



PROCESS CONTROL
REMOTE MONITORING
HVAC CONTROL
WATER & WASTEWATER
OIL & GAS

A unique “open architecture” controller that combines IEC 61131-3 programmable control, process monitoring and data logging, a built-in mini operator interface, high-speed serial and wireless communications, and voice, pager and e-mail alarm annunciation.



ScadaFlex Plus Controller *with Operator Interface*

- **Programmable Logic**
- **32-bit Math**
- **PID Control**
- **Built-in Mini Operator Interface**
- **4 Serial Ports + Modem/Radio**
- **Built-in HMI/MMI software**
- **Data Logging**
- **Alarm Logging and Paging**
- **Data Concentration**
- **Remote Program Updates**
- **E-mail w/file attachments**
- **Local I/O Forcing**
- **Built-in Analog/Discrete I/O**
 - 8 16-bit Analog Inputs
 - 2 12-bit Analog Outputs (6 opt)
 - 22 Discrete Inputs
 - 10 Discrete Outputs
- **I/O Expansion to 8000 points**
- **3 Year Factory Warranty**

ScadaFlex Plus™ is an “open architecture” programmable controller with built-in RS-485 networking, wireless, hardwired and modem communications, and a large standard memory capacity for data logging and “over-the-link” program updates.

With 32-bit processing power and high level software tools that minimize programming time, ScadaFlex Plus™ bridges the gap between PLCs and RTUs while adding alarm dialer and data logging capabilities.

Easier Field Support

ScadaFlex Plus™ has a built-in “mini” Operator Interface to examine or force the value of any analog or discrete I/O point and to configure operating parameters, frequently eliminating the need for a laptop computer or more expensive display panel in the field.

Open Software

As an open architecture controller, ScadaFlex Plus™ includes an **IEC 61131-3**

software kernel supporting six industrial control languages. ScadaFlex Plus™ also supports traditional text programming languages like **C** and **C++**. With ScadaFlex Plus™, you can mix and match these tools to get the job done quickly and reliably.

In addition to powerful programming tools, ScadaFlex Plus™ is supported by ICL's **ScadaBuilder** software. ScadaBuilder eliminates hours of programming time with point-and-click configuration of serial communications, data and alarm logging, alarm annunciation (including pager, e-mail and voice support), and a simple but powerful MMI interface over hardwired, radio or telephone connections.

Open Communications

The open architecture design of ScadaFlex Plus™ extends to its communications capabilities. By supporting multiple protocols including the industry standard, **Modbus**, ScadaFlex Plus™ is easily integrated into both new and existing SCADA systems, including all of the top HMI software packages, without special drivers.



Industrial Control Links

(800) 888-1893 www.iclinks.com

ScadaFlex Plus Controller with Operator Interface

ANALOG INPUTS

Quantity of Analog Inputs	8
Signal Input Levels, nominal	0 or 4 to 20mA, 0 or 1 to 5V
Resolution	16 bits (1 part in 65, 535)
Input Overload Tolerance	Input current limited to 50mA Input Voltage limiting at 6Vdc
Overload / Transient Protection	Transorb/Self Resetting Polyfuse
Conversion Rate	Approx. 2 samples/sec. per point
Noise Rejection (50/60Hz)	-120dB

ANALOG OUTPUTS

Quantity	2 (6 optional)
Output Type	0 or 4 to 20mA
Resolution	12 bits (1 part in 4096)

DISCRETE INPUTS

Quantity	22
Input type	Optically isolated with shared isolated common, AC or DC
ON/OFF Input levels	9Vac/Vdc (min) / 6Vac/Vdc (max)
Maximum input level	50 Vac/Vdc
DI Pulse Counting Rate	
DI #1 and #2	up to 5 KHz
DI #3 and #16	up to 40Hz (50% Duty cycle)

DISCRETE OUTPUTS

Quantity	10
Output Voltage, nominal max.	12/24 Vdc / 0 to 28 Vdc
Output Type, Configuration	Power FET, Sinking to Common
Output Switch Current Rating	.50A @ 20°C, .25A @ 80°C
Overvoltage / Transient Protection	Transorb
Overload Protection / Fault Current	Self Resetting Polyfuse, 750mA

COMMUNICATIONS

Serial Ports	4 (+ 1 internal modem / radio)
Serial Port Interfaces	
COM #1, #2	RS-232, 9 pin D Male
COM #3, #4	RS-485, Removable Terminal Block, #14 to 26 stranded

COMMUNICATIONS OPTIONS (one only per controller)

Internal Spread Spectrum Radios	900MHz, 1W, up to 115Kbaud 2.4GHz, 0.5W, up to 115Kbaud
Telephone modem w/voice	56K Baud, PC compatible

OPERATOR INTERFACE

Display Technology	Alphanumeric LED
Display Format	2 lines x 4 char
Keypad Configuration	4 keys

CONTROL & COMMUNICATIONS PROCESSOR

CPU	Intel 386EX, 25MHz
Memory	4MB Flash, 1MB RAM
Real Time Clock	Dallas DS1689S (IBM/PC comp.)

INPUT / OUTPUT (I/O) RISC PROCESSOR

CPU	Atmel ATMEGA323, 7.37MHz
Memory	32KB Flash, 2KB RAM

GENERAL SPECIFICATIONS

Field I/O Wiring Terminations	Removable Terminal Blocks
Wire Size	#14 to #26 stranded, #12 solid
Dimensions	4.60" W x 6.15" L x 2.85" D (117mm x 156mm x 72mm)
Power	10 to 28Vdc 3 Watts typical 6 Watts max (int. radio transmit)
Operating Temperature	-40°C to 75°C (-40°F to 167°F)
Humidity	5 to 85% RH (non-condensing)

SOFTWARE

IEC 61131-3 (ISaGRAF)	Ladder Diagram (LD) Structured Text (ST) Sequential Function Chart (SFC) Function Block Diagram (FBD) Instruction List (IL) Flow Chart
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C/C++	Supports Borland v3.1 through 5.0 with control & communication
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SCADABUILDER	Point-and-Click configuration of:
Serial Communications	Modbus RTU, Master or Slave Bricknet (Peer-to-peer SCADA) ANSI/VT100 - serial data links up to flash memory capacity up to 100 tel. # lists, 256 #s/list Numeric or alphanumeric pager over 6 minutes message capacity (or more w/compression)
Simple MMI	
Data and Alarm Logging	
Alarm Dialing	
w/pager	
w/Voice	

ORDER PART NUMBERS:

HARDWARE (hardware includes ISaGRAF, ScadaBuilder, and operating system software licenses)

33-0150	Std I/O, no internal radio or modem	33-0160	Std I/O + 4 AO, no internal radio or modem
33-0151	Std I/O, Internal 900MHz Spread Spectrum Radio	33-0161	Std I/O + 4 AO, Internal 900MHz Spread Spectrum Radio
33-0152	Std I/O, Internal 2.4GHz Spread Spectrum Radio	33-0162	Std I/O + 4 AO, Internal 2.4GHz Spread Spectrum Radio
33-0155	Std I/O, 56K baud telephone modem w/voice	33-0165	Std I/O + 4 AO, 56K baud telephone modem w/voice

SOFTWARE

91-3001	ScadaWorks Starter Kit	SCADA System Development Software with ISaGRAF and ScadaBuilder
91-3002	C Starter Kit	Borland C/C++ Compiler Version 5.0, Multitasking Kernel and API Library

Industrial Control Links www.iclinks.com (800) 888-1893 (530) 888-1800 fax (530) 888-7017