

Pyrobutton PBX

초소형 단추형 무선 데이터로거

Data-logger



크기: 지름 17mm

강인함: 방진방수(IP68). 부식 저항성(Applicable to EO gas)

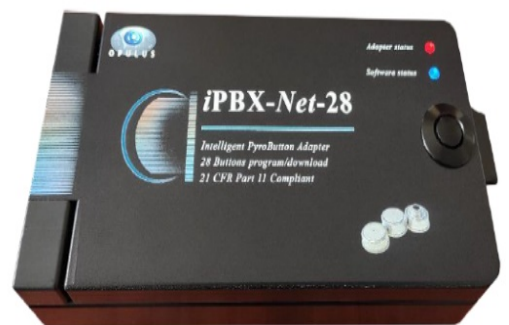
Range: -40~150 °C, ~100%RH, ~700kpa

Battery 교체 가능, 21 CFR part 11 compatible.



Adaptor

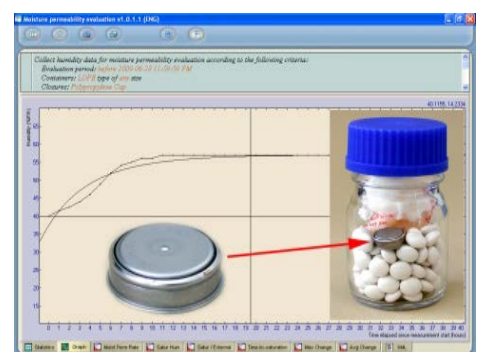
4, 28, 60구



Software

SQL or Simple.

Windows 10 compatible



| Code | Description |
|---|--|
| PyroButton data-logger packages | |
| <p>100-PKX-005-100</p>  | <p>Sterilization Process Management - Steam Package. A 21 CFR Part 11 compliant System with eManual & eTutorial. Includes: (1) 4 x PyroButton-X/PE - Calibrated, self-powered temperature device. Temperature range 0 to 150°C; Temperature resolution $\pm 0.015^\circ\text{C}$; Calibrated Temperature accuracy (uncertainty) $\pm 0.1^\circ\text{C}$. Pressure range 1 to 700 kPa; Pressure resolution 120Pa. Memory capacity: 59800 recorded data points. Calibrated at 5-points relative to NIST reference or equivalent International Reference. Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement. (2) iPBX-N28 Intelligent USB high speed Docking Station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 28 PyroButtons and PyroButtons-X family. (3) PyroButton-SQL v.4 software with 21 CFR Part 11 compliance. Windows 10 compatible. Includes 2016 MS SQL Express with SPC (includes: Sterilization, Applications, Basic, Clean Room, Equipment, Facility, Meteorological, Process, Stability chamber, Transportation, Container/Closures modules; provides heat & moisture distribution map, loading effects, container/closure evaluation, PQ, and much more. Built-in automatic correction of measurement based on the calibration data. Signal processing program module for optimization of signal smoothing for the reduction of inherent noise of applicable sensors' measurements, which improves the reliability of results. Built-in uncertainty of measurement calculation). (4) IQ-OQ-PQ & 21 CFR Part 11 Verification Protocols: 1 workstation license</p> |
| <p>100-PKE-006-100</p>  | <p>Sterilization Process Management - ETO Package. A 21 CFR Part 11 compliant System with eManual & eTutorial. Includes: (1) 4 x PyroButton-Xi/TH - Calibrated, self-powered Intrinsically Safe & IP68 compliant temperature/humidity data-logger. Temperature range -20 to +85°C; Temperature resolution $\pm 0.025^\circ\text{C}$; Calibrated temperature accuracy (uncertainty) $\pm 0.1^\circ\text{C}$. Humidity range 0 – 100% RH; Calibrated humidity resolution $\pm 0.04\%$ RH; Calibrated humidity accuracy (uncertainty) $\pm 1.5\%$ RH. Memory capacity: 59800 recorded data points. Calibrated at 5-temperature points relative to NIST reference and 5-humidity points. Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement. (2) iPBX-N28 Intelligent USB high speed Docking Station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 28 PyroButtons and PyroButtons-X family. (3) PyroButton-SQL v.4 software with 21 CFR Part 11 compliance. Windows 10 compatible. Includes 2016 MS SQL Express with SPC (includes: Sterilization, Applications, Basic, Clean Room, Equipment, Facility, Meteorological, Process, Stability chamber, Transportation, Container/Closures modules; provides heat & moisture distribution map, loading effects, container/closure evaluation, PQ, and much more. Built-in automatic correction of measurement based on the calibration data. Signal processing program module for optimization of signal smoothing for the reduction of inherent noise of applicable sensors' measurements, which improves the reliability of results. Built-in uncertainty of measurement calculation). (4) IQ-OQ-PQ & 21 CFR Part 11 Verification Protocols: 1 workstation license</p> |

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|---|--|
| <p>100-PKX-007-100</p>  | <p>Packaging Validation Process Management Pro Package. A 21 CFR Part 11 compliant System with eManual & eTutorial. Includes: (1) 4 x PyroButton-X/THP - Calibrated, self-powered temperature/humidity/pressure data-logger. Temperature range -40 to +85°C; Temperature resolution ±0.005°C; Calibrated temperature accuracy (uncertainty) ±0.1°C. Humidity range 0 – 100% RH; Calibrated humidity resolution ± 0.08% RH; Calibrated humidity accuracy (uncertainty) ±1.5% RH. Pressure dynamic range: 30 (1) to 110 kPa Pressure resolution: 0.18 Pa Memory capacity: 29900 recorded data points. Calibrated at 5-temperature points relative to NIST reference and 5-humidity points. Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement. (2) iPBX-N28 Intelligent USB high speed Docking Station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 28 PyroButtons and PyroButtons-X family. (3) PyroButton-SQL v.4 software with 21 CFR Part 11 compliance. Windows 10 compatible. Includes 2016 MS SQL Express with SPC (includes: Applications, Basic, Clean Room, Equipment, Facility, Meteorological, Process, Stability chamber, Sterilization, Transportation, Container/Closures modules; provides heat & moisture distribution map, loading effects, container/closure evaluation, PQ, and much more. Built-in automatic correction of measurement based on the calibration data. Signal processing program module for optimization of signal smoothing for the reduction of inherent noise of applicable sensors' measurements, which improves the reliability of results. Built-in uncertainty of measurement calculation). (4) IQ-OQ-PQ & 21 CFR Part 11 Verification Protocols 1 workstation license</p> |
| <p>100-PKX-010-100</p>  | <p>Transportation Temperature Management-Advanced System for Pharmaceutical, Biotech, & Medical Device. A 21 CFR Part 11 compliant product with eManual & eTutorial. Includes: (1) 4 x PyroButton-X/L - Calibrated, self-powered IP68 compliant temperature data-logger. Temperature range -40 to +85°C; Temperature resolution 0.0078°C, Calibrated temperature accuracy ±0.1°C. Memory capacity: 119700 recorded data points. Calibrated at 5-points relative to NIST or International reference. Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement. (2) iPBX-N28 Intelligent USB high speed Docking Station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 28 PyroButtons and PyroButtons-X family. (3) PyroButton-SQL v.4 software with 21 CFR Part 11 compliance. Windows 10 compatible. Includes 2016 MS SQL Express with SPC (includes: Applications, Basic, Clean Room, Equipment, Facility, Meteorological, Process, Stability chamber, Sterilization, Transportation, Container/Closures modules; provides heat & moisture distribution map, loading effects, container/closure evaluation, PQ, and much more. Built-in automatic correction of measurement based on the calibration data. Signal processing program module for optimization of signal smoothing for the reduction of inherent noise of applicable sensors' measurements, which improves the reliability of results. Built-in uncertainty of measurement calculation). (4) IQ-OQ-PQ & 21 CFR Part 11 Verification Protocols 1 workstation license</p> |

| Code | Description |
|--|--|
| PyroButton Self-powered temperature & humidity data-loggers | |
| <p>100-PBX-000-100</p>   | <p>PyroButton-XL (PBX/L) Calibrated Low Temperature data-logger</p> <p>Dimensions: 17mm diameter x 7.5 mm height Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing.) It is the smallest advanced self-powered temperature data-logger on the market.</p> <p>Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation.</p> <p>Electronics integrity: The electronics are sealed and protected up to IP68 and 700 kPa (7 Bar) load from corrosive environments. Weight: 6.01 g Volume: 1.56 cm³</p> <p>Ingress Protection rating: IP68 Dynamic range: -40 to 85°C Temperature resolution: ±0.0078 °C Memory capacity at 0.0078 °C resolution: 119700 readings Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST or International reference. Measurements are corrected relative to the calibration data. In addition to the calibration results and critical meta data (PB), the verification results and complete meta data are stored in PBX. Calibrated Temperature accuracy (uncertainty): ±0.1°C Data acquisition rate: 1s24 hrs Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement</p> |
| <p>100-PBX-001-100</p>   | <p>PyroButton-XiL (PBXi/L) Calibrated Low Temperature data-logger</p> <p>Intrinsically Safe</p> <p>Dimensions: 17mm diameter x 7.5 mm height Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing.) It is the smallest advanced self-powered temperature data-logger on the market.</p> <p>Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation.</p> <p>Electronics integrity: The electronics are sealed and protected up to IP68 and 700 kPa (7 Bar) load from corrosive environments, such as Ethylene Oxide (EO). Suitable for EO sterilization. Weight: 6.01 g Volume: 1.56 cm³</p> <p>Ingress Protection rating: IP68 Dynamic range: -20 to 85°C Temperature resolution: ±0.0078 °C Memory capacity at 0.0078 °C resolution: 119700 readings Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST or International reference. Measurements are corrected relative to the calibration data. In addition to the calibration results and critical meta data (PB), the verification results and complete meta data are stored in PBX. Calibrated Temperature accuracy (uncertainty): ±0.1°C Data acquisition rate: 1s24 hrs Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement.</p> |

100-PBX-002-
100



PyroButton-XE (PBX/E) Calibrated High Temperature data-logger

Dimensions: 17mm diameter x 7.5 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing). It is the smallest advanced self-powered temperature data-logger on the market.

Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to IP68 and 700 kPa (7 Bar) load from corrosive environments.

Weight: 6.01 g

Volume: 1.56 cm³

Ingress Protection rating: IP68

Dynamic range: 0 to 150°C

Temperature resolution: ±0.0078°C

Memory capacity at 0.0078 resolution: 119700 readings

Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST or International reference. Measurements are corrected relative to the calibration data. In addition to the calibration results and critical meta data (PB), the verification results and complete meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Data acquisition rate: 1s24 hrs

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11

100-PBX-003-
100



PyroButton-XTH –(PBX/TH) Calibrated Temperature & Humidity data-logger

Dimensions: 17mm diameter x 7.5 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing). It is the smallest advanced self-powered temperature & humidity data-logger on the market.

Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to IP68 and 700 kPa (7 Bar) from corrosive environments.

Weight: 5.64 g Volume: 1.56 cm³

Ingress Protection rating: IP68

Dynamic Temperature range: -40 to 85°C

Temperature resolution: ±0.025°C

Memory capacity at 0.025 resolution: 59800 readings

Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST or International reference. Measurements are corrected relative to the calibration data. In addition to the calibration results and critical meta data (PB), the verification results and complete meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Dynamic Humidity range at 25°C: 0 to 100 %RH

Humidity resolution: ±0.04 %RH

Memory capacity at 0.04 resolution: 59800 readings

Calibrated Humidity accuracy (uncertainty): ± 1.5 %RH

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement.

100-PBX-103-
100



PyroButton-XiTH –(PBXi/TH) Calibrated Temperature & Humidity data-logger

Intrinsically Safe

Dimensions: 17mm diameter x 7.5 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing). It is the smallest advanced self-powered temperature & humidity data-logger on the market.

Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to 700 kPa (7 Bar) from corrosive environments, such as Ethylene Oxide (EO). **Suitable for EO sterilization**

Weight: 5.64 g

Volume: 1.56 cm³

Ingress Protection rating: IP68

Dynamic Temperature range: -20 to 85°C

Temperature resolution: ±0.025°C

Memory capacity at 0.025 resolution: 59800 readings

Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST or International reference. In addition to the calibration results and critical meta data (PB), the verification results and complete meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Dynamic Humidity range at 25°C: 0 to 100 %RH

Humidity resolution: ±0.04 %RH

Memory capacity at 0.04 resolution: 59800 readings

Calibrated Humidity accuracy (uncertainty): ± 1.5 %RH

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement.

100-PBX-004-
100



PyroButton-XPE (PBX/PE) Calibrated High-Temperature and High-Pressure data-logger

Dimensions: 17mm diameter x 10.2 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing.) It is the smallest advanced self-powered temperature and pressure data-logger on the market.

Advancements: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to 700 kPa (7 Bar) from corrosive environments. Suitable for Steam and Heat sterilization.

Weight: 6.56 g

Volume: 2.12 cm³

Temperature Dynamic range: 0 to 150°C

Temperature resolution: ±0.015 °C

Memory capacity at high resolution: 59800 readings

Enhanced Regulatory Compliance: Calibrated at 5-points relative to NIST reference or equivalent International Reference. In addition to the calibration results and critical meta data (PB), the verification results and extended meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Pressure dynamic range: 1 to 700 kPa

Pressure resolution: 120 Pa

Calibrated accuracy (uncertainty): TBA (to be announced)

Data acquisition rate: 1s24 hrs

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11 requirement.

100-PBX-005-
100



PyroButton-XTHP (PBX/THP) Calibrated Temperature, Humidity and High-Precision Pressure data-logger

Dimensions: 17mm diameter x 7.5 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing). It is the smallest advanced self-powered temperature, humidity and high sensitivity pressure data-logger on the market.

Advancements:

Visual identification: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to 700 kPa (7 Bar) from corrosive environments.

Three-in-One/Triple-sensor: In addition to temperature and humidity highly sensitive/high resolution pressure sensor provide small pressure changes

Weight: 5.89 g

Volume: 1.56 cm³

Temperature dynamic range: -40 to 85°C

Temperature resolution: ±0.005°C

Memory capacity: 29900 readings

Enhanced Regulatory Compliance: Calibrated at 5-temperature points relative to NIST reference and 5-humidity points. In addition to the calibration results and critical meta data (PB), the verification results and extended meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Dynamic Humidity range at 25°C: 0 to 100%RH

Humidity resolution: ±0.008 %RH

Calibrated Humidity accuracy (uncertainty): ±1.5 %RH

Pressure dynamic range: 30 (1) to 110 kPa

Pressure resolution: 0.18 Pa

Data acquisition rate: 1s24 hrs

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11

100-PBX-105-
100



PyroButton-XiTHP (PBXi/THP) Calibrated High Precision Pressure, Humidity and Temperature data-logger

Intrinsically Safe

Dimensions: 17mm diameter x 7.5 mm height

Sensor and electronics are housed in a 304 ss food grade housing (i.e., FDA approved for use in food processing). It is the smallest advanced self-powered temperature, humidity and high sensitivity pressure data-logger on the market.

Advancements:

Visual identification: Improved laser engraving for enhanced visibility of identifiers including QR code. Battery & sensor are factory replaceable to ensure sustainable and environmentally friendly operation

Electronics integrity: The electronics are sealed and protected up to 700 kPa (7 Bar) from corrosive environments, such as Ethylene Oxide (EO). **Suitable for EO sterilization.**

Three-in-One/Triple-sensor: In addition to temperature and humidity highly sensitive/high resolution pressure sensor determines small pressure changes

Weight: 5.89 g

Volume: 1.56 cm³

Temperature dynamic range: -20 to 85°C

Temperature resolution: ±0.005°C

Memory capacity: 29900 readings

Enhanced Regulatory Compliance: Calibrated at 5-temperature points relative to NIST reference and 5-humidity points. In addition to the calibration results and critical meta data (PB), the verification results and extended meta data are stored in PBX.

Calibrated Temperature accuracy (uncertainty): ±0.1°C

Dynamic Humidity range at 25°C: 0 to 100%RH

Humidity resolution: ±0.008 %RH

Calibrated Humidity accuracy (uncertainty): ±1.5 %RH

Pressure dynamic range: 30 (1) to 110 kPa

Pressure resolution: 0.18 Pa

Data acquisition rate: 1s24 hrs

Measurements are corrected relative to the calibration data. Data integrity protection inclusion for 21 CFR Part 11

| Code | Description |
|---|--|
| PyroButton adapters- programming/data-download | |
| 100-XAE-004-100 | iPBX-N4 intelligent USB high speed docking station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 4 PyroButtons-X . |
| 100-XAE-028-100 | iPBX-N28 intelligent USB high speed docking station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 28 PyroButtons and PyroButtons-X family. |
| 100-XAE-060-100 | iPBX-N60 intelligent USB high speed docking station with automatic recognition of PBX positions. Suitable for parallel programming /data-download for 60 PyroButtons and PyroButtons-X family. |

| Code | Description |
|--|--|
| PyroButton software for Self-powered temperature & humidity monitoring system | |
| 100-PBX-007-020E | PyroButton-X Simple software for PyroButton-X data-loggers. Windows 10 compatible PBX Simple is an effective solution for self-powered PyroButton-X (PBX) data-logger temperature, humidity, and pressure measurements, including validation, mapping, monitoring, sterilization, and stability studies. This is a file version software, which means there is no database behind the software. |
| 100-PBX-007-023E | PyroButton-SQL v.4 software with 21 CFR Part 11 compliance. Windows 10 compatible (network version available) with 2016 MS SQL Engine and SPC. New – expanded sensor capabilities: Supports Temperature, Humidity, Pressure, Ethylene Oxide, VOC and others, as added. Includes 2016 MS SQL Express with SPC (includes: Applications, Basic, Clean Room, Equipment, Facility, Meteorological, Process, Stability chamber, Sterilization, Transportation, Container/Closures modules; provides heat & moisture distribution map, loading effects, container/closure evaluation, PQ, and much more. Built-in automatic correction of measurement based on the calibration data. Signal processing program module for optimization of signal smoothing for the reduction of inherent noise of applicable sensors' measurements, which improves the reliability of results. Built-in uncertainty of measurement calculation). 21 CFR Part 11 compliant 1 workstation license. Includes: eManual, eTutorial IQ-OQ-PQ & 21 CFR Part 11 verification protocols. |