SPECIFICATIONS

Dropiom provides custom controls based on its proprietary Advisor platform. It's a single-unit microprocessor-based system that provides a very large number of standard interfaces that surpasses most powerful and compact controllers on the market and highlight the following advanced functions:

Radio:

- Low-power ISM band RF (2.400 – 2.483 GHz) running proprietary communication protocol with capability for 802.15.4/ZigBee and SimpliciTI

Serial Ports:

- RS232, 422, and 485
- USB-A port with integrated battery charger (3V) NiMH or Li-ion

User Interfaces:

- 5-position joystick and Reset button
- Graphic LCD display 132x32 pixels with backlight and LED

Control Interfaces:

- Open-Drain general purpose output
- 18 Digital general purpose inputs / outputs with interrupt selection
- 32 Analog inputs with programmable continuous sampling & processing

On Board:

- Integrated temperature sensor
- Real-Time clock
- 24M Flash and 256K RAM memory
- Battery (3V) NiMH or Li-ion
- Deep-sleep mode to extend battery life
- Large execution space 4K RAM and program storage 32K flash

Dimension:

- Standard enclosure 70 x 51 x 20 mm [2.7 x 2 x 0.8 in] ABS plastic (W/G /B)
- Hardware 64 x 31 x 11 mm [2.5 x 1.2 x 0.4 in]

Absolute Maximum Rating – Core Unit		Descriptions
Battery		3 NiMH/Li-ion 1.2V-180mA
Storage temperature	with LCD display without LCD display	-30 °C to +80 °C -50 °C to +150 °C
Operating temperature	with LCD display without LCD display	-20 °C to +70 °C -40 °C to +85 °C
ESD per JEDEC STD 22, C101C, CDM		500 V
DC voltage applied to analog inputs		-0.3 V to +3.9 V
DC voltage to logic inputs		-0.3 V to +3.9 V
DC voltage applied to outputs in high-Z state		-0.3 V to +3.3 V
Power supply (charging stops for 7.3 V and higher)		0 V to +16V
Battery charging current		0 mA to +250 mA
Temperature sensor range		-15 to 50 degree Celsius
Temperature sensor resolution		±1.5 degree Celsius

Absolute Maximum Rating – Add on Interfaces	Descriptions
Relative humidity sensor range	10 to 90 %
Relative Humidity sensor resolution	±1 %
Differential pressure sensor range	-0.25 to +025 inch H2O
Differential Pressure sensor resolution	±0.025 inch H2O
Differential Pressure sensor oper. temperature	+10 to +60 degree Celsius
Differential Pressure sensor storage temperature	-30 to +100 degree Celsius
Non-Viable particle counter sensor range	0 to -- 100000/CF
Non-Viable particle counter sensor resolution	NA
AC current sensor range	0 A to 30 A
AC current sensor resolution	±1 %

Additional add on interfaces could be attached are not listed above. Additional specifications (linearity, drift with time…) varies depending on application. Please contact us for your specific requests.

Operating Conditions		Descriptions
DC power supply (USB TypeA-Male)		+4.8 V to +5.5 V
Battery power supply (Internal connector)		+3.5 V to +5 V
Current consumption		+30 mA to +60 mA
ADC resolution (2's complement)		7 bit to 12 bit
ADC sampling rate (without overhead)		50 k/s to 7 k/s
SPI Master baud rate (up to 3 Mbps) (Slave mode available)		2400 bps to 230400 bps
UART 2/4-wire baud rate (up to 1.5 Mbps) RS232[1] and RS485		2400 bps to 230400 bps
GPIO interfaces	core unit with ACQ_32 unit	3 16
Analog inputs	core unit with ACQ_32 unit	3 32
USB		Slave full speed 2.0 compatible
Keypad – All functions are USB and RF accessible		5-position joystick
Audio		3 V – 20 mA open drain

RF Characteristics	Conditions	Min	Typ	Max	Unit
Frequency range		2400		2483	MHZ
Data rate		1.2		500	kBaud
Receiver sensitivity	With -3 dBm variation across the operating temp range	-82	-98	-103	dBm
Transmitter output power	With -3 dBm variation across the operating temp range	-30		+1 +20[2]	dBm
RF coverage range	Open space (Direct LOS) Dense space[3] (offices, building)			500 100	m

[1] Default setting 57.6kb, 8b, no parity, 1 stop bit, no flow control.

[2] Special order
[3] Drywall with 2x4 wood studs increases link budget's losses by approximately 6 dBm. Losses in dense office environment could reach 30 dBm and higher.

Firmware
Proprietary kernel with resource-shared instruction queue
USB core functionality
ISM RF band with custom protocol and variable packet length (up to 63 bytes)

Software
Client based application
Dongle auto-detect/connect
Visual controls and wireless packet sniffer
Data file management including logs and configurations
Email and SMS notifications
Graph with selection filter
Crystal Reports
Backup scheduler

General
Use dry towel to clean unit. DO NOT USE LIQUIDS OR DETERGENTs.
Loss of power at the THP sensor for extended period erases the real-time clock.

Additional specification can be provided on need basis. Dropiom offers full design customization and integration.

REQUIREMENTS

Item	Descriptions
PC operating system & environment	Window XP, 1GRAM, 1024x768 or higher for optimum resolution
Maximum distance between wireless connections	Not to exceed 100 feet
Power line supply to sensor unit location	Not to exceed 6 feet
Pressure tube path for differential pressure sensor	Not to exceed 2 feet length from unit. Orifice OD 4mm

It is recommended to use power lines with surge protection to avoid damages to the unit plug-in adaptor and consequently the sensors units. Although the internal battery sustain the sensor unit operation for extended periods (depending on the unit's model) it is preferable to use uninterrupted power line to avoid draining the battery during long power line interruption and risking monitoring disruption.

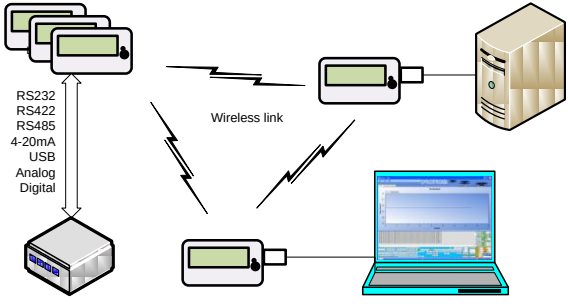
SYSTEM FEATURES

The Advisor product suite is dedicated for measurement, control, and reporting functions. With appropriate interfaces it captures electrical, mechanical, chemical, and thermal wired signals or receives the signals via radio frequency channels, stores the data in non-volatile memory, transmits the data via radio, and controls local and remote interfaces.

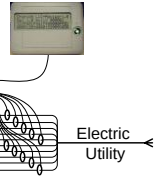
The product is exceptionally small in size and full with features providing high flexibility such remote control operation and distributed processing. The technology can easily integrate into multitude of systems and can communicate over standard protocols.

The current release allows only one repeater in a single coverage zone.

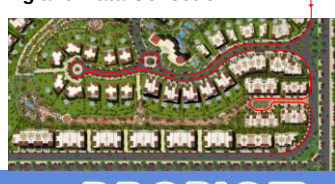
Optimized topologies to better fit each application

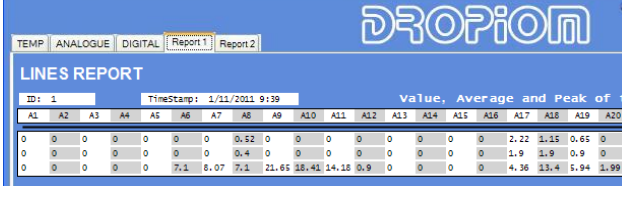


Thermal modeling and Electric energy consumption

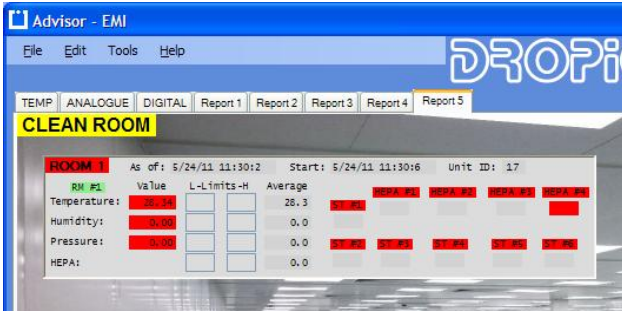


Electric Metering and Data Collection





Data Logging and Reporting



Data Logging and Monitoring with Safety Response

HAVC and Process Control with Data Logging

Electronic Shelf Labeling System