

Scadaflex LPR

Wireless Ultra Low Power Remote I/O

Scadaflex LPR modules are ultra low power wireless remote I/O devices in NEMA 4X enclosures that extend the I/O capacity of Scadaflex II and Modulus SCADA controllers via a license-free radio network. The built-in radios form a wide-area mesh network of up to 254 sites to cover a large area with minimum power consumption. Each module in the network automatically serves as a repeater for any other modules that cannot get through directly. Meshing systems are “self healing”; if a node drops out, others take over the message repeater functions.

LPR modules are supplied with a “D” cell lithium battery that can power them for up to several years, eliminating solar equipment or power wiring. They can except external DC power, in which case, the battery can serve as a backup source. Scadaflex LPR modules utilize conventional sensors and can supply the higher DC power required by internally boosting the battery voltage.

LPR modules achieve their extremely low power operation by “sleeping” most of the time until an I/O sample must be taken. They wake up synchronized with the other modules in the system, sample their Inputs, exchange I/O information over the mesh network (always or on change), and then return to a low-power sleep state.

ULTRA LOW POWER BATTERY OPERATION

Scadaflex LPR modules can operate for several years from just a single “D” cell lithium battery. The battery is a non-proprietary type readily available nationwide. External DC power may also be used.

STANDARD SENSOR SUPPORT

LPR modules support low-cost industry-standard sensors. To minimize power consumption, power for the sensors is generated by the module and switched ON just long enough to take their readings .

The LPR module supports resistive sensors for temperature, position and soil moisture measurement, as well as high-speed pulse type devices such as flow meters, with calculated rate and totalization.

SCADAFLEX LPR WIRELESS I/O
29-1001 4DI, 2DO, 4AI (5V), 4AI (sensor)
29-1002 4DI, 2DO, 4AI (20mA), 4AI (sensor)



Scadaflex LPR Ultra Low-power Wireless Remote I/O

- 2 DISCRETE / HIGH-SPEED PULSE INPUTS
- 2 DISCRETE INPUTS (STANDARD)
- 2 DISCRETE OUTPUTS (LATCHING RELAY)
- 4 ANALOG INPUTS (20mA [29-1001] or 5V [29-1002])
- 4 ANALOG INPUTS (TEMPERATURE, RESISTANCE, SOIL MOISTURE)
- 1 1/4 W MESH RADIO
- 1 19AH “D” CELL LITHIUM BATTERY
- 1 OPTIONAL LOW-POWER ULTRASONIC LEVEL SENSOR

WIDE-AREA COVERAGE

Scadaflex LPR modules each have a wireless range of up to about two miles with the supplied antenna, or much farther with elevated higher gain antennas. With their mesh repeating capability, their effective coverage range is many square miles.

LATCHING RELAY OUTPUTS

LPR modules have a pair of mechanical latching relays to provide “dry” contact outputs while consuming power only when switching.

EXTENDED TEMPERATURE OPERATION

LPR modules operate from -40°C to $+70^{\circ}\text{C}$ (although extreme temperatures will reduce battery life).

FIELD I/O

Discrete Inputs:	4	Contact closure to Ground 2 are also high-speed pulse inputs to 10KHz)
Wetting Current:		Approximately 0.2 mA
Discrete Outputs:	2	Latching Relays, 30Vdc / 250Vac, 1A/60W/120VA max.
Analog Inputs:	4	16-bit, Delta Sigma
Input Ranges:		[29-1001] 4 x 5V, 4 x 65,000 ohms [29-1002] 4 x 20mA, 4 x 65,000 ohms Resistance inputs support 2250 ohm thermistors and Irometer Watermark 200SS soil moisture sensors
Maximum signal level:		35Vdc on any range
Sensor Power Output		12Vdc, 50mA maximum
Ultrasonic Level Sensor Option:		500mm (19.7”) to 9999mm (393.7”/ 32.8”), 1mm res

COMMUNICATIONS


Radio:	1	900MHz 1/4W (24dBm) Meshing radio -101 dBm sensitivity @ 200kbps Ultra low-power protocol (optimized power-down/sleep)
Approximate Range:		0.6 miles w/ supplied 2dB whip ant., 6’ elev., flat terrain 2 miles w/ supplied 2dB whip ant., 12’ elev., flat terrain Up to 9 miles w/ 9dB Yagi ant., $\geq 12'$ elev.

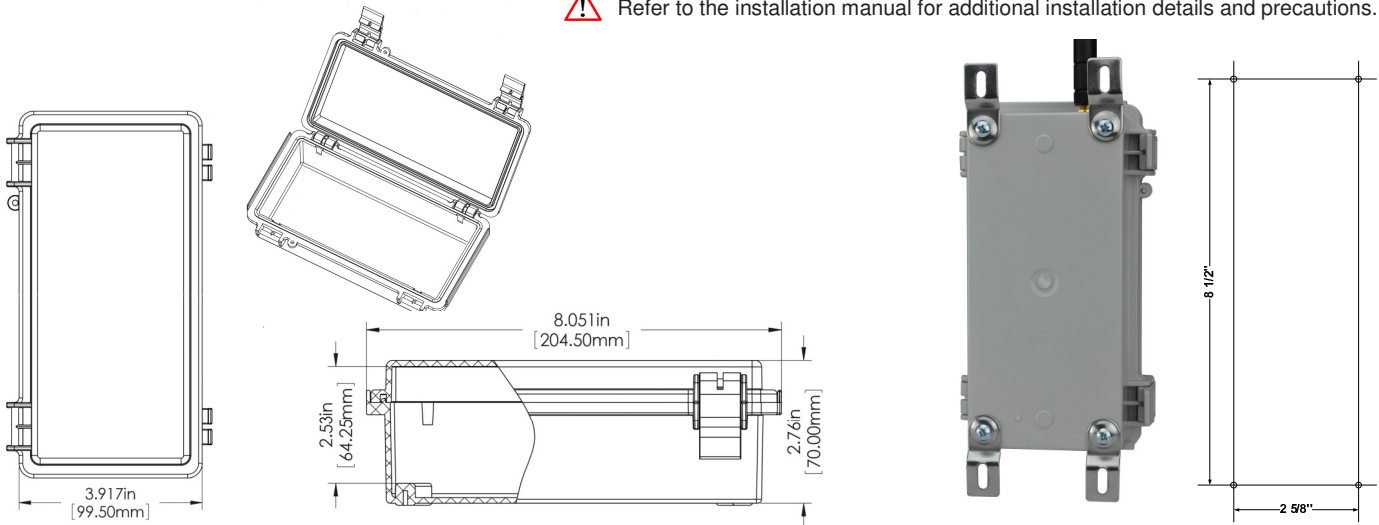
GENERAL

Battery Power:	19AH Lithium Battery
External Input Power (optional)	10Vdc to 30Vdc
Sleeping	1mA @ 12Vdc / 0.5mA @ 24Vdc
Idle, Sensor Power OFF	13mA @ 12Vdc / 6mA @ 24Vdc
Idle, Sensor Power ON	75mA @ 12Vdc / 40mA @ 24Vdc max (depending on sensor consumption)
Transmitting	50mA @ 12Vdc / 25mA @ 24Vdc (short bursts)
Field Wiring Termination:	Screw terminal blocks, 3.5mm, 22 to 14GA wires
Antenna Connector:	RPSMA female (male pin center conductor)
Temperature:	-40°C to 70°C (operating), -40°C to 85°C (storage)
Humidity:	<95% RH (non-condensing)
Enclosure:	8”(H) x 4”(W) x 3”(D), NEMA 4X, Polycarbonate
Electrical Entrance/Exit:	Pre-drilled for 3/4” conduit fitting

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www.iclinks.com
530.888.1800

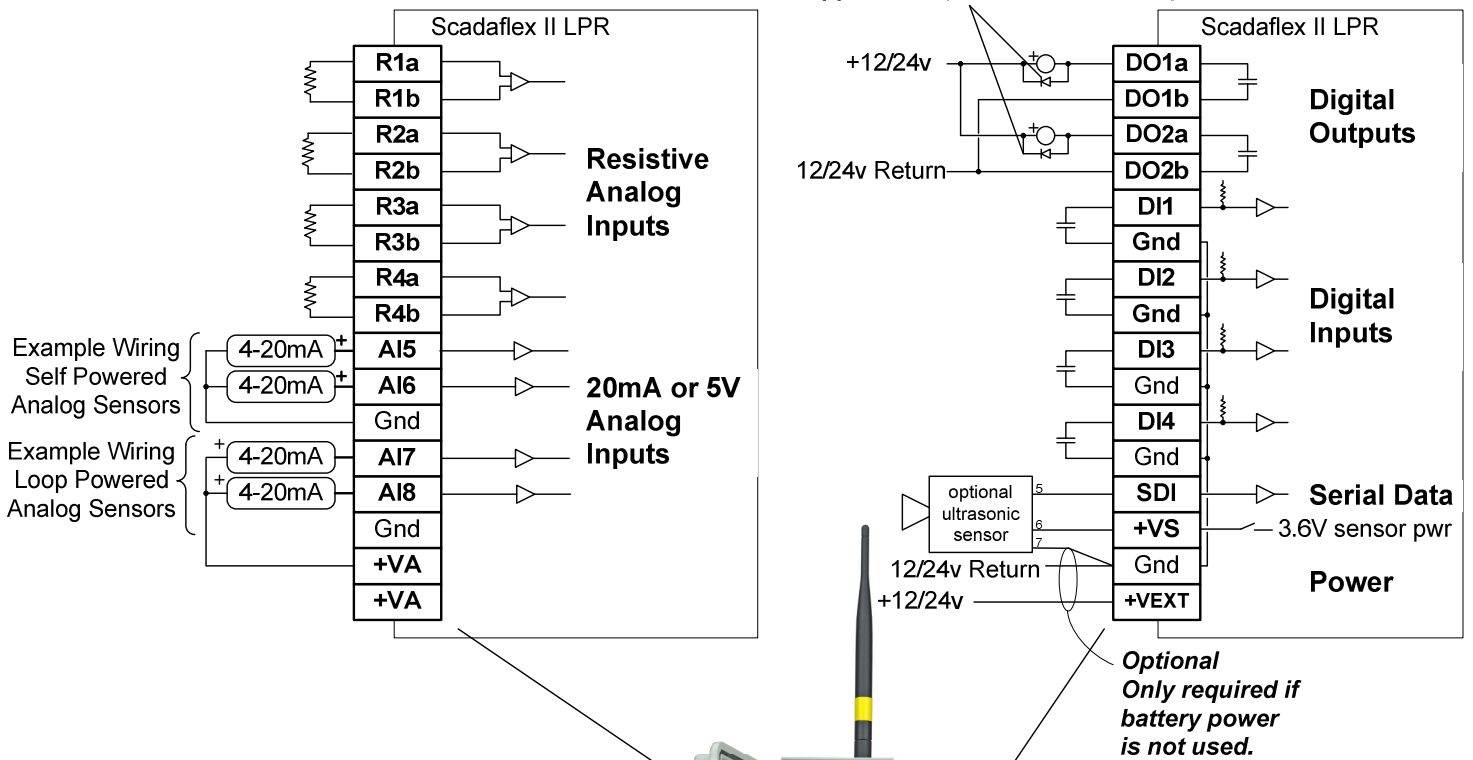
Scadaflex LPR Ultra Low Power Wireless Remote I/O DIMENSIONS, MOUNTING and WIRING

 Refer to the installation manual for additional installation details and precautions.



Wall or Back Plate Mounting (hardware supplied)

Inductive loads, regardless of their size, must have transient suppression (diodes or snubbers).



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