expansion units have 4 inputs and 4 outputs.

	IC210EAR008	IC210EAR208	IC210EDR008	IC210EDD008
Product Name	8 point discrete expansion (4) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power	8 point discrete expansion (4) 24 VAC Inputs, (4) Isolated Relay Out (8 Amps), AC input power	8 point discrete expansion (4) 24 VDC Inputs, (4) Isolated Relay Output (8 Amps), 24 VDC input power	8 point discrete expansion (4) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), 24 VDC input power
Number of Discrete Inputs/Outputs	4 In/ 4 Out	4 In/ 4 Out	4 In/ 4 Out	4 In/ 4 Out
Input Power Voltage	85 to 240 VAC; 85 to 240 VDC	24 VAC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	85 to 240 VAC; 85 to 240 VDC	24 VAC	24 VDC	24 VDC
Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm



Analog Expansion Unit

The Durus Controllers support up to 3 discrete and 1 analog expansion units. The analog input module support four 0 to 10 VDC inputs.

IC210EAI004

Product Name	4 point analog expansion (4) analog inputs (voltage and current, 10 bit), 12/24 VDC input power Only one analog expansion supported on the Durus Controller
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Number of Analog Inputs	4
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Analog Input Range	0 to 10 VDC; 4 to 20 mA
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Analog Resolution	10 bits
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Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm
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Communications Options

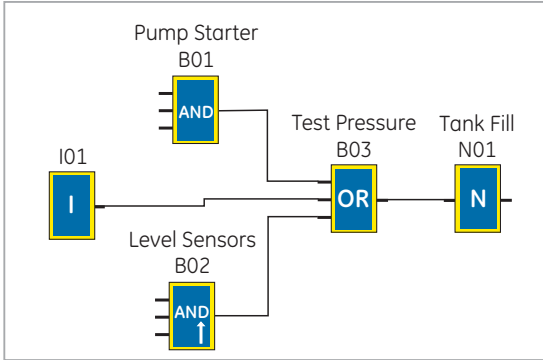
The Durus Controllers support one communication expansion unit. There are three communication options available—Modbus Slave, Profibus Slave and DeviceNet Slave.

	IC210EMS001	IC210EPS001	IC210EDS001
Product Name	Modbus RTU slave communications expansion module, 24 VDC power source	Profibus-DP slave communications expansion module, 24 VDC power source	DeviceNet slave communications expansion module, 24 VDC power source
Protocol Supported	Modbus Slave	Profibus-DP Slave V0	DeviceNet Group 2 Only Slave Device
Network Data Rate	4800, 9600, 19200, 38400, 57600	9.6K to 12 Meg	125K, 250K, 500 K
Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm

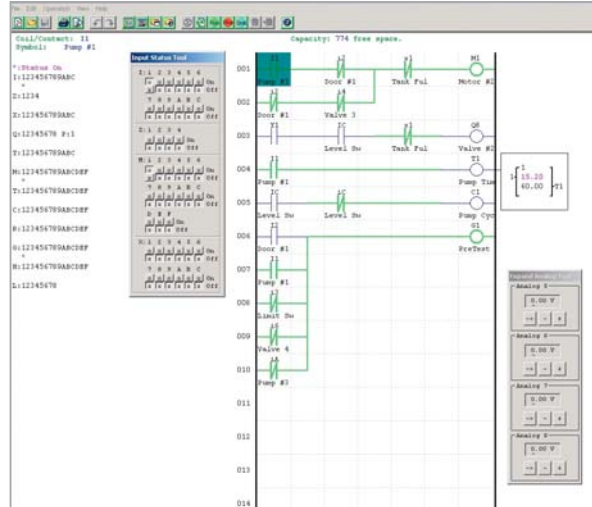
Durus Controllers

Software

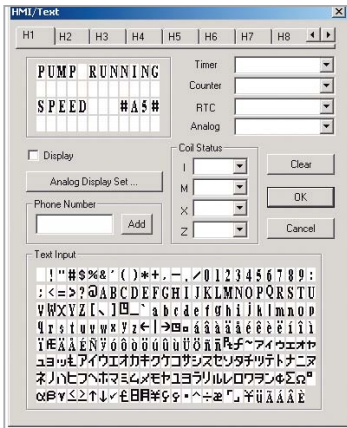
Full featured Durus Software (IC646DUR001), enables you to develop your application in ladder logic or Function Block Diagram programming. The Durus Software also comes with a powerful simulation tool that enables you to easily simulate your application and mimic the keystrokes on the built-in operator keypad.



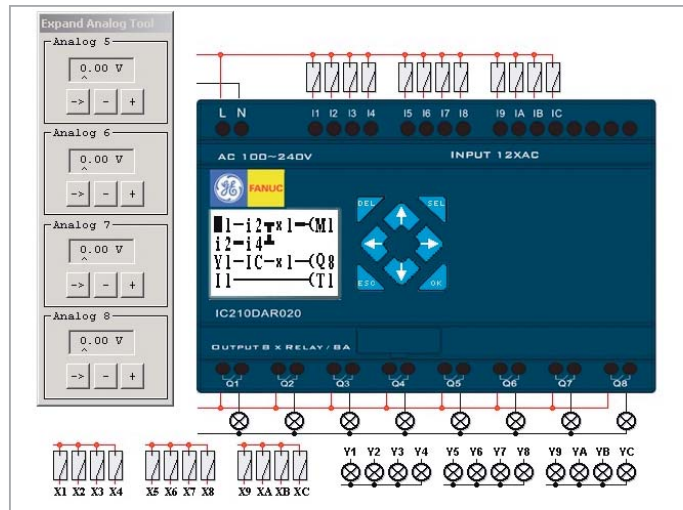
Function Block Diagram



Ladder Logic



Operator Interface Configuration



Easy-to-Use Application Development Simulation on the PC.

User can simulate your entire application without powering up a Durus Controller.

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Accessories and Cables

IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controller
IC210CBL001	Durus Controller to PC RS-232 Serial Cable
IC210CBL002	Durus Controller to PDA Transfer Cable

Programming and Trouble Shooting Tools

IC646DUR001	Durus Controllers Program and Simulation Software
IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)

Starter Kits

IC210TBX010	IC210DAR010 10 point Durus controller. AC Power Source, 6 AC in/4out (Relay 8 Amp), Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX012	IC210DDR012 12 point Durus controller. 24 VDC Power Source, (6) 24 VDC in / (4) out (Relay 8 Amp), (2) analog inputs, Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX020	IC210DAR020 20 point Durus controller. AC Power Source, (12) AC in/8 out (Relay, 8 Amp), Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX024	IC210DDR024 20 point Durus-20 controller. 24 point 24 VDC Power Source, (8) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX124	IC210MDR024 20 point Durus-20 controller. 24 VDC Power Source, (8) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Support Modbus Slave on port. Kit includes programming software and cable. (IC646DUR101)

Durus Controllers

Examples of Typical Application

Configuration for Durus Controller 10 (Applications needing less than 6 (120/240 VAC) inputs and 4 relay outputs)

Qty	Part Number	Description
1	IC210DAR010	AC Power Source, 6 AC in/4 out (Relay 8 Amp), Expandable, with LCD/Keypad

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers
1	IC210EMS001	Modbus RTU slave communications expansion module, 24 VDC power source
1	IC200DTX450	Operator Interface with up to 200 stored messages. 2 x 16 character LCD backlight display and 6 function keys. (Requires 24 VDC power supply)

Configuration for Durus 20 (Example Application needing 16 (24 VDC) discrete inputs, 12 relay outputs and 8 Analog inputs with 24 VDC power and Modbus communications. Modbus communications will connect to Operator Interface that requires 4 x 20 line display and numeric keypad)

Qty	Part Number	Description
1	IC210MDR024	24 VDC Power Source, (12) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Support Modbus Slave on port.
2	IC210EDR008	24 VDC Power Source, (4) 24 VDC in/(4) out (Relay, 8 Amp)
1	IC210EAI004	24 VDC power source, 10 bit, 4 Analog input
1	IC200DTX850	Operator Interface with up to 200 stored messages. 4 x 20 character LCD backlight display, 8 function keys and numeric keypad.

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers

Application requiring six 24 VDC inputs, eight AC inputs, thirteen relay outputs, no display required and Profibus networking.

Qty	Part Number	Description
1	IC210BAR020	AC Power Source, (12) AC in/8 out (Relay, 8 Amp), Expandable, with without LCD/Keypad
2	IC210EDR008	24 VDC Power Source, (4) 24 VDC in/(4) out (Relay, 8 Amp)
1	IC210EPS001	Profibus-DP slave communications expansion module, 24 VDC power source

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers

