

SD⁺ 302-22



Storage Cabinet



Outstanding performance

The newest and highest performance version in the venerable SD range is the SD⁺. New, upgraded hardware and software include a high accuracy digital sensor and integrated data logger. All climate data can be tracked and recorded over time through an Ethernet connection and included software.

The integrated data logger can provide all climate data and door openings from the cabinet through Ethernet and free available software, for further analysis.

The circulation of air in the cabinet is regulated through an integrated fan.

All surfaces are ESD coated in conformity with current ESD 61340-5-1 standard.

The SD⁺ 302-22 is ideal for the moisture-proof and anti-oxidation storage of wide-ranging technologies and conforms with IPC/JEDEC J-STD 033C & IPC-1601.



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Standard Features

✓ Online functionality	Interface and data logging through standard Ethernet interface Compatible with new MSL 2.0 software
✓ ESD safe design	Norm (IEC 61340-5-1) ESD metal painted body (<10 ⁶ Ohm/sq) Dissipative glazing (in- and outside 10 ⁸ Ohm/sq)
✓ Door & humidity alarm buzzer	Longer door openings are detected, high RH levels are detected
✓ Lockable doors	2 doors locked with key
✓ Shelves	In height adjustable ESD painted steel shelves (7 pcs)
✓ 2 series digital display	Very convenient settings of RH% and alarm functions. (3 color)
✓ Drying unit	U-2000 drying unit
✓ ESD bonding point	ESD wristband can be connected to the cabinet
✓ Rotronic sensor	Precision sensor, accuracy +/- 0,8 % RH, +/- 0,3°C
✓ Power supply	Power cord 5 meter with IEC plug

Benefits

✓ More stable RH and Temperature	Dynamic regeneration ensures a more stable climate
✓ Recovery time after door opening	<30 minutes to below 2% (by 1 door opening)
✓ Energy saving	Lower power consumption through dynamic regeneration
✓ Network	Standard ethernet interface
✓ IPC	According to IPC-JEDEC J-STD 033C & IPC-1601
✓ Sensor calibration	Yearly sensor calibration program for ISO standards
✓ Maintenance	The drying unit is maintenance free, easy to service

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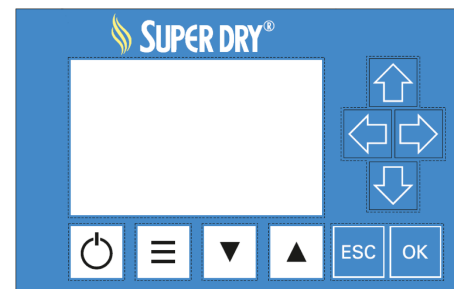
Technical data cabinet

✓ External dimensions:	(W x H x D) 500 x 1277 x 640 mm
✓ Internal dimensions:	(W x H x D) 490 x 1124 x 602(594) mm
✓ Weight:	68 kg
✓ Weight on shelf:	30 kg
✓ Max. loading capacity:	100 kg
✓ Body:	Steel, conductive coated $10^8 \Omega/\text{sq}$
✓ Shelves (WxD):	4 pcs long, 468 x 510 mm adjustable. 3 pcs short, 468 x 468 mm adjustable.
✓ Volume:	320 L
✓ Electric supply:	230 VAC (120 VAC optional)
✓ Power consumption:	Average 35 W/h (excl. heating)
✓ Protection class:	Class 1, hard grounded
✓ Humidity level cabinet:	$\leq 1\%$ RH depending on amount of door openings
✓ Sensor accuracy:	$\pm 0,8\%$ RH, $\pm 0,3^\circ\text{C}$

Technical data type 2 display

Settings

- ✓ Language Menu
- ✓ Nominal Value Humidity
- ✓ Nominal Value Humidity Alarm
- ✓ Delay Humidity Alarm (in combination with heater)
- ✓ Nominal Value Temperature (in combination with heater)
- ✓ Temperature Alarm (in combination with heater)
- ✓ Delay Temperature Alarm
- ✓ Doors Alarm
- ✓ Interlocking
- ✓ Manual Regeneration



Display

- ✓ Supply voltage (supplied by drying unit) 24 VAC/DC
- ✓ Input 4 function keys (tactile-touch keys)
- ✓ Display 61 x 33 mm, white, controllable backlight, adjustable contrast
- ✓ Ethernet connection
- ✓ Power consumption at 24 VDC, 40 mA

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Technical data Rotronic sensor HC2A-s



Based on the Airchip 3000 Technology use the HygroClip 2 probes can be used for control of temperature and humidity.

The HygroClip 2 probes can be configured with the ROTRONIC HW4 software and share the following features:

- ✓ Measurement of relative humidity and temperature
- ✓ Programmable automatic sensor test with failsafe mode and sensor drift compensation.

Technical data dry-unit U-2000 series

- ✓ Control: Adjustable with control panel type 2
- ✓ Dehumidifying Temperature: 10 – 40° C
- ✓ Electric supply: 230 VAC (120 VAC optional)
- ✓ Dimensions (L x B x H): 260 x 380 x 100 mm
- ✓ Weight: 8,1 kg

Technical data heater SH 230-1

- ✓ Voltage: 230 VAC / 50 Hz (120 VAC / 60 Hz optional)
- ✓ Power: 530 W
- ✓ Temperature sensor: PTC 100
- ✓ Thermal protection: 90 °C
- ✓ Temperature range: 30 - 40 °C
- ✓ Air flow: 86 m³/h
- ✓ Display tolerance: 1 digit at 25 °C

Technical data N² (Auto) Flow

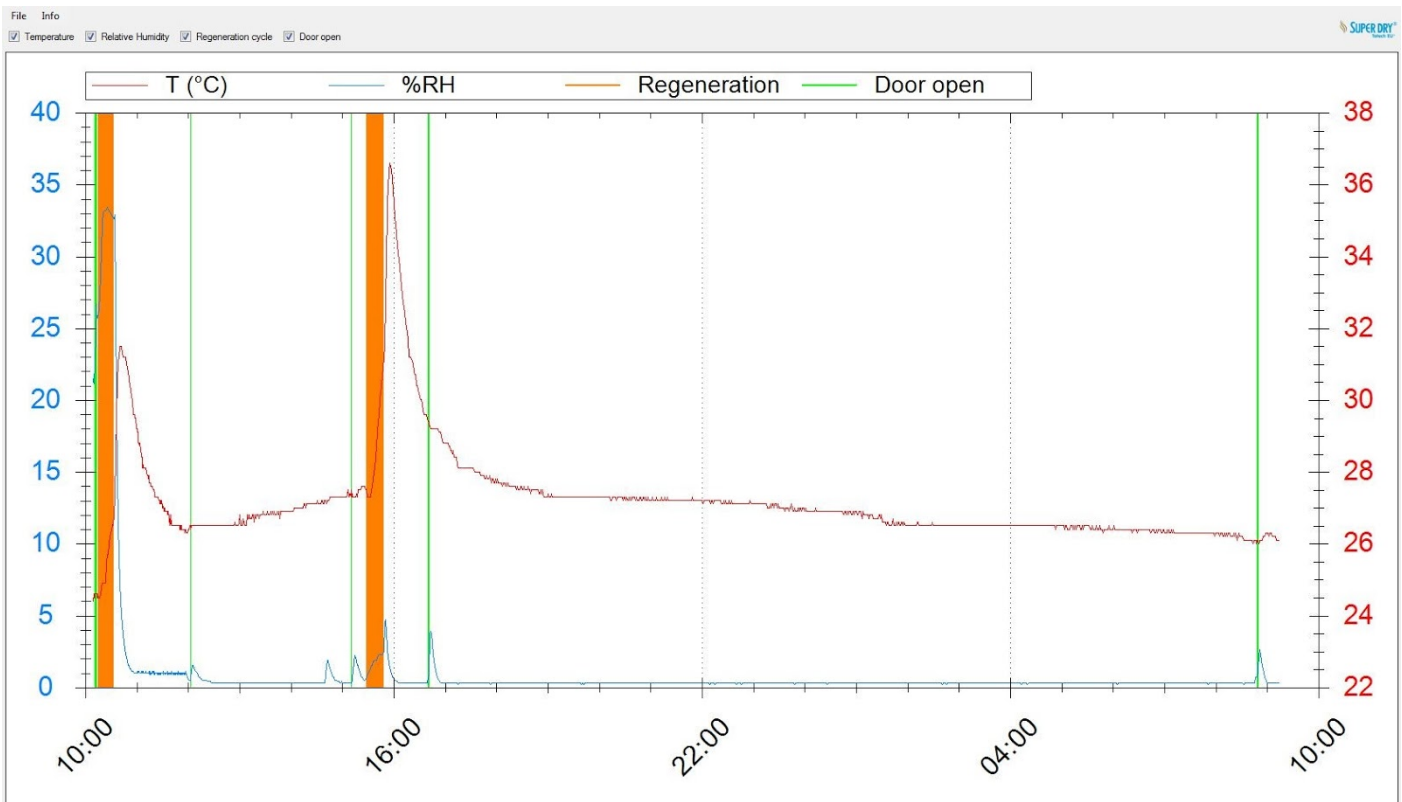
- ✓ Power supply: 90 - 230 VAC
- ✓ N² connection: 8mm hose connection
- ✓ N² pressure: 1 - 6 bar
- ✓ N² standby amount: 0 - 25 L/min
- ✓ N² purge: 0 - 25 L/min
- ✓ Purge time: 0 - 99 min

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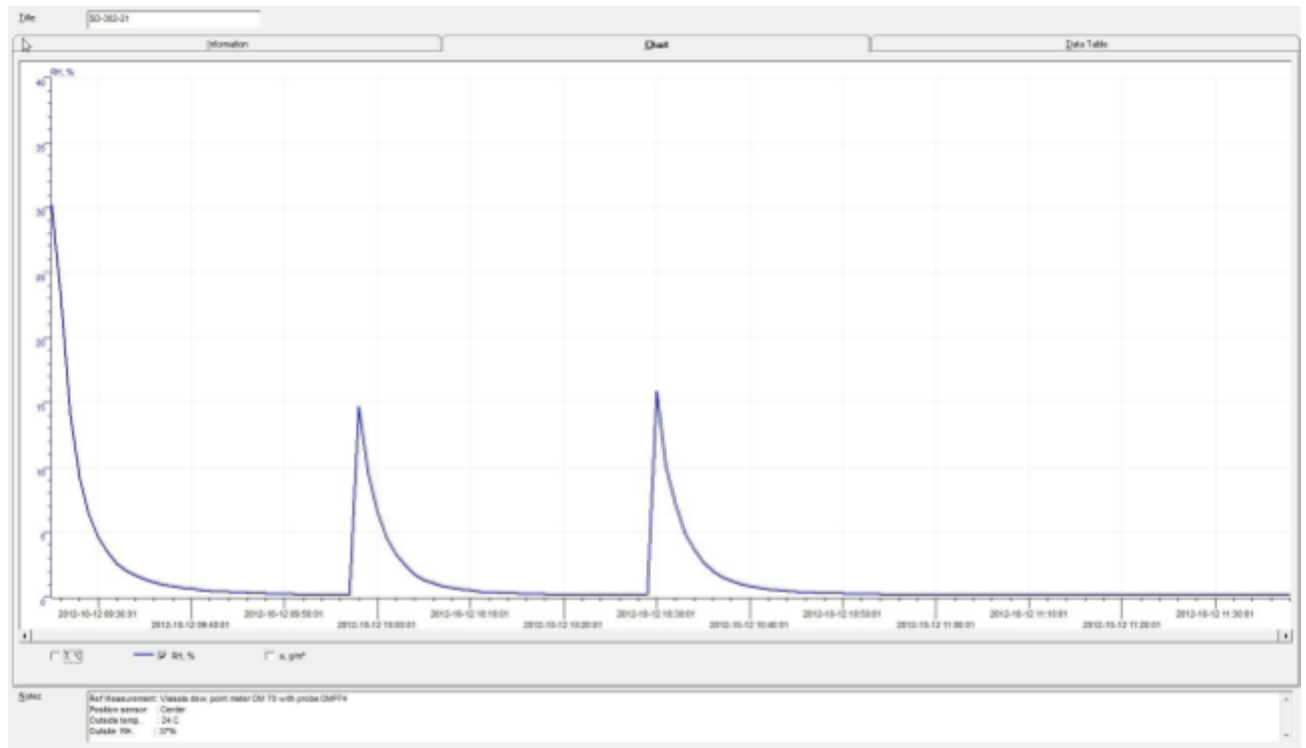
Free Totech viewer

- ✓ Writing of climate data, door openings and alarms to SD card
- ✓ Transfer data through Ethernet to PC (history data)
- ✓ User-friendly display of all relevant data
- ✓ Data processing in MS-Excel

- ✓ Seamless documentation
- ✓ Excellent process safety



Performance test

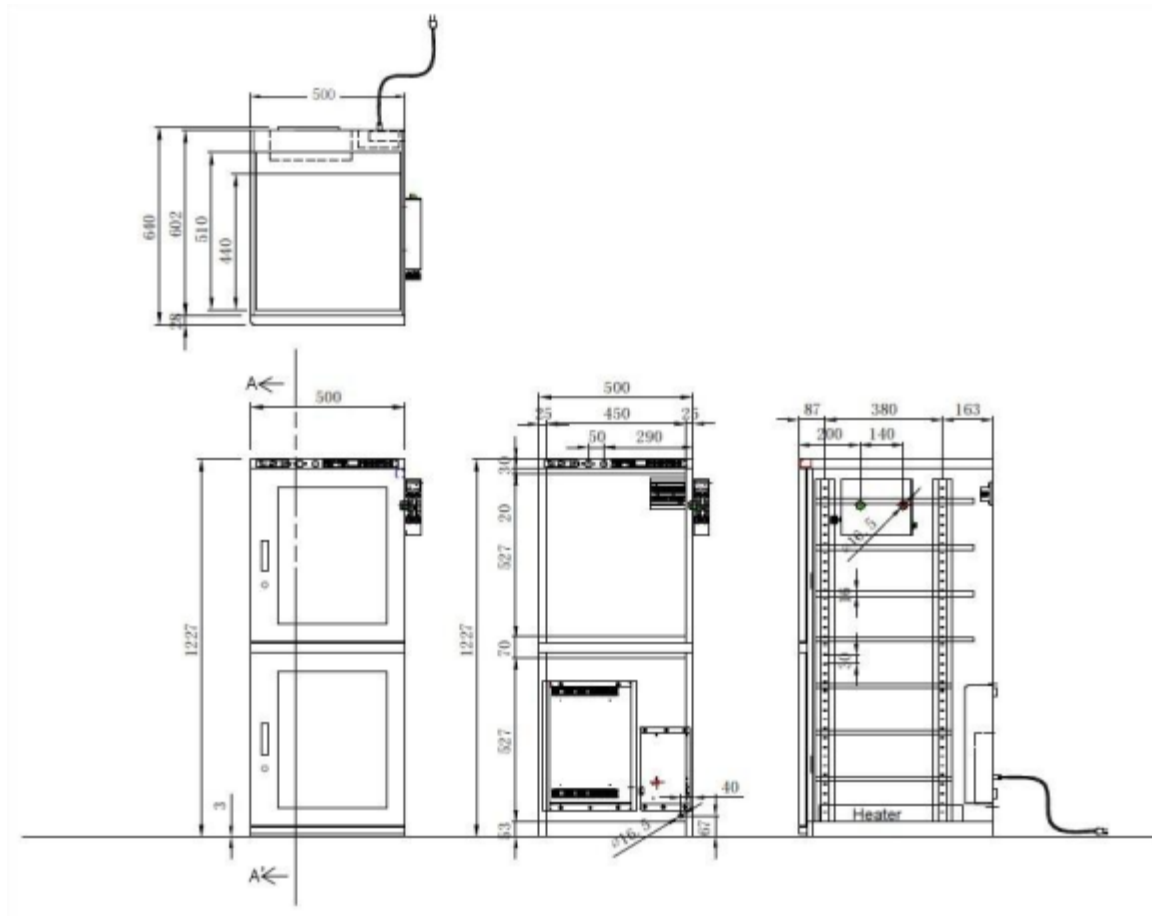


Test conditions

- ✓ Instrument: Vaisala drycap 180M
- ✓ Accuracy of dew point sensor: $\pm 0,2^{\circ} \text{C}$ at $+ 20^{\circ} \text{C}$ ($+ 68^{\circ} \text{F}$)
- ✓ Location of sensor: In the direct surroundings of cabinet sensor
- ✓ Ambient conditions: Hum. $50 \pm 5\% \text{ rH}$, $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Pressure $994 \pm 20 \text{ hPa}$
- ✓ Dooropenings: 2 door openings, 15 sec.

For more detailed test results, please refer to our website.

Technical drawings



Dimensions mentioned in mm.

Shelves

Number of different types of shelves that can be mounted in the cabinet

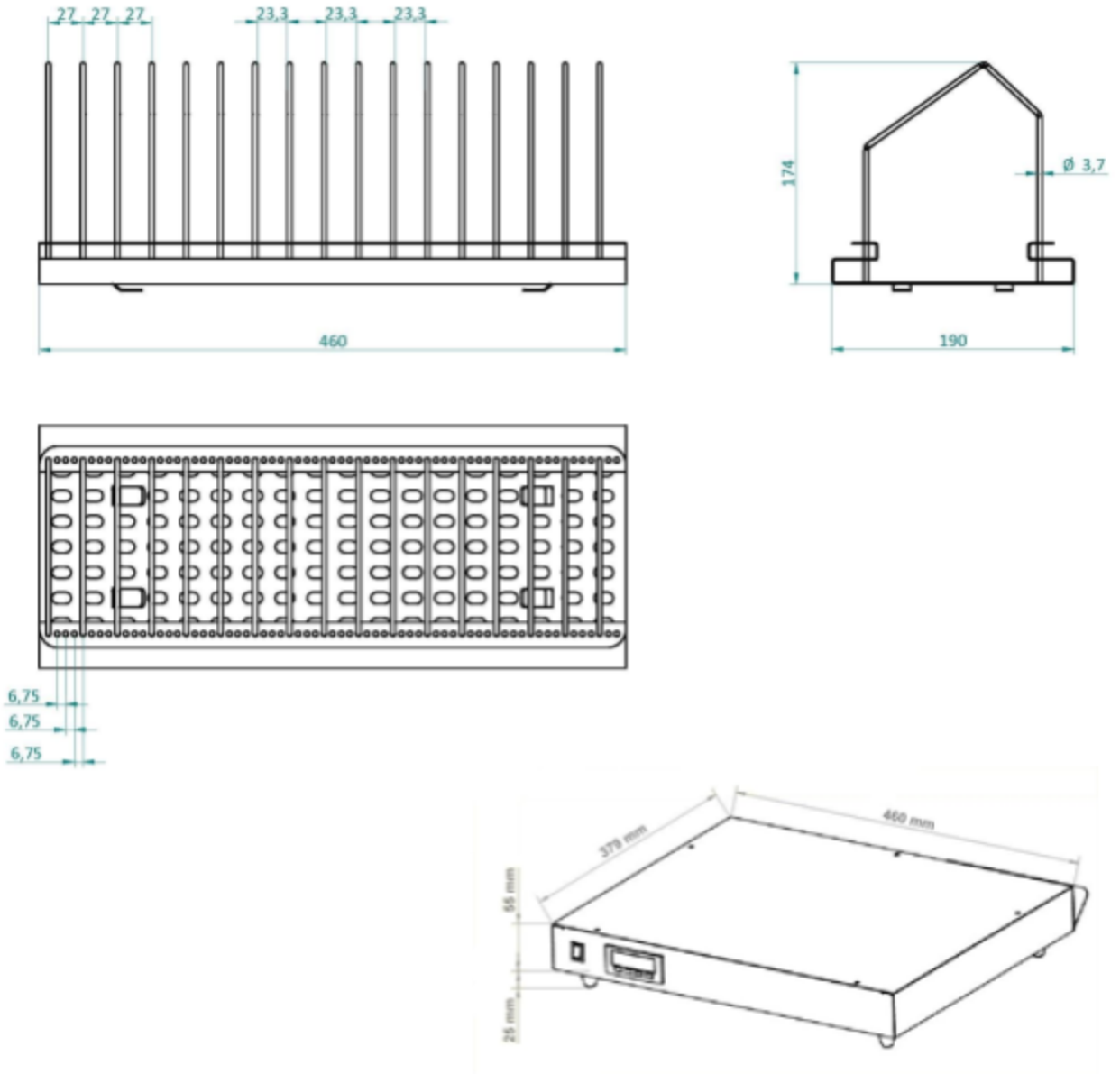
Number of shelves bottom section	1	2	3	
Distance (in mm) between shelves if equally divided in bottom section	x	165	103	x
Remaining space between top shelf and middle beam	295	155	120	x
Remaining space between bottom shelf and bottom cabinet	265	175	145	x
Loading capacity shelves m ² (1155 mm x 780 mm)	0,22	0,44	0,66	x

Number of shelves top section	1	2	3	4
Distance (in mm) between shelves if equally divided (if bottom shelf is mounted at lowest possible position in top section)	x	250	160	125
Remaining space between top shelf and top beam	495	245	160	105
Remaining space between bottom shelf and middle beam	0	0	0	0
Loading capacity shelves m ² (1155 mm x 780 mm)	0,24	0,48	0,71	0,95

Measurements can slightly deviate.

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Technical drawings



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Options



SMD Reel rack with reel supports
460 mm length.

Item number 20014000



Reel support
Additional reel supports for 20014000.

Item number 20014200



Humidity alarm signal lamp
Two-color (orange/green or red/green), magnetically fixed, providing optical signals on operational states and exceeded limit values. Operates on 24V.

Item number 20016030



N² Autoflow system
The autoflow system is developed to use in combination with a Totech drying cabinet. The device is used for the quick removal of moisture in the cabinet after the doors have been opened. The drying process is realised by using Nitrogen (N²), which is purged automatically after the doors are closed. (timer controlled)

Item number 22613001

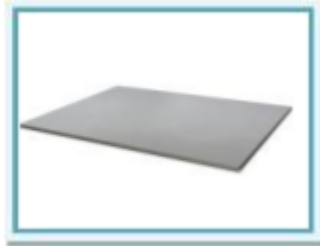


Heater SH 230-1
40°C heater

Item number 21001300

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Options



Shelf standard

For cabinets type SD 302

Item number 20015100



Hygroclip 2

Probe with maximum accuracy for all climate measurements.

Item number 47000027

Exchange calibrated sensor:
Item number 47000040



Humidity calibrator Hygropalm 22

Precision measuring device for calibrating sensors.

Set including Hygroclip sensor, case and cable:
Item number 20001019
Hygropalm only:
Item number 20001016



MSL 2.0 software for 1000 components

Software solution for the monitoring of moisture sensitive components and their MSL states during storage and processing in the production. The exact drying state individually for each component is monitored and displayed with the software. One of the possibilities is that it can read out multiple HC2A-S sensors. To adjust storage conditions, picking of stock, removal of used parts and more stock control. A complete history for each component is traceable up to the full processing. The evaluation of the drying conditions is based on the requirements of the IPC / JEDEC J-STD-033B1 directive.

Item number 20010036



MSL software upgrade with additional 1000 components

Upgrade to monitor an additional 1000 components

Item number 200174502

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Options



Totech Monitor software

Realtime cabinet monitoring with alarm function, sending e-mails with detailed information on the status of the cabinet. History data files with graphical overview

Item number 47000583