- Wall mount/Indoor transmitter for temperature, relative humidity and two dry contact inputs.
- Dual dry-contact inputs allow integration of light switches, motion and occupancy sensors in any combination.
- Temperature and humidity sensors are digitally calibrated for accuracy and stability.
- **Operates from 12 VDC, 24VDC, 48VDC and 24VAC power supply rails.**
- Two part enclosure, mounts onto a standard single-gang wiring conduit box or can be surface mounted. It is a compact, thin and stylish design: 4.2" W x 4.7" H x 1.2" D
- Open communication standard using LonWorks FT-10 interface with all data and configuration parameters using Standard Network Variables (SNVT) formats for compatibility with other LonWorks devices and systems.
- Power and communication wiring is polarity insensitive.

DESCRIPTION

The Model 1260B is an indoor temperature and humidity transmitter that is self-contained. It contains the temperature sensor, humidity sensor, dual dry contact switch inputs, Neuron processor, measurement electronics, and network communication interface.

The sensor and configuration information is communicated to other devices via Free Topology, FT-10 physical network interface using the LonWorks communication protocol. This interface allows multiple networked devices to communicate over a simple two-wire bus installation.

It contains a flexible switching power supply with a very wide voltage input range. This allows easy integration into building automation, industrial automation as well as telecom systems with ease.

NOTE	This PDF datasheet has attachments. To access them, it may be necessary to use an actual Adobe Reader. since some readers built into internet browsers do not allow access to attachments.

Temperature and Humidity Sensors

The Model 1260B uses an integrated temperature and humidity sensor. The temperature sensor is on the same die as the humidity sensor and the entire assembly is digitally calibrated for accuracy and stability. The humidity reading is corrected for temperature effects.

Accuracy of temperature sensor is 0.4 C typical while RH accuracy is 2% typical. See specification section for more details. If desired, the user can enter an temperature offset, nciTempOffset and or an RH offset, nciRHOffset, to fine tune the reading.

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Power Supply

The Model 1260B features an exceptionally flexible switching power supply. It can easily integrate into building automation, industrial automation, telecommunication and remote telemetry type systems. It operates from 12 VDC, 24 VDC, 48 VDC and 24 VAC power supply rails with a design margin better than +/-25% to allow for installation variations. A main advantage of the on board power supply is low power consumption. The unit draws less than 5 mA at 24 VDC. This makes it ideal for low cost battery backup systems if one is desired.

The power supply is well protected against overvoltage and short circuit protected against most internal and external fault conditions. On board thermal fuses do not have to be replaced. They will simply recover when the fault condition is corrected.

Dry Contact Inputs

Up to 2 dry contact inputs can be connected to the Model 1260B. The inputs can be used in any combination for lighting switches, motion sensors or occupancy sensors.

The interpretation of each switch input is available in many different formats via output network variables. Simply use the desired output network variable that fits the application. No configuration is necessary. By default the switch inputs are interpreted as active when the switch is closed. This can be inverted by setting nciSwInvert[] configuration variable to 1. Please note, the brackets, [], indicate there is one configuration variable for each of the switch/dry contact inputs.

The nvoSwState[] network variable output follows the state of the dry contact. It is set to OFF when the switch is inactive and to ON when switch is active. The nvoSwToggle[] network output toggles between OFF and ON each time the switch first becomes active. This is ideal for turning a light on or off using a momentary switch.

For motion sensing applications, the output is available in two formats. The nvoMotion[] and nvoOccupancy[] output network variables are normally set to OFF and OC_UNOCCUPIED respectively. They are set to ON and OC_OCCUPIED respectively while the dry contact input is active and remain in that condition for a period of nciSwOnMinutes[] after the switch becomes inactive.

High and Low Temperature and Humidity Alarms

The Model 1260B has high and low temperature and humidity alarm setpoints, which trigger output network variables for communicating the alarm conditions to other LonWorks products. Alarm deadbands, nciTempAlmDb, and nciRhAlmDb implement hysteresis on temperature and humidity alarm setpoints respectively.

The nvoTempHiAlm is set to ON when nvoTemp is larger or equal to nciTempHiAlmSp and turn off when nvoTemp is below nciTempHiAlmSp - nciTempAlmDb. nvoTempHiAlm is set to NUL if hardware problems are detected.

The nvoTempLoAlm is set to ON when nvoTemp is lower or equal to nciTempLoAlmSp and turn off when nvoTemp is above nciTempLoAlmSp + nciTempAlmDb.   nvoTempLoAlm is set to NUL if hardware problems are detected.

The nvoRhHiAlm is set to ON when nvoRh is larger or equal to nciRhHiAlmSp and turn off when nvoRh is below nciRhHiAlmSp - nciRhAlmDb. nvoRhHiAlm is set to NUL if hardware problems are detected.

The nvoRhLoAlm is set to ON when nvoRh is lower or equal to nciRhLoAlmSp and turn off when nvoRh is above nciRhLoAlmSp + nciRhAlmDb.   nvoRhLoAlm is set to NUL if hardware problems are detected.

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Status / Service LED and Switch

A Status LED is on the front of the Model 1260B. By default it is NOT active and must be activated using input configuration network variables. The status LED is a dual color LED that is green/orange .The orange LED is only activated when the Service Switch at bottom of enclosure is pressed.

The green LED is used for status. It flashes to indicate that the unit is operating properly. It stops flashing to indicate an error condition or alarm is active if enabled.

The nciLedEnable configuration network variable is by default set to 0 or OFF. It can be set to 1 or ON to enable the Status LED display function.
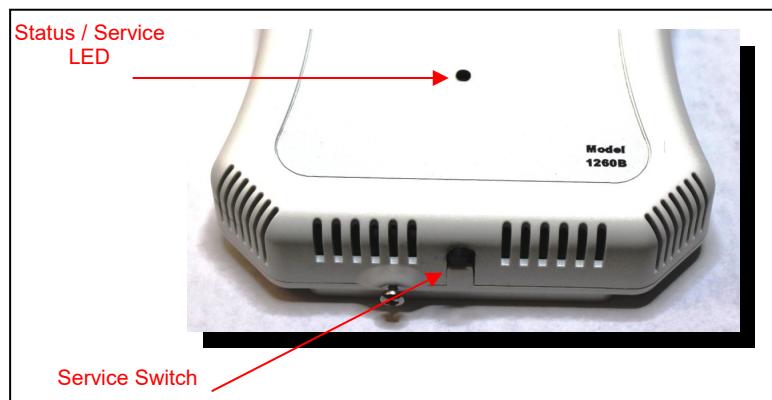
By default, nciLedAlmsEnable is set to 0 or OFF and the Status LED will only reflect the status of hardware if nciLedEnable is also ON. If . nciLedAlmsEnable is set to 1 or ON, it will reflect the status of the hardware as well as the High and Low temperature and humidity alarms.

Wiring and Installation

The Model 1260B is supplied in a two part enclosure with features as shown in the diagram to the right. The base is typically mounted on a single gang conduit box or can also be wall mounted directly to a wall using standard surface adapters that are widely available. A single eight-position terminal block is captive in the base and is used to attach all wiring connections.

The top is then plugged into the base and the top and bottom screws secure the base to the top. The screws only need to be turned one or two turns to secure or to loosen the top from the base. **You do not need to remove the screws. They are intended to stay attached to base.**

Please see the wiring diagram to the right showing all connections. A more detailed explanation of each connection is explained in the table below. The two dry contacts are optional and not required for operation.

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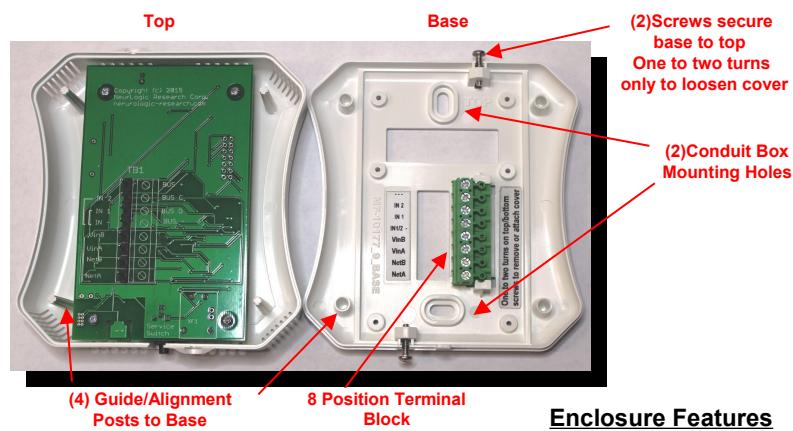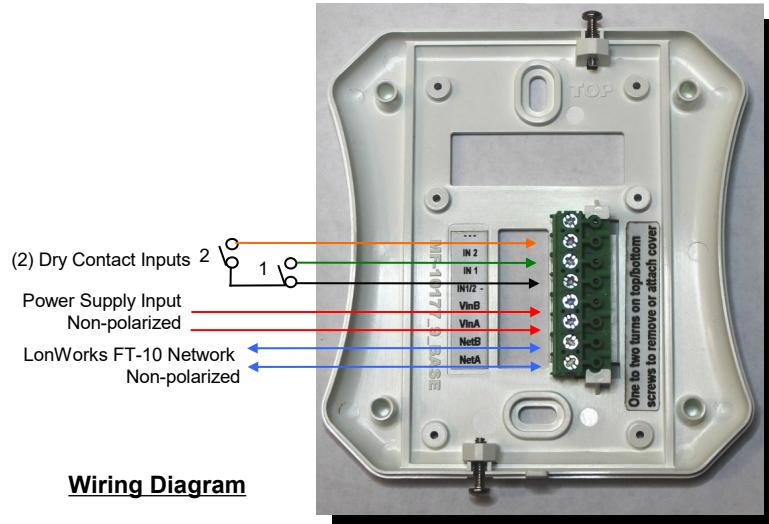
Please note, the top portion of the unit has four alignment posts that guide and align the top to the base insuring the connection pins on the top printed circuit board go into the wiring terminal block. Once the top is plugged into the base, simply turn the top and bottom screws a couple of turns clockwise. The unit should be

TERMINAL BLOCK WIRING FUNCTION	
NetA / NetB	Polarity insensitive FT-10 network connection
VinA / VinB	Polarity insensitive power supply connection
IN 1/2 -	Dry contact/Switch inputs common
IN1	Dry contact input 1
IN2	Dry contact input 2
-----	Future expansion, not used, do not connect

NETWORK INTERFACE

The Model 1260B uses the Echelon FT-10 network transceiver interface with DC blocking capacitor so it can also be directly connected to LPT-10 networks. Before the Model 1260B can be used, it must first be installed into a LonWorks network. This procedure is slightly different for each system. It often involves telling the system to add a new device. The system will then ask the user to press the Service button on the device. When pressed, the Model 1260B will transmit its unique physical Neuron ID. The System then assigns a logical address to the unit and then data from the device is available. The data is available using Standard

mounted to an open area on a wall, 4-5 feet above the ground, and with orientation depicted in the pictures.

NOTE	**Mounting the unit sideways or upside down will affect its accuracy**.

Network Variable formats that have been defined by the LonMark Association. The Model 1260B has self documentation of the network interface enabled and it can be uploaded by the installation tool. Additionally, an XIF is also attached to this PDF datasheet.

NOTE	This PDF datasheet has attachments. To access them, it may be necessary to use an actual Adobe Reader. since some readers built into internet browsers do not allow access to attachments.

Configuration Network Variables

Configuration network variables are input network variables that are non-volatile and retained when power is lost. If using the Echelon LonMaker software, simply use the Browser to view and edit the following values.

Network Variable	Format	Default	Description
nciTempOffset	SNVT_temp_diff_p	0.0 C	Offset for temperature calibration. This value is added to nvoTemp
nciTempDelta	SNVT_temp_diff_p	0.3 C	Minimum change required temperature network output update.
nciRHOffset	SNVT_lev_percent	0.0%	Offset for temperature calibration. This value is added to nvoTemp
nciRHDelta	SNVT_lev_percent	1.0%	Minimum change required for nvoRH network output update.
nciMinSendT	SNVT_time_sec	5.0 seconds	Minimum time between temperature and humidity network output updates even if nciTempDelta or nciRHDelta are met.
nciMaxSendT	SNVT_time_sec	30.0 seconds	Maximum time between network variable updates whether or not changes occur. This is sometimes called heartbeat.
nciSwMinSendT	SNVT_time_sec	0.5 seconds	Minimum time between alarm and switch related output network variables whether or not a change occurred. Applies to both switch inputs
nciSwInvert[2]	SNVT_ count	0/OFF	When set to 0/OFF the dry contact is active when closed. When set to 1/ON reverses this action. One parameter per input.
nciSwOnMinutes[2]	SNVT_count	5.0 minutes	Number of minutes nvoMotion and nvoOccupancy are activated. One parameter per input.
nciLedEnable	SNVT_ count	0/OFF	When set to 1/ON enables the output status LED operation.
nciLedAlmsEnable	SNVT_ count	0/OFF	When set to 1/ON, the status LED will reflect the high and low alarm conditions. nciLedEnable also has to be 1/ON
nciTempHiAlmSp	SNVT_temp_p	100.0 C	High temperature alarm setpoint.
nciTempLoAlmSp	SNVT_temp_p	-100.0 C	Low temperature alarm setpoint.
nciTempAlmDb	SNVT_temp_diff_p	1.0 C	Temperature alarm deadband. Controls temperature alarm hysterisis.
nciRhHiAlmSp	SNVT_lev_percent	100.0 C	High humidity alarm setpoint.
nciRhLoAlmSp	SNVT_lev_percent	-100.0 C	Low humidity alarm setpoint.
nciRhAlmDb	SNVT_lev_percent	1.0 C	Humidity alarm deadband. Controls humidity alarm hysterisis.

Output Network Variables

The Model 1260B firmware is designed to control output network variable traffic for integration into large LonWorks networks. On power up the unit randomizes the start of network updates. The nciMaxSendT configuration network variable is the send heartbeat for the entire device. Output network variables will be transmitted at least once every nciMaxSendT. To disable this, set nciMaxSendT to 0.

The output network variables nvoTemp, nvoFixPtTemp, and nvoFloatTemp are only transmitted if there is a minimum of nciTempDelta change form the last transmitted value. The output network variable nvoRH is only transmitted if there is a minimum of nciRHDelta. However, they are only transmitted if nciMinSendT has elapsed since last update. nciMinSendT acts as a throttle to minimize traffic even if the data is changing rapidly.
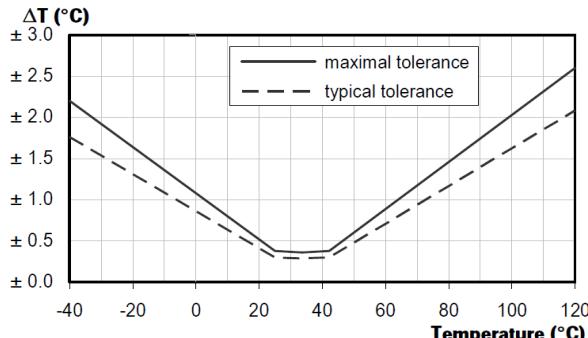
The nciMinSwSendT is the throttle for nvoTempHiAlm, nvoTempLoAlm, nvoRhHiAlm, nvorRhLoAlm, nvoSwState[], nvoSwToggle[], nvoMotion[], and nvoOccupancy[] output network variables.

Network Variable	Format	Description
nvoTemp	SNVT_temp_p	Temperature output 0.01 C resolution. Set to 327.67 on any hardware errors.
nvoFixPtTemp	SNVT_temp	Temperature output. 0.1 C resolution. Set to 6279.5 on any hardware errors.
nvoFloatTemp	SNVT_temp_f	Temperature in floating point format. Set to 1E38 on any hardware error.
nvoSwState[2]	SNVT_switch	State of dry contact input. ST_ON if switch is active, ST_OFF if switch is in-active. By default, switch is active when contacts are closed but can be inverted using the nciSwInvert configuration variable.
nvoSwToggle[2]	SNVT_switch	Toggle between ST_ON and ST_OFF every time the dry contact switch is activated.
nvoMotion[2]	SNVT_switch	Set to ST_ON for nciSwOnMinutes while the dry contact input is activated.
nvoOccupancy[2]	SNVT_occupancy	Normally at OC_UNOCCUPIED and set to OC_OCCUPIED for nciSwOnMinutes while the dry contact input is activated.
nvoTempHiAlm	SNVT_switch	High temperature alarm output status. Set to ON when alarm is active, OFF when inactive, and NUL on any hardware error.
nvoTempLoAlm	SNVT_switch	Low temperature alarm output status. Set to ON when alarm is active, OFF when inactive, and NUL on any hardware error.
nvoRhHiAlm	SNVT_switch	High humidity alarm output status. Set to ON when alarm is active, OFF when inactive, and NUL on any hardware error.
nvoRhLoAlm	SNVT_switch	Low humidity alarm output status. Set to ON when alarm is active, OFF when inactive, and NUL on any hardware error.
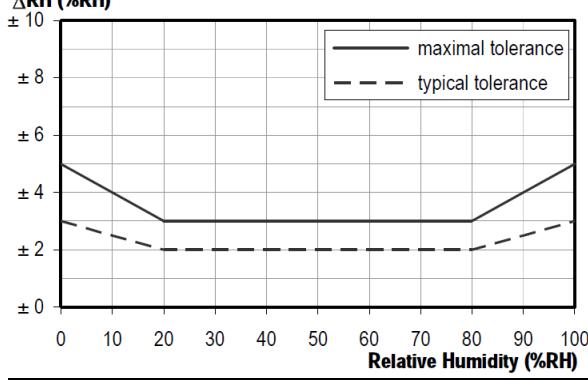
SPECIFICATIONS

Temperature

Sensing Element	Solid state
Model 1205 Standard Accuracy	
Temperature Range	-40 to 85C
Resolution	0.06 C

Relative Humidity

Model 1205 Standard Accuracy at 25C	
Resolution	0.05%
Maintenance	No routine maintenance required Bronze filter is removable for cleaning Sensor Module is field replaceable.
Sensor Stability	<0.5% RH typical per year (See notes 1 &2)
Notes	• Sensor drift and inaccuracies maybe higher if sensor is exposed to high contents of volatile organic compounds. • Long term exposure to >80% RH may temporarily offset RH by up to 3% after 60 hours. This recoverable after return to lower RH levels.

Electronics

Operating Environment	-20 to 70 C, 0-95% RH non-condensing
CPU	FT5000 Neuron
Input Voltage Operating	8 to 55 VDC or 18 to 39 VAC at 0.25W maximum.
Input Voltage Maximum	65 VDC / 45 VAC. Please note at this voltage the unit will start to draw more current and may trip the internal thermal fuses but will not be damaged. Normal operation resumes when voltage returns to operationg range.
Input Power Protection	Input power is fused and transient voltage protected. (Fuses do not need to be replaced)
Network Transceiver Type	Echelon Free Topology FT-10 transceiver at 78 kbps. Up to 60 volts DC blocking capacitors for LPT10 network. Network interface is isolated and transient voltage protected.

Dimension and Materials

Electronics Compartment	4.2" W x 4.7" H x 1.2" D
Housing Material	ABS Plastic

ORDERING INFORMATION

1260B	Wall Mount LonWorks Temp/RH Transmitter with Dual Switch Inputs

Code	Housing Color
WH	White ABS Plastic Housing

1260B	-WH	Model 1260B with white ABS housing

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