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BKT SM4DC Freeware

IT monitoring application

- manual

- version 0.14







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1 INTRODUCTION

1.1 General information

This is the manual for BKT SM4DC Freeware (System Manager for data Center) designed to monitor devices of IT infrastructure. It enables periodic querying of devices for selected parameters and reporting defined irregularities to the user. The software is designed to support devices manufactured by BKT Elektronik, but it can also support devices from other manufacturers. The program uses the SNMP protocol version 1 and 2c for communicating with devices.

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1.3 Basic program characteristics

This is a Windows based software, which allows:

- Monitoring the parameters of devices communicating with the SNMP protocol version 1 and 2c;
- Supporting for an unlimited number of devices. The only limitation is system performance (computer and network hardware);
- Reading an unlimited number of parameters from devices (voltage, temperature, humidity values, etc.);
- Creating device models with parameters for easy duplication in the system;
- Creating a tree structure of device location in the system, e.g. BuildingA-> Server room-> Cube1-> Cabinet01-> PDU1;
- An easy way to change the location of devices in the system tree structure by drag and drop;
- Easily move individual parameters in the tree structure of the system by drag and drop
- Reading numeric (voltage temperature, etc.) and text parameters (e.g. "normal", "battery operation", "failure" etc.)
- Reading device parameters with a defined interval from a minimum of 10 seconds;
- Saving the read values to the csv file database;
- Conversion of values of read numeric parameters according to the function f (x) = ax + b;
- Setting 4 alarm thresholds for each numerical parameter;
- Setting of alarm threshold hysteresis for each numerical parameter;
- Setting 2 alarm states for text parameters (eg UPS status "battery operation", "failure");
- Setting two categories of alarm thresholds: warning, failure;
- Displaying of current alarm states with a detailed description;
- Email notification of system alarms;
- Exporting alarm history to csv files for the selected period;
- Displaying on charts the value changes of any parameter over a selected period;
- Exporting the history of read parameter values to csv files from the selected period.

2 INSTALLING

2.1 Hardware and software requirements

The program is designed to work in the environment of Windows 10, 11, Windows Server 2016, 2019, 2022.

Computer requirements depend on the number of devices monitored. It is recommended to use minimum requirements only for up to several dozen monitored parameters.

	Minimal	Recommended
Computer	PC	PC
Operating system	Windows 10, 11; Windows Server 2016, 2019, 2022	Windows 11; Windows Server 2019, 2022
Processor	1 GHz	2,5 GHz Dual Core
RAM memory	8 GB	16 GB
Hard drive	64GB and additional for the database	512GB
Screen resolution	1920x1080	1920x1080
Network card	100Mbps	1Gbps
Platform	.NET 8	.NET 8

2.2 Installation process

Installation requires .NET 8 platform. The installer must have administrator rights in Windows. Run the program installer - file *BKT_SM4DC_Freeware_version_setup.exe*, then accept the license terms and continue the process according to the installer messages.



3 CONFIGURATION AND OPERATION

3.1 Opening / Closing / Saving the project

The project opens automatically when the program starts. At the first start, the program will find that the project file is missing and it will display the appropriate message. After accepting the intention to create a new project, the program will create a sm4dcproject.xml file in the *C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware* directory. The project file contains the settings entered in the Settings window (see section *3.7 Application settings*) and data of all monitored objects defined in the program. The project is saved automatically when the program is closed. It is also possible to save the project to a file earlier by saving the Settings -> Save.

3.2 Main menu

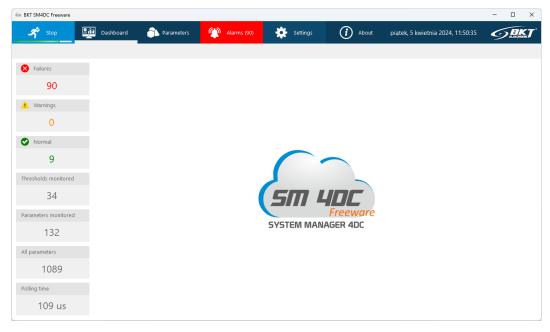
🗚 Run 🕎 Dashboard 🏊 Parameters 🏟 Alarms 🔅 Settings 🕡 About piatek, 5 kwietnia 2024	4, 11:34:06	7 *

Run/Stop	Starts / stops active polling of devices for defined parameters.
Dashboard	Opens a tab with current basic system statuses.
Parameters	Opens a tab on which monitored devices and their parameters are configured.
Alarms	Opens a tab that displays current and historical alarms.
Settings	Opens a window with program settings.
About	Opens a windows with program information.

3.3 Start and stop monitoring

🝂 Run	Monitoring is stopped. The program does not poll devices for current parameter values; does not write these values to the database.
📌 Stop	Monitoring is active. The program periodically polls all devices. The progress bar shows the time to the next polling.

3.4 Dashboard

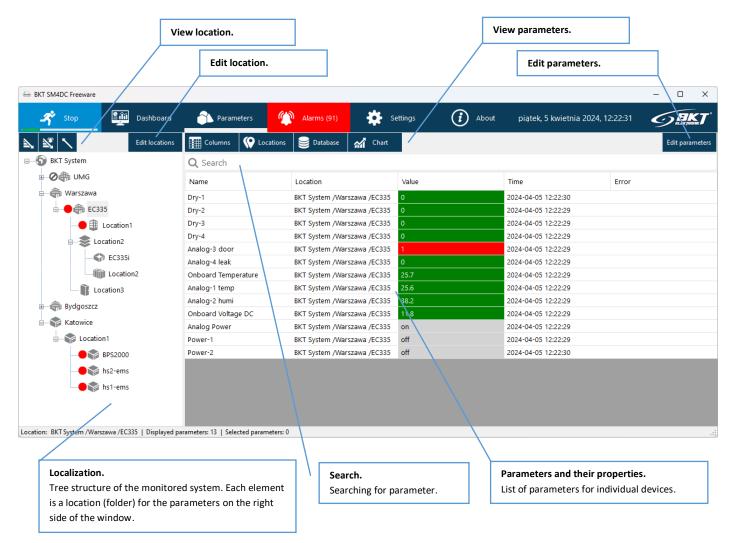




All objects	Displays the number of all device parameters defined in the program.
Failures	Displays the number of device parameters that are in a failure state - they have exceeded the defined failure alert thresholds.
Warnings	Displays the number of device parameters that are in the warning state - they have exceeded the defined warning alert thresholds.
Normal	Displays the number of device parameters that are in the normal state - have not exceeded the defined alarm thresholds.
Thresholds monitored	Displays the number of parameters that are read from devices and for which alarm thresholds have been defined and their monitoring has been enabled.
Parameters monitored	Displays the number of parameters that are read from devices.
All parameters	Displays the number of all device parameters defined in the program.
Polling duration	Displays the polling duration of all monitored parameters.

3.5 Parameters

The object is the device parameter. It can be temperature, humidity or any other parameter that the device can be polled for.





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3.5.1 View location

Location is where the device/parameter is located. The program allows you to create a structure of dependencies between individual devices. Managing locations is similar to managing folders in Windows. After creating the system tree and starting monitoring, measurement data from the parameters read from the devices will be saved on the computer disk in the C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware\Data directory. The directory structure on the computer's disk will be identical to the structure of the constructed location tree, which facilitates navigation and user access to all data stored on the disk.

A ,	Expand all locations. Expands the tree of all locations from the selected one.	Edit locations
×	Expand locations with alarms. Expands all locations where alarms are displayed.	
\sim	Collapse all locations. Collapses all locations under the selected one.	Location2 Location3 Bydgoszcz

3.5.2 Configure location

Edit locations	Show/hide edit buttons. Shows or hides the following buttons for editing locations.	
65	Add location. Adds a new location to the selected one.	BKT System BKT System BKT System Warszawa BKT System BKT System BKT System
6	Delete location. Deletes the selected location. ATTENTION Deleting a location will also delete the directory on disk with measurement data saved in that location.	Location1 Location2 Incation3 Bydgoszcz Katowice
Q ,	Edit location name. Allows changing the name for the selected location.	E Location1 ■ SPS2000 ■ SPS2-ems
R	Set location icon. Sets the image to the selected location.	hs1-ems
ŧ	Move location down. Moves the selected location down one position within the parent location.	
t	Move location up. Moves the selected location up one position within the parent location.	
(8	Activate/deactivate location. Enables or disables monitoring of parameters in the selected and all subordinate locations.	
	Moving locations. Locations can be moved by drag and drop.	



3.5.3 View parameters

	Columns 🛛 😧 Locati	ons 🥃 Database 🚮 Chart			Edit parameters	
	Q Search		-			
	Name	Location	Value	Time	Error	
	Dry-1	BKT System /Warszawa /EC335	0	2024-04-05 13:50:40		
	Dry-2	BKT System /Warszawa /EC335	0	2024-04-05 13:50:40		
	Dry-3	BKT System /Warszawa /EC335	0	2024-04-05 13:50:40		
	Dry-4	BKT System /Warszawa /EC335	0	2024-04-05 13:50:40		
	Analog-3 door	BKT System /Warszawa /EC335	1	2024-04-05 13:50:40		
	Analog-4 leak	BKT System /Warszawa /EC335	0	2024-04-05 13:50:40		
	Onboard Temperature	BKT System /Warszawa /EC335	25.7	2024-04-05 13:50:40		
	Analog-1 temp	BKT System /Warszawa /EC335	25.5	2024-04-05 13:50:40		
	Analog-2 humi	BKT System /Warszawa /EC335	38.2	2024-04-05 13:50:40		
• Locations		ers from sub-location		ad location and all suble	antions	
Cocations	Displays in a lis	t the parameters fron		ed location and all sublo	ocations.	
LocationsDatabase	Displays in a lis Show database Opens an explo	t the parameters fron 2.	n the selecto		ocations. ere *.csv files with data a	re located.
···	Displays in a lis Show database Opens an explo	t the parameters fron e. prer window with the	n the selecto			re located.
Database	 Displays in a lis Show database Opens an explo More in the ch Show charts. 	t the parameters from 2. orer window with the apter 3.8 Database.	n the selecto			re located.
···	 Displays in a lis Show database Opens an explo More in the ch Show charts. Opens a windo 	t the parameters from e. prer window with the apter <i>3.8 Database.</i> w with charts.	n the selecto			re located.
Database	 Displays in a lis Show database Opens an explo More in the ch Show charts. Opens a windo 	t the parameters from 2. orer window with the apter 3.8 Database.	n the selecto			re located.
Database	 Displays in a lis Show database Opens an explo More in the ch Show charts. Opens a windo More in the ch 	t the parameters from 2. orer window with the apter <i>3.8 Database.</i> w with charts. apter <i>3.5.4 View value</i>	n the selecto			re located.
Database	 Displays in a lis Show database Opens an explo More in the ch Show charts. Opens a windo More in the ch Sorting parameters 	t the parameters from 2. prer window with the apter <i>3.8 Database.</i> w with charts. apter <i>3.5.4 View value</i> eters.	n the selecto folder of the es in charts.	e selected location, whe	ere *.csv files with data a	
Database	 Displays in a lis Show database Opens an explo More in the ch Show charts. Opens a windo More in the ch Sorting parameters 	t the parameters from 2. prer window with the apter <i>3.8 Database.</i> w with charts. apter <i>3.5.4 View value</i> eters.	n the selecto folder of the es in charts.	e selected location, whe		

3.5.4 View values in charts

Columns 🔇 Loca	ations 📄 Database 🚮 Char			Edit parameters	View charts
Q Search					It is possible to display a single or a group of parameters on the short
Name	Location	Value	Time	Error	It is possible to display a single or a group of parameters on the chart.
Dry-1	BKT System /Warszawa /EC33	5 0	2024-04-08 12:58:22		Select one or use the CTRL or SHIFT keys to select a group of
Dry-2	BKT System /Warszawa /EC33		2024-04-08 12:58:22		select one of use the entre of shift keys to select a group of
Dry-3	BKT System /Warszawa /EC33		2024-04-08 12:58:22		parameters in the list that are to be displayed on the chart.
Dry-4	BKT System /Warszawa /EC33	5 0	2024-04-08 12:58:22		
Analog-3 door	BKT System /Warszawa /EC33	5 1	2024-04-08 12:58:23		Then click the <i>Chart</i> button.
Analog-4 leak	BKT System /Warszawa /EC33	5 0	2024-04-08 12:58:23		
Onboard Temperature	BKT System /Warszawa /EC33	5 26.3	2024-04-08 12:58:22		
Analog-1 temp	BKT System /Warszawa /EC33		2024-04-08 12:58:23		
Analog-2 humi	BKT System /Warszawa /EC33		2024-04-08 12:58:23		
Onboard Voltage DC	BKT System /Warszawa /EC33		2024-04-08 12:58:22		
Analog Power	BKT System /Warszawa /EC33		2024-04-08 12:58:22		
Power-1 Power-2	BKT System /Warszawa /EC33 BKT System /Warszawa /EC33		2024-04-08 12:58:23 2024-04-08 12:58:22		
		Use your	mouse scroll whee	el to zoom in or	out on the charts.
			he chart and move	your mouse to	move the enlarged chart.
		Select an Use left A	•	area on the grap	oh that you want to enlarge.
s s	HIFI	•	out on the value a I to change the sco		axis only.
¢	IRL		out on the timelin to change the scop		ne only.



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3.5.5 Parameter search

Columns 🜔 Cocations	Database 🖌 🚮 Chart			Edit parameters
Q temperature				
Name	Location	Value	Time	Error
Onboard Temperature	BKT System /UMG /Hala sportowa /LPD-HS1 /EMS			
Onboard Temperature	BKT System /UMG /Hala sportowa /LPD-HS2 /EMS			
Onboard Temperature	BKT System /Warszawa /EC335	25.8	2024-04-05 14:02:10	
Temperature	BKT System /Katowice /Location1 /BPS2000	°C		Parameter is offline.
Temperature 1	BKT System /Katowice /Location1 /BPS2000	°C		Parameter is offline.
Temperature 2	BKT System /Katowice /Location1 /BPS2000	°C		Parameter is offline.
Onboard Temperature	BKT System /Katowice /Location1 /hs2-ems			Parameter is offline.
Onboard Temperature	BKT System /Katowice /Location1 /hs1-ems			Parameter is offline.

It is possible to search for the desired parameter from the group currently displayed in the right window.

The search result will display parameters that contain the string of characters entered in the search field:

- name of the object or
- the full path of the object's location or
- name of the device assigned to the object or
- IP address

Letter case does not matter when searching.

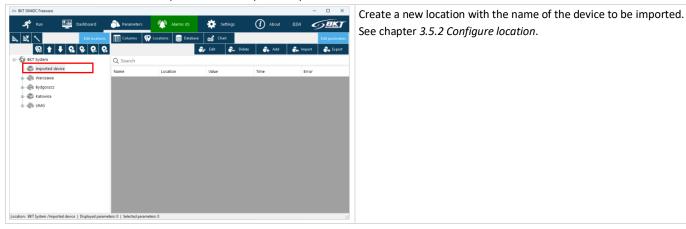


3.5.6 Configure parameters

	Columns 🔇 Lo	ocations 🥃 Database 🚮	Chart			Edit parameters		
		🌮 Ed	it 🔶 Delete	🔂 Add	🗞 Import	🚑 Export		
	Q Search							
	Name	Value	Time		Error			
	Dry-1		2024-04-08 14:	00:13				
	Dry-2		2024-04-08 14:	00:13				
	Dry-3		2024-04-08 14:	00:13				
	Dry-4		2024-04-08 14:	00:13				
dit parameters	Show/hide edit Shows or hides	t buttons. the following buttons fo	or editing paramet	ers.				
장 Edit		ing window for one or m 5.9 Editing parameters.	ore selected para	neters.				
🕨 Delete	Remove parameter. Deletes one or more selected parameters. See chapter 3.5.10 Deleting parameters.							
🔂 Add	Add a paramet Adds one parar See chapter 3.5		neter					
🗞 Import		eters from any device su 5.7 Import device.	pporting the SNM	P protocol.				
		See chapter 3.5.7 Import device. Export device. From the selected parameters, it creates a device model that can be used when importing devices. See chapter 3.5.11 Exporting - creating a device model.						

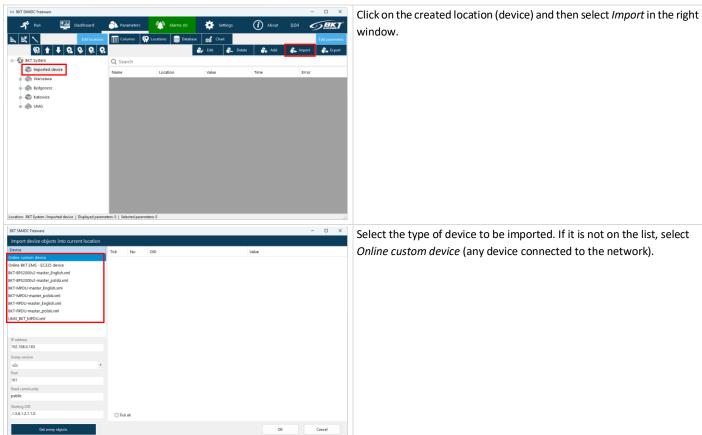
3.5.7 Import device

The program allows you to add many device parameters at the same time. It is possible to add parameters from any type of device supporting the SNMP version 1 or version 2c protocol or from previously defined devices.









Select the type of device to be imported. If it is not on the list, select Online custom device (any device connected to the network).

۸ddi

BKT SM4DC Freeware			- 0 ×	Select Online custom device. Enter basic connection settings
Import device objects into current locatio	on			C C
Device	Tick N	o OID	Value	according to your device configuration:
mine custom device mine BKT EMS - EC335 device				
KT-BPS2000v2-master_English.xml				- SNMP protocol version 1 or 2c
KT-BPS2000v2-master_polski.xml				ID address of the device
IKT-MPDU-master_English.xml				- IP address of the device
IKT-MPDU-master_polski.xml				
KT-RPDU-master_English.xml				- communication port
IKT-RPDU-master_polski.xml JMG_BKT_MPDU.xml				- Read community, i.e. access password
MO_DK1_WPDO.011				- Read community, i.e. access password
	-			- OID, i.e. the identifier of the SNMP object from which the progra
IP address 192.168.0.163				one, net the identifier of the sixtual object from which the progra
	-			to start reading the device using the Get Next command of the SN
Snmp version				to start reading the device using the det text command of the st
v2c Port				protocol.
161				•
Read community				The default values for these parameters are already entered, but
public				
Starting OID				vary depending on the device. Check your device's user manual.
.1.3.6.1.2.1.1.0				
	Tick all			
	🗌 Tick all			Click Get snmp objects to start the process of reading parameters
Get snmp objects	Tick all		OK Cancel	Click <i>Get snmp objects</i> to start the process of reading parameters
	Tick all		OK Cancel	Click Get snmp objects to start the process of reading parameters from the device. Select the objects to be added or select all. Confi
Get snmp objects BKT SM4DC Freeware]			from the device. Select the objects to be added or select all. Confi
Get snmp objects	on		- o ×	from the device. Select the objects to be added or select all. Conf by clicking OK.
Get somp objects BKT SM4DC Freeware Import device objects into current locatic]		- D X Value	from the device. Select the objects to be added or select all. Conf by clicking OK.
Get somp objects BICT SMOC Freeware Import device objects into current location Device Device Device outcom device notice bICT BAS - EC335 device	on	00 136121110 136121120	- o ×	from the device. Select the objects to be added or select all. Confi by clicking OK. Then edit individual parameters, giving them appropriate names a
Get somp objects BKT SMADC Freesure Import device objects into current locatio Device Device Some part BAG - EC335 device KT 64920002; master_Englishum]	on Tick N4	1.3.6.1.2.1.1.1.0	- C X Value art Elektronik Montoring System	from the device. Select the objects to be added or select all. Conf by clicking OK.
Get somp objects EKT SMDC Freewer Import device objects into current locatio Device Device Device Device State sustan device AKT 4952000-4-master_polisiuml KT 4952000-4-master_polisiuml	on Tick N4 C 1 C 2	1.3.6.1.2.1.1.1.0 1.3.6.1.2.1.1.2.0	- D X Value BCC Distronk Kontoring System 1.3.6.1.4.147394	from the device. Select the objects to be added or select all. Confiby clicking OK. Then edit individual parameters, giving them appropriate names a if necessary, set alarm thresholds. See chapter <i>3.5.6 Configure</i>
Get uning objects INT SMADC Freesare import device objects into current locatio Device Device Device RFT MA - EC33 device RCT 4952000-2; master_polisium! RCT 4952000-2; master_polisium!	DN Tick Nu 2 2 3 4 4 2 5	1.3.6.1.2.1.1.1.0 1.3.6.1.2.1.1.2.0 1.3.6.1.2.1.1.3.0	- - X Value EXT Elitôpeak Musetering System 1.3.6.14.147394 10d 3h 4m 20: 270s	from the device. Select the objects to be added or select all. Conf by clicking OK. Then edit individual parameters, giving them appropriate names a
Get somp objects INT SMADC Freesare Import device objects into current location Denice Denice Inter Sectors (2003) INT MPDU master_polisiumal INT MPDU master_polisiumal INT MPDU master_polisiumal INT MPDU master_polisiumal	Drn Tick NV 2 1 2 2 3 3 4 4 5 2 6	13.6.1.2.1.1.0 1.3.6.1.2.1.1.2.0 1.3.6.1.2.1.1.2.0 1.3.6.1.2.1.1.4.0 1.3.6.1.2.1.1.5.0 1.3.6.1.2.1.1.5.0	Value EICT Elektronik Monitoring System 1.36.1.4.1.4794 19d Jih Min 2015 270ms 1007320115.2404687	from the device. Select the objects to be added or select all. Confiby clicking OK. Then edit individual parameters, giving them appropriate names a if necessary, set alarm thresholds. See chapter <i>3.5.6 Configure</i>
Cet unig skjects IRT SMOD Freesee Import device objects into current locatio Device Device Device Office CS33 device RCF 98-2000-master_polytikuml RCF MPDU master_polytikuml RCF MPDU master_polytikuml RCF MPDU master_polytikuml	DON Tick NU 2 2 2 3 3 4 4 5 5 5 6 7 7	13.6.12.11.10 13.6.12.11.2.0 13.6.12.11.3.0 13.6.12.11.4.0 13.6.12.11.5.0 13.6.12.11.6.0 13.6.12.11.6.0	- - X Value Int Clubrook Montoring System 1.8.1.4.14794 164 3h 4m 30:27045 169/37915.240067 hodmane Unkloom of dh on the 110ms	from the device. Select the objects to be added or select all. Confi by clicking OK. Then edit individual parameters, giving them appropriate names a if necessary, set alarm thresholds. See chapter <i>3.5.6 Configure</i>
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Adding EC335 device parameters

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Parameters may require further configuration. See chapter 1.1 Addig Power 1.2 Power 1.2 Power 1.3 At At AT79443.1.730000 of 1.3 Power 1.3 At At At 79443.1.730000 of 1.3 Power 1.3 Power 1.3 At At At 79443.1.730000 of 1.3 Power 1.3 Po	Device Online extom device Online EVE 2006 - EC333 device EXCEPE2000-2-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-RPOU-master_polisiuml	1 2 3 4 5 6 7 8	Dry-2 Dry-2 Dry-4 Analog-3 door Analog-4 leak Onboard Temperature Analog-1 temp	1.3.6.1.4.1.47394.5.11,7.101001 1.3.6.1.4.1.47394.5.11,7.101002 1.3.6.1.4.1.47394.5.11,7.101003 1.3.6.1.4.1.47394.5.11,7.101004 1.3.6.1.4.1.47394.5.11,7.101004 1.3.6.1.4.1.47394.5.11,7.101001 1.3.6.1.4.1.47394.5.2.1,7.201001 1.3.6.1.4.1.47394.5.2.1,7.201002	0 0 0 1 0 266 266	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm
12 Power-1 13.61.41.47943.3.17304001 off 9.189.33.4 13 Power-2 13.61.41.47943.3.17304002 off 9.189.33.4 Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Value Image states Image states Image states Image states Image states Value Image states	Device Online extom device Online EVE 2006 - EC333 device EXCEPE2000-2-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-RPOU-master_polisiuml	1 2 3 4 5 6 7 8 9	Dry-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Orboard Temperature Analog-1 temp Analog-2 humi	13.6.1.4.147394.5.1.1.7.101001 13.6.1.4.147394.5.1.1.7.101002 13.8.1.4.147394.5.1.1.7.101003 13.8.1.4.147394.5.1.1.7.101004 13.8.1.4.147394.5.1.1.7.102001 13.6.1.4.147394.5.1.1.7.102001 13.6.1.4.147394.5.1.7.201001 13.6.1.4.147394.5.1.7.201001 13.6.1.4.147394.5.1.7.201001	0 0 0 1 266 286 39.7	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm
# addem: 91.198.20.4 Geng variant	Device Online extom device Online EVE 2006 - EC333 device EXCEPE2000-2-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-RPOU-master_polisiuml	1 2 3 4 5 6 7 8 9 10	ory-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Ooboard Temperature Analog-1 temp Analog-2 temp Ooboard Volkage DC	13.6.1.4.147394.5.1.7.101001 13.8.1.4.147394.5.1.7.101002 13.6.1.4.147394.5.1.7.101003 13.6.1.4.147394.5.1.7.101003 13.6.1.4.147394.5.1.7.101001 13.6.1.4.147394.5.1.7.101001 13.6.1.4.147394.5.2.1.7.201001 13.6.1.4.147394.5.2.1.7.201002 13.6.1.4.147394.5.2.1.7.201001 13.6.1.4.147394.5.2.1.7.201001	0 0 0 1 286 286 286 387 11.0	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK.
91.109.044 (D. SanUL, resource A Composedim (D. SanUL, resource A Idz Objech har been read. Automount (D. SanUL, resource A Bis (D. SanUL, resource A)	Device Online extom device Online EVE 2006 - EC333 device EXCEPE2000-2-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-MPOU-master_polisiuml BKT-RPOU-master_polisiuml	1 2 3 4 5 6 7 8 9 10 11	ory-1 Ory-2 Dry-3 Dry-4 Analog-4 fakt Oreboard Temperature Analog-2 turni Oreboard Voltage DC Analog Power	13.6.1.4.174794.5.11.7.101001 13.8.1.4.174794.5.11.7.101002 13.8.1.4.174794.5.11.7.101002 13.8.1.4.174794.5.11.7.101004 13.8.1.4.17494.5.11.7.102001 13.8.1.4.17494.5.11.7.102001 13.8.1.4.17494.5.1.7.201001 13.8.1.4.17494.5.1.7.201001 13.8.1.4.17494.5.1.7.202001 13.8.1.4.17494.5.1.7.202001 13.8.1.4.17494.5.1.7.202001	0 0 0 1 2860 2865 2867 387 11.0 0	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK.
Stang variant Digital have been raad. latz • Part • Tot • Basic commonly public •	Denics Conten custom device Conten Ext RANG = CG135 device URCT#PS20002-resulter_polisikumi BICT-MPDU-master_polisikumi BICT-MPDU-master_polisikumi BICT-RPDU-master_polisikumi BICT-RPDU-master_polisikumi UMG_BICT_MPDU.avel	 1 2 3 4 5 6 7 8 9 10 11 12 	ory-1 Dry-2 Dry-3 Dry-4 Analog-4 leak Croboard Temperature Analog-1 temp Analog-1 temp Onboard Voltage DC Analog Power Power-1	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.202000 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
International product of the set of th	Delice Chille cutom device Online EuT 24/0-14/23 device EuT-04920002-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi	 1 2 3 4 5 6 7 8 9 10 11 12 	Gry-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Onboard Temperature Analog-1 lemp Analog-2 humi Onboard Voltage DC Analog Power Power-1 Power-1	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.202000 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
Ard α 161 α Rad community D Tak at	Delice Chille cutom device Online EuT 24/0-14/23 device EuT-04920002-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi EuT-04900-mastler_politikumi	 1 2 3 4 5 6 7 8 9 10 11 12 	Gry-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Onboard Temperature Analog-1 lemp Analog-2 humi Onboard Voltage DC Analog Power Power-1 Power-1	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.202000 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
161 Cx foot commoly public Tote at	Dexice Chille cutom device Colleg Life 24/6 - 5(2) 5 device Bir (7-BP2000)-Amatter_Englishum! Bir (7-BPU)-master_polisium! Bir (7-BPU)-master_polisium! Bir (7-BPU)-master_polisium! Bir (7-BPU)-master_polisium! Bir (7-BPU)-master_polisium! DMG_BIR_MPULum!	 1 2 3 4 5 6 7 8 9 10 11 12 	Gyr-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Ochoard Tenperature Analog-2 humi Ochoard Youtga DC Analog Power Dower-1 Power-1 Power-2	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.202000 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
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public Trok at	Desics Content	 1 2 3 4 5 6 7 8 9 10 11 12 	Gyr-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Onboard Temperature Analog-2 humi Onboard Temperature Analog-2 humi Obloard Volkge DC Analog Power Power-1 Power-1 Power-2 RCT SMMDC Freeware X Objects have been read.	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.202000 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
	Delice Coller coll Coller (LT 4A0-1-CL)35 device (LT 4F82000-24 master_polisikum) LT 4F82000-24 master_polisikum) LT 4F82000-24 master_polisikum) LT 4F900-master_polisikum LT 4F900-m	 1 2 3 4 5 6 7 8 9 10 11 12 	Gyr-1 Dry-2 Dry-3 Dry-4 Analog-3 door Analog-4 leak Onboard Temperature Analog-2 humi Onboard Temperature Analog-2 humi Obloard Volkge DC Analog Power Power-1 Power-1 Power-2 RCT SMMDC Freeware X Objects have been read.	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
Sep OK Cred	Denics Online and notics Online and notics Online and notics Distribution BICT-BP20000-restler_plotklumi BICT-BP20000-restler_plotklumi BICT-BP20000-restler_plotklumi BICT-BP20000-restler_plotklumi BICT-BP20000-restler_plotklumi BICT-BP20-masker_plotklumi BICT-BP2	2 3 4 5 6 7 8 9 10 10 11 12 13	Day-1 Day-2 Day-3 Day-4 Analog-3 door Analog-4 feak Orboard Temperature Analog-2 turni Conboard Vallage DC Analog Power Power-1 Power-2 Krt SMADC Freeware Objects hare been read. Coin	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 266 387 11.8 0 0 1	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
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	Delice Chille cut RAG - CC35 device Unit Part RAG - CC35 device Part - RAG - R	2 3 4 5 6 7 8 9 10 10 11 12 13	Day-1 Day-2 Day-3 Day-4 Analog-3 door Analog-4 feak Orboard Temperature Analog-2 turni Conboard Vallage DC Analog Power Power-1 Power-2 Krt SMADC Freeware Objects hare been read. Coin	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 397 11.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter
	Delice Chille cut RAG - CC35 device Unit Part RAG - CC35 device Part - RAG - R	2 3 4 5 6 7 8 9 10 10 11 12 13	Day-1 Day-2 Day-3 Day-4 Analog-3 door Analog-4 feak Orboard Temperature Analog-2 turni Conboard Vallage DC Analog Power Power-1 Power-2 Krt SMADC Freeware Objects hare been read. Coin	13.6.1.4.147394.5.11.7.101001 13.8.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101002 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101004 13.6.1.4.147394.5.11.7.101001 13.6.1.4.147394.5.2.17.201001 13.6.1.4.147394.5.2.17.201002 13.6.1.4.147394.5.2.17.202001 13.6.1.4.147394.5.2.17.2020000 13.6.14.147394.5.2.17.2020000000000000000000000000000000	0 0 0 1 266 397 11.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Click <i>Get snmp objects</i> to start the process of reading parameters from the device. Select the objects to be added or select all. Confirm by clicking OK. Parameters may require further configuration. See chapter

Adding parameters from defined device models.

nport device objects into current loca	tion			- 0	The files of the defined device models are located in the
evice					C) Drager m Data DKT Flatter with DKT SMADC Frager and Library
ine custom device	Tick	No	Name	OID	C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware\Library
ine EKT EMS - EC335 device		1	sysDescr	1.3.6.1.2.1.1.1.0	
BPS2000v2-master_English.xml		2	sysObjectID	1.3.6.1.2.1.1.2.0	directory
PS2000v2-master polskixml		3	sysUpTime	1.3.6.1.2.1.1.3.0	
APDU-master_English.xml		4	sysContact	1.3.6.1.2.1.1.4.0	Select the model of the device to be added to the system. Enter
IPDU-master_polski.xml		5	sysName	1.3.6.1.2.1.1.5.0	
PDU-master_English.xml		6	sysLocation	1.3.6.1.2.1.1.6.0	device's IP address if it is different from the factory one. Select t
PDU-master polski.xml		7	Device name	1.3.6.1.4.1.47394.1.1.1.0	
BKT_MPDU.xml		8	L1 current	1.3.6.1.4.1.47394.1.2.1.0	objects to be added or select all. Confirm by clicking OK.
		9	L1 voltage	1.3.6.1.4.1.47394.1.2.2.0	objects to be added of select all. commin by clicking ok.
	•	10	L1 active power	1.3.6.1.4.1.47394.1.2.3.0	
		11	L1 reactive power	1.3.6.1.4.1.47394.1.2.4.0	
		12	L1 apparent power	1.3.6.1.4.1.47394.1.2.5.0	
		13	L1 frequency	1.3.6.1.4.1.47394.1.2.6.0	Parameters may require further configuration. See chapter
	•	14	L1 active energy	1.3.6.1.4.1.47394.1.2.7.0	
		15	L1 apparent energy	1.3.6.1.4.1.47394.1.2.8.0	3.5.6 Configure parameters.
		16	L1 power factor	1.3.6.1.4.1.47394.1.2.9.0	
		17	L2 current	1.3.6.1.4.1.47394.1.2.10.0	
		18	L2 voltage	1.3.6.1.4.1.47394.1.2.11.0	
		19	L2 active power	1.3.6.1.4.1.47394.1.2.12.0	
fdress	_	20	L2 reactive power	1.3.6.1.4.1.47394.1.2.13.0	
168.0.163	🕑 Ti	ck all			
ce model file: rogramData\BKT Elektronik\BKT SM4DC F	reeware\Library\/	BKT-BPS20	00v2-master_English.xml	OK Cancel	



3.5.8 Adding a single parameter

Configure location. right window. BKT SM4DC Freeware –		nementer per per per per per per per p
It SM4DC Freeware		Click on the location you created and then click Add button in the
Add new snmp object Properly Value Object general settings Name Name Analog-1 temp Unit Environmentation settings Object communication settings BKT EMS - EC335 Object communication settings 91189:30.34 Optier tommunity string V2 c P address 91189:30.34 Port number 161 Read community string public Write community string public Somgo object identifier OID 3.6.1.4.147945.2.1.7.201002 Object value conversion 2 Parameter a of f(0)=ax+b function recalculating snmp value 1 Parameter a of f(0)=ax+b function recalculating snmp value 2 Value to write 2 Eet and SET snmp value Get value Get current snmp value Get value Value to write Set value Set somp value against thresholds Set value Check snmp value against thresholds C Check snmp value against threshold Set value Value to write Set value <th>Configure location.</th> <th>right window.</th>	Configure location.	right window.
Property value Object general settings Analog-1 temp Name Analog-1 temp Unit Ext EMS - EC335 Object communication settings BXT EMS - EC335 Object communication settings V2 C Symp wrision V2 C P address 91.169.03.04 P address 91.169.03.04 Symp object identifier OID 161 Read community string public Symp object identifier OID 13.61.4.1.4739.45.2.1.7.201002 Object value conversion Inst.61.4.1.4739.45.2.1.7.201002 Number of decinifier oID 3.61.4.1.4739.45.2.1.7.201002 Object value conversion Inst.61.4.1.4739.45.2.1.7.201002 Read value onversion 2 Get arenet as of flopi-ax+b function recalculating smp value 1 Get arenet as are recalculating smp value 2 Get arenet as flopi-ax+b function recalculating smp value 2 Get arenet simp value Get value Get arenet simp value Get value Object alarm thresholds Get value Object alarm thresholds Ine	BKT SM4DC Freeware	- O X
Property value Object general settings Analog-1 temp Name Analog-1 temp Unit Ext EMS - EC335 Object communication settings BXT EMS - EC335 Object communication settings V2 C Symp wrision V2 C P address 91.169.03.04 P address 91.169.03.04 Symp object identifier OID 161 Read community string public Symp object identifier OID 13.61.4.1.4739.45.2.1.7.201002 Object value conversion Inst.61.4.1.4739.45.2.1.7.201002 Number of decinifier oID 3.61.4.1.4739.45.2.1.7.201002 Object value conversion Inst.61.4.1.4739.45.2.1.7.201002 Read value onversion 2 Get arenet as of flopi-ax+b function recalculating smp value 1 Get arenet as are recalculating smp value 2 Get arenet as flopi-ax+b function recalculating smp value 2 Get arenet simp value Get value Get arenet simp value Get value Object alarm thresholds Get value Object alarm thresholds Ine	Add new snmp object	
Object general settingsNameAnalog-1 tempUnitDeviceBKT EMS - EC335Object communication settingsSmmp versionv2cIP address91.189.03.4Port number161Read community stringpublicWrite community stringpublicSmmp object identifier OID3.6.1.4.1.47394.5.2.1.7.201002Object value conversionParameter a of top-ax-b function recalculating smmp value1Parameter a of top-ax-b function recalculating smmp value0Get and splace safter recalculation0Get and splace safter recalculationGet valueObject dentifier OIDSet valueParameter a of top-ax-b function recalculating smmp value1Parameter a of top-ax-b function recalculating smmp valueGet valueGet current smmp valueGet valueGet current smmp valueSet valueObject dentifier OIDSet valueObject dentifier OIDSet valueObject dentifier OIDSet valueGet current smmp valueGet valueCurrent smmp valueSet valueObject dentifier OIDSet value <td< td=""><td></td><td>Value</td></td<>		Value
NameAnalog-1 tempUnitUnitDeviceBK EC335DeviceSK SC335Somp versionV2CSomp version9.189.30.34Pardterss9.189.30.34Port numberBudferssRead community stringpublicSomp object identifier OID1.36.14.147394.5.2.17.201002Object downersion.36.14.147394.5.2.17.201002Parameter aof (by=ax+b function recalculating smp value0Parameter aof (by=ax+b function recalculating smp value1Read valueGet valueStrameter aof (by=ax+b function recalculating smp value0Read valueGet valueStrameter aof (by=ax+b function recalculating smp value0Read valueGet valueStrameter aof (by=ax+b function recalculating smp value0Strameter aof (by=ax+b function recalculating smp value1Str		
Unit Berkind Device BKT EMS - EC335 Object communication settings V2c Smmp version V2c Pardness 91.189.30.34 Port number 161 Read community string public Smmp object identifier OID 1.3.6.1.4.1.47394.5.2.1.7.201002 Object value conversion 1 Parameter a of f(b)=ax+b function recalculating smmp value 1 Parameter b of f(b)=ax+b function recalculating smmp value 0 Number of decimal places after recalculating smmp value 2 Get and SET samp value Get value Read value Get value Get curret smmp value Get value Value to write Set value Set samp value Set value Object value my value Set value Object value signist thresholds Concent samp value Check smmp value against thresholds Set value Check smmp value against threshold failure 45 - Low threshold failure Set value - Low threshold failure Set value - Hig		Analog-1 temp
DeviceBKT EMS - EC33Object communication settingsSmmp versionV2IP address9.108.30.34PaddresspublicRead community stringpublicRead community stringpublicSmmp object identifier OID1.3.6.1.4.1.47394.5.2.1.7.201002Object value conversion-Parameter a of f(y)=ax+b function recalculating snmp value0Read value0Off and SET snmp value2Get value for some site of ty/0 = ax+b function recalculating snmp value0Commer some valueGet valueOutput string0Set snmp valueGet valueSet snmp valueGet valueValue to writeSet valueSet snmp valueSet valueObject alarm thresholdsSet valueUnit threshold failure2.7I con threshold failure4.1I con threshold failure4.5I contart snmp value against defined textII con threshold failure1.1I con threshold fai		Analog-1 temp
Object communication settings Snmp version v2c IP address 91.189.30.34 Port number 161 Read community string public Write community string public Snmp object identifier OID 1.3.6.1.4.1.47394.5.2.1.7.201002 Object value conversion 1 Parameter to of (x)=ax+b function recalculating snmp value 0 Parameter to of (x)=ax+b function recalculating snmp value 0 Parameter to of (x)=ax+b function recalculating snmp value 0 Set and SET snmp value 0 Get current snmp value 6 et value Value to write 6 et value St snmp value 5 et value Object alarm thresholds 5 et value Object alarm thresholds 2,7 Check snmp value against thresholds 6,7 - Low threshold failure 4,6 - High threshold failure 6,7 - High threshold failure 1 - High threshold failure 1 - Hystersis 1 - Hystersis 1 - Hystersis 1 - Text of warming state.		RKT ENVS - EC225
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Get current snmp value Get value Value to write Set snmp value Set snmp value Set value Object alarm thresholds Set value - Low threshold failure 2,7 - Low threshold warning 14,1 - High threshold failure 36,7 - High threshold failure 45 - Hysteresis 1 - text of normal state. - - text of warning state. -		
Value to write Set snmp value Set value Object alarm thresholds Image: Set value Check snmp value against thresholds Image: Set value - Low threshold failure 2,7 - Low threshold warning 14,1 - High threshold warning 36,7 - High threshold failure 45 - Hysteresis 1 Check snmp value against defined text Image: Set value - Text of normal state. Image: Set value	Read value	
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- Low threshold failure2,7- Low threshold warning14,1- High threshold warning36,7- High threshold failure45- Hysteresis1Check snmp value against defined text0- Text of normal state Text of warning state	Object alarm thresholds	
- Low threshold warning 14,1 - High threshold warning 36,7 - High threshold failure 45 - Hysteresis 1 - Check snmp value against defined text 0 - Text of normal state. - - Text of warning state. -	Check snmp value against thresholds	0
- High threshold warning 36,7 - High threshold failure 45 - Hysteresis 1 - Hysteresis 0 - Check snmp value against defined text 0 - Text of normal state. - - Text of warning state. -	- Low threshold failure	2,7
- High threshold failure 45 - Hysteresis 1 Check snmp value against defined text □ - Text of normal state. - - Text of warning state. -	- Low threshold warning	14,1
- Hysteresis 1 Check snmp value against defined text I - Text of normal state. I - Text of warning state. I	- High threshold warning	36,7
Check snmp value against defined text - Text of normal state. - Text of warning state.		
- Text of normal state Text of warning state.		
- Text of warning state.		
- Text of failure state.		
	- Text of failure state.	
OK Cancel		OK Cancel



Object general settings	Basic SNMP parameter settings of the monitored device
Name	Name of the monitored object. The name must be unique in the current location.
Unit	Unit of the object, e.g. V (Volt), A (Ampere), etc.
Device	Name of device, which the parameter is monitored, for example UPS.
Object communication settings	They define the way of communication with the device in order to read the value of a given object
Snmp version	The version of the SNMP protocol used to communicate with the device. Possible settings version 1 or version 2c.
IP address	IP address of the monitored device.
Port number	SNMP communication port number. By default 161. Acceptable range (1-65535).
Read community string	Password enabling the parameter to be read from the device.
Write community string	Password for saving the parameter value to the device.
Snmp object identifier OID	Identifier of the monitored parameter in the device.
Object value conversion	It enables the conversion of the value read from the device into the value to be monitored. Of course, the read value must be numeric in order to convert it. The conversion is carried out in accordance with the linear function $f(x) = ax + b$. If the value is not to be converted, set the values of the following parameters to $a = 1$ and $b = 0$.
Parameter a of f(x)=ax+b function	Some devices provide only integer values, e.g. 2385 voltage, which should be divided by 10 to get the real voltage value of 238.5V. In this case, a = 0.1 will convert and display the correct voltage. Default value a = 1. Any numerical value is allowed.
Parameter b of f(x)=ax+b function	Sets the measurement offset from the real value. E.g. measured temperature $t_m = 19.7$ °C, while real $t_r = 18.9$ °C. In this case, b = -0.8 will convert and display the correct temperature. Default value b = 0. Any numerical value is allowed.
Number of decimal places after recalculation	Specifies with what precision (number of digits after the decimal point) the value after conversion is to be displayed. Acceptable range (0-15).
GET and SET snmp value	It allows checking entered settings, reading a parameter from the device as well as writing a new value to the device.
Read value	Value read from the device.
Get current snmp value	Clicking the button sends a query to the device for the parameter value that will be displayed in the cell above.
Value to write	The value to be saved to the device.
Set snmp value	Clicking the button sends the value from the above cell to be saved in the device.
Check snmp value against thresholds	Checking the box will cause that after each reading of the value from the device and its conversion according to the function $f(x) = ax + b$ it will be compared with the defined alarm thresholds and the corresponding alarm will be signalled. The value must be numeric for this comparison to be possible. It is possible to set 4 alarm thresholds: two signalling low level and two signalling high level. In addition, warning and emergency conditions are distinguished as shown in the figure below.
	Ц Ц Н НН
	Low failure Low warning Normal working High warning High failure threshold LL threshold L area threshold H threshold HH exceeded exceeded exceeded exceeded
Low threshold failure	Specifies the LL value, the exceeding of which will be signalled as: "value below the failure threshold"
Low threshold warning	Specifies the L value, the exceeding of which will be signalled as: "value below the warning threshold"
High threshold warning	Specifies the H value, the exceeding of which will be signalled as: "value above the warning threshold"
High threshold failure	Specifies the HH value, the exceeding of which will be signalled as: "value above the failure threshold"



Hysteresis	Hysteresis is the difference between the value that causes a change in state (e.g. from normal to warning) and the value that causes the state to return to the original state (from warning to normal). Hysteresis prevents frequent changes in states when the value oscillates around a defined threshold. The hysteresis applies to all thresholds, i.e. LL, L, H and HH. $\underbrace{state}_{hysteresis}$
Check snmp value against defined text	Checking the box will cause that after each reading of the value from the device it will be compared with the defined text values. This functionality is provided for parameters which values are not numerical. For example, some sensors send the text "ALARM" at the time of the alarm and the message "NORMAL" in normal operation. The logic comparing the texts is as follows: FAILURE ALARM, if read text = Text of failure state else WARNING ALARM, if read text = Text of warning state else NORMAL STATE, if read text = Text of normal state else FAILURE ALARM which means that if the read value is not the same as normal or warning text, it will always be a failure condition.
Text of normal state	If the read value is the same as with the text entered in this field, the normal state will be signalled, unless a warning or failure condition is already signalled.
Text of warning state	If the read value is the same as the text entered in this field, a warning alarm will be signalled, regardless of the text in the "Text of normal state" field, unless failure state is already signalled.
Text of failure state	If the read value is the same as the text entered in this field, a failure alarm will be signalled, regardless of the text in the "Text of normal state" and "Text of warning state".



3.5.9 Editing parameters

Columns 🕼 Locations 😂 Database 🚮 Cha		Add Characteria	It is possible to edit a single or a group of selected parameters. Select one or use the CTRL or SHIFT keys to select a group of objects or
Q Search			the list that are to be edited. Click the <i>Edit</i> button.
Name Value	Time	Error	
Dry-1			
Dry-2			
Dry-3			
Dry-4			
Analog-3 door			
Analog-4 leak			
Onboard Temperature			
Analog-1 temp			
Analog-2 humi			
Onboard Voltage DC			
Analog Power Power-1			
Power-1 Power-2			
BKT SM4DC Freeware		- 🗆 X	
		- U X	In the opened window, modify the parameter properties and confirm
Edit snmp objects			by clicking OK. The description of individual properties is identical t
Property	Value		that given in section 3.5.8 Adding a single parameter. The change wi
Object general settings			
Name	(various values)		be applied to all previously selected objects. Various values means that
Unit			not all selected objects had the same value for a given property. I
Device	BKT EMS - EC335		
Object communication settings			(various values) remains unchanged, the given property will not be
Snmp version	v2c	•	averurittan in any object
IP address	91.189.30.34		overwritten in any object.
Port number	161		
Read community string	public		
Write community string	private		ATTENTION
Snmp object identifier OID	(various values)		Since the saved measurement data of the SNMP parameter is related
Object value conversion			· · · · · · · · · · · · · · · · · · ·
Parameter a of f(x)=ax+b function recalculating snmp value	1		to its location and name, changing the parameter name means that the
Parameter b of f(x)=ax+b function recalculating snmp value	0		existing measurement data (charts) will not be visible in the program
Number of decimal places after recalculation	2		
Object alarm thresholds			Only measurement data will be visible from the moment the
Check snmp value against thresholds			and the second second states and the second se
- Low threshold failure	(various values)		parameter name was changed. However, historical data is stil
- Low threshold warning	(various values)		available under the old name, but only in csv files. See section
- High threshold warning	(various values)		
- High threshold failure	(various values)		3.8 Database.
- Hysteresis	1		
Check snmp value against defined text			
		OK Cancel	

3.5.10 Deleting parameters

Columns 🔇 😯 Li	ocations 🥃 Database 💡	Chart			Edit parameters	It is possible to delete a single or a group of selected parameters.
		🎲 Edit 🔒 De	lete 🔒 Add	🗞 Import	🚑 Export	Select one or use the CTRL or SHIFT keys to select a group
Q Search						parameters on the list that are to be removed from the system.
Name	Value	Time		Error		Click the <i>Delete</i> button and confirm your intention to delete.
Dry-1						Click the Delete button and commit your intention to delete.
Dry-2						
Dry-3						
Dry-4						
Analog-3 door						
Analog-4 leak						
Onboard Temperature						
Analog-1 temp						
Analog-2 humi						
Onboard Voltage DC						
Analog Power						
Power-1						
Power-2						



3.5.11 Exporting - creating a device model

The program allows you to create a device template that will contain information about SNMP parameters that can be monitored in a given type of device. Such parameters can be pre-parameterized, i.e. have names, SNMP connection data, alarm thresholds and other values that can be assigned to the parameter. This device model can be used to duplicate devices in the system. Then it will only be necessary to update one parameter characterizing the new device - (e.g. IP address)

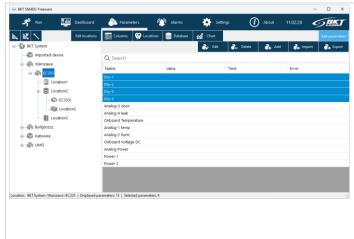
		🍌 Edit 🔒 Delete	斉 Add 🛛 🗞 Impe	ort 💦 Export	Configure the group of objects that will form the device model. Use the
Q Search					instructions from the chapters:
Name	Value	Time	Error		
		Time	Elloi		3.5.8 Adding a single parameter
Prąd L1 Napięcie L1					3.5.9 Editing parameters 3.5.9 Editing parameters
Moc L1	w				
Współczynnik mocy L1					Then select one or use the CTRL or SHIFT keys to select a group
Zużycie energii L1	kWh				objects on the list that are to form the device model.
Prąd L2	А				
Napięcie L2	V				Click the <i>Export</i> button.
Moc L2	W				
Współczynnik mocy L2					
Zużycie energii L2	kWh			_	
Prąd L3 Napięcie L3					
BKT SM4DC Freeware				– 🗆 X	Giving a name to the model and saving
Export objects as a	levice model				In the opened window, enter the unique name of the device model
Model name	Name		Oid		and confirm by clicking OK.
BKT MPDU	Prạd L	1	1.3.6.1.4.1.47394.8.1.	2.1.1.0	, .
	Napię	cie L1	1.3.6.1.4.1.47394.8.1.	2.1.2.0	The device model will be saved to an xml file in the
	Prąd L	2	1.3.6.1.4.1.47394.8.1.	2.2.1.0	C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware\Library
	Napię	cie L2	1.3.6.1.4.1.47394.8.1.	2.2.2.0	
	Prąd L	3	1.3.6.1.4.1.47394.8.1.	2.3.1.0	directory
	Napię	cie L3	1.3.6.1.4.1.47394.8.1.	2.3.2.0	The model saved in this way will be visible in the window of models

3.5.12 Moving parameters between locations

The program allows you to move parameters between locations using drag and drop. Using the same method, you can also change the system structure by dragging the entire location from one location to another. The changes introduced will also be made on the computer's disk in the structure of subdirectories in the *C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware\Data* directory.

ATTENTION

When making modifications to the system structure, make sure that no folder with data saved in the C:\ProgramData\BKT Elektronik\BKT SM4DC Freeware\Data directory is currently open. In this case, the program may report that the disk cannot be accessed.



Moving parameters

Select one or, using the CTRL or SHIFT keys, a group of parameters. Drag the selected parameters using the CTRL key to the target location and confirm your intention to move.

ATTENTION

Since the saved measurement data of a parameter is related to its location and name, moving objects means that the existing measurement data (charts) will not be visible in the program. Only measurement data from the moment the objects were moved will be visible. However, historical data is still available in the old location, but only in csv files. See section *3.8 Database*.

Moving locations

Select the location to be moved and drag it to the new location. Moving a location retains all previous measurement data.



3.6 Alarms

All exceedances of defined alarm thresholds are displayed on a separate tab - alarm tab. When clicking on this tab, the currently active alarms are visible. Alarm threshold can be modified by editing the individual objects (see chapter 3.5.9 Editing parameters).

3.6.1 Active alarms

Red colour means exceeding failure thresholds, and yellow exceeding warning thresholds.

	e alarms aying currently active alarms.						orical a	ilarms historic	al alarr	ns.			
BKT SM4DC Freeware											-		×
🜴 Stop	🗐 Dashboard î Para	meters	Alarms (3) 🔅 Settings	i	About	wtore	k, 9 kwiet	tnia 2024	, 12:41:35			K Mortek 7
ACTIVE												🙏 Hi	storica
Name	Location	Activation time	Deactivation time	Description	Value	LL	L	н	нн	Hystere	Normal text	Warning text	Failu text
	BKT System /Warszawa /EC335 /Location1	2024-04-09 12:40:25		FAILURE: parameter is offline		0	1	999	1000	0,5			
nalog-2 humi	BKT System /Warszawa /EC335	2024-04-09 12:38:52		FAILURE: value above high failure (Value > HH)	39.7		20	28	29				
nalog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:38 <u>:</u> 42		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1	
i Jres: 2 Warnings: 1 Alarming obje Name of obje	ect ct (device parameter)			ation time n activation time				of the o iggered				rm eshold ings	
		L	ocation ocation of th he alarm	ne object that triggered		The		for the		. Descri fline ala		e alarm	۱

Alarm examples

Alarm type	Description
FAILURE: parameter is offline	FAILURE. Object did not respond for 5 consecutive requests.
FAILURE: value below low failure (Value < LL)	FAILURE. The parameter value read from the device is below the set low failure threshold.
FAILURE: value above high failure (Value > HH)	FAILURE. The parameter value read from the device is above the set high failure threshold.
WARNING: value below low warning (Value < L)	WARNING. The parameter value read from the device is below the set lower warning threshold.
WARNING: value above high warning (Value > H)	WARNING. The parameter value read from the device is above the set high warning threshold.
WARNING: value equals warning text (Value = Warning text)	WARNING: The parameter value read from the device is identical to the warning text



3.6.2 **Historical alarms**

It is possible to view the alarm history, display only those within the specified time period and matching the search criteria. Then it is possible to export the currently displayed list to the csv file. The list view is similar to the view of list of active alarms.

Active alarms Button to display ac		Alarm dates Alarm time range to display.				Alarms export Export to csv file currently displayed historical alarms									
👄 BKT SM4DC Freeware													- /	x c	
📌 Stop	Dashboard 🏻 🏠 Par	ameters	Marms	(2)	Settings	i	About	wtor	ek, 9 kwi	ietnia 20	24, 12:53	12	\$		
HISTORICAL Q Sear	ch			From 10	marca 2024		To 09	kwietnia	2024			Export	é 👘	Active	
Name	Location	Activation time	Deactivation time	Description		Value	LL	L	н	нн	Hystere	Normal text	Warnin _! text	Failure text	
5	BKT System /Warszawa /EC335 /Location1	2024-04-09 12:40:25	2024-04-09 12:52:53	FAILURE: par	rameter is offline		0	1	999	1000	0,5				
Analog-2 humi	BKT System /Warszawa /EC335	2024-04-09 12:38:52	\mathbf{X}	FAILURE: val (Value > HH)	ue above high failur	⁸ 39.7	15	20	28	29	1				
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:38:42		WARNING: va text (Value =)	alue equals warning Warning text)	1	0	1	999	1000	1	0	1		
Zużycie energii gniazda 24	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2 /PDU2	2024-04-09 12:33:56		FAILURE: par	rameter is offline		0	1	999	1000	0,5				
Zużycie energii gniazda 23	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2 /PDU2	2024-04-09 12:33:55		FAILURE: par	rameter is offline		0	1	999	1000	0,5				
Zużycie energii gniazda 11	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2 /PDU2	2024-04-09 12:33:53		FAILURE.pai	rameter is offline		0	1	999	1000	0,5				
Zużycie energii gniazda 20	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2 /PDU2	2024-04-09 12:33:53		FAILURE: pa	Alarm deac Time when			f tho fio	ld is on	ontv it	moons	that it	isan		
Zużycie energii gniazda 15	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2 /PDU2	2024-04-09 12:33:53		FAILURE: pa			••								
Zużycie energii gniazda 14	BKT System /UMG /Hala sportowa /LPD-HS2 /Szafa2	2024-04-09		FAILURE: par	rameter is offline		0	1	999	1000	0.5				
Displayed alarms: 12876															

3.6.3 Search for historical alarms

It is possible to search for the desired historical alarms from the list of currently displayed ones.

The search result will display alarms that contain the string of characters entered in the search field:

- name of the object or
- the full path of the object's location or
- alarm type

Letter case does not matter when searching.

🔒 BKT SM4DC Freeware – 🛛														
📌 Stop	Dashboard 🏠 Pa	rameters	Marms	(2) 🔅 Settings	i	About	wtore	ek, 9 kwi	ietnia 202	24, 12:56	04	6	3K 7°	
HISTORICAL Q.V	warning			From 10 marca 2024		То 09	kwietnia	2024		6	Export	Ŵ	Active	
Name	Location	Activation time	Deactivation time	Description	Value	LL	L	н	нн	Hystere	Normal text	Warnin _! text	Failure text	
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:38:42		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:25:34		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:19:02		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:12:59		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:11:25		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:05:49		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 12:02:09		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 11:58:45		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 11:57:31		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 11:55:14		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Analog-3 door	BKT System /Warszawa /EC335	2024-04-09 11:48:52		WARNING: value equals warning text (Value = Warning text)	1	0	1	999	1000	1	0	1		
Displayed alarms: 56														



3.7 Application settings

The main application settings are available under the *Settings* button. Enter the settings as described in the table below and save by clicking the *Save* button. These settings are saved to the project file (see chapter *3.1 Opening / Closing / Saving the project*).

BKT SM4DC Freeware	– 🗆 X
Application settings	
Parameter	Value
Communication settings	
Polling period [s]	10
SNMP timeout [ms]	1000
Email notifications	
Enable alarm email notyfications	
Send email not more often than [s]	60
Email account configuration	
SMTP server address	smtp.server.com
SMTP server port	25
Enbale SSL	
Account username	user@server.com
Account password	
Email subject	System notification
Recipients of email notifications	
Send test email	Send
	Save Cancel

Communication settings	Define the way of communication with devices.
Polling period	The interval with which the program polls devices and save the results to the database. Value in seconds. By default every 10s. Acceptable range (10 - 3600s).
SNMP timeout	The time the program will wait for a response from the device. Value in milliseconds. The default is 1000 ms. Acceptable range (100-10000ms).
Email notifications	Define email alerts
Enable alarm email notification	Checking will enable the service of notifying about alarm states in the whole system.
Send email not more often than	Limits the number of email notifications in a defined period. In avalanche failure situations, when one failure causes a second, the number of notifications would exceed human perception. This parameter limits the number of emails to one for a defined time. If other alarms occur during this time, they will be reported to the next email. Value in seconds. Default 60s. Acceptable range (60-3600s).
Email account configuration	They define the email account settings used to generate notifications. These settings must match the settings of the mail server.
SMTP server address	The address of the mail server that supports SMTP.
SMTP server port	SMTP server port that supports connections.
Enable SSL	Checking will enable encrypted communication with the mail server.
Account username	Username of the email account.
Account password	Email account user password.
Email subject	Subject of the message sent by the program. It can be e.g. the name of the monitored system.
Recipients of email notifications	Notification recipient email addresses separated by a semicolon.
Send test email	It allows checking entered e-mail server settings by sending a test email to defined recipients.



3.7.1 Email notifications

Properly configured email notifications will allow you to receive messages in HTML format about any changes in the system. The message contains information about the general system status and the last 5 active alarms. Email examples are below.

Email 1

System information

System status:	WARNING
Server IP address:	10.10.10.32
Server name:	BKTWAWLAP015
Server time:	2024-04-09 13:42:11
Active failures:	0
Active warnings:	1

5 most recent active alarms

No.	Location	Parameter	Value	Description	Activation time
1	BKT System /Warszawa /EC335	Analog-3 door	1	WARNING: value equals warning text (Value = Warning text)	2024-04-09 13:42:11
2	no alarm				
3	no alarm				
4	no alarm				
5	no alarm				

Email 2

System information

System status:	FAILURE
Server IP address:	10.10.10.32
Server name:	BKTWAWLAP015
Server time:	2024-04-09 13:43:11
Active failures:	12
Active warnings:	1

5 most recent active alarms

No. Location Parameter Value Description Activation time BKT System /Katowice /Location1 /BPS2000 FAILURE: parameter is offline 2024-04-09 13:43:11 1 L1 voltage AILURE: parameter is offline 2024-04-09 13:43:11 2 BKT System /Katowice /Location1 /BPS2000 L1 active power FAILURE: parameter is offline 2024-04-09 13:43:11 3 BKT System /Katowice /Location1 /BPS2000 L1 reactive power 2024-04-09 13:43:10 4 BKT System /Katowice /Location1 /BPS2000 sysUpTime AILURE: parameter is offline 2024-04-09 13:43:10 5 BKT System /Katowice /Location1 /BPS2000 sysName FAILURE: parameter is offline

Email 3

System information

System status:	NORMAL
Server IP address:	10.10.10.32
Server name:	BKTWAWLAP015
Server time:	2024-04-09 13:44:11
Active failures:	0
Active warnings:	0

5 most recent active alarms

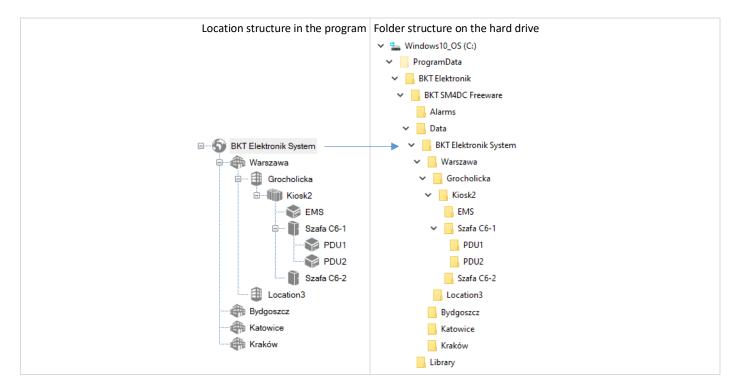
No.	Location	Parameter	Value	Description	Activation time
1	no alarm				
2	no alarm				
3	no alarm				
4	no alarm				
5	no alarm				



3.8 Database

3.8.1 **Directory structure**

Measurement data read from devices are saved to csv files in the C:\ProgramData\BKT Elektronik\Data\ directory. The folder structure in this directory reflects the location structure created in the program.



3.8.2 Measurement data files

Files with measurement data are located in folders in the C:\ProgramData\BKT Elektronik\Data\ directory. Each folder contains measurement data files of objects (parameters) assigned to a given location. Each file contains measurements from a maximum of one day of all objects (parameters) placed in a given location. The data in the file is separated by a comma. The program automatically deletes data older than 60 days.

Data files in the location folder

2020-02-28_00-00-01.csv 2020-02-29_00-00-02.csv 2020-03-01 00-00-01.csv 2020-03-02_00-00-01.csv

- 2020-03-03_00-00-01.csv
- 2020-03-04_00-00-01.csv

Sample content of the measurement data file opened in Notepad.

```
#BKT SM4DC Freeware - Data of Location: BKT Elektronik System /EMS
```

pensionuo steeware - Data or Location: BKI Elektronik System /HS Time,Dry-1,Dry-2,Dry-3,Dry-4,Onboard Temperature,Cubel Temperaturel 1W,Cabinet1 Temperature A2,Cubel Humidity2 A4,Cubel Humidity1 A3,Cabinet1 Humidity A1,(2020-03-12 12:50:57,0,0,0,0,28.5,24.6,23.4,37.0,30.7,31.8,12.1,on,on,off,on 2020-03-12 12:51:15,0,0,0,0,28.5,24.6,23.4,37.1,30.7,31.8,12.1,on,on,off,on 2020-03-12 12:51:15,0,0,0,0,28.5,24.5,23.4,37.1,30.7,31.8,12.1,on,on,off,on

- 2020-03-12 12:51:15,0,0,0,0,28.5,24.5,23.4,37.1,30.7,31.8,12.1,on,on,off,on 2020-03-12 12:51:25,0,0,0,0,0,28.5,24.5,23.4,37.1,30.7,31.8,12.1,on,on,off,on 2020-03-12 12:51:35,0,0,0,0,28.5,24.5,23.4,37.1,30.7,31.8,12.1,on,on,off,on 2020-03-12 12:51:46,0,0,0,0,28.5,24.5,23.4,37.1,30.7,31.8,12.1,on,on,off,on

The same file opened in Excel.

4	A	B	C	D	E	F	G	Н	1	J	K	L	M	N	0	P
1	#BKT SM4DC Freeware	- Data d	of Loca	tion: B	KT Elek	tronik System /	'EMS									
							Cube1	Cabinet1								
						Onboard	Temperature1	Temperature	Cube1	Cube1	Cabinet1	Onboard				
2	Time	Dry-1	Dry-2	Dry-3	Dry-4	Temperature	1W	A2	Humidity2 A4	Humidity1 A3	Humidity A1	Voltage DC	Analog Power	1wire Power	Power-1	Power-2
3	2020-03-12 12:50:51															
4	2020-03-12 12:50:57	0	0	0	0	28.9	24.6	23.4	37.0	30.7	31.8	12.1	on	on	off	on
5	2020-03-12 12:51:08	o	0	0	o	28.9	24.6	23.4	37.0	30.7	31.8	12.1	on	on	off	on
6	2020-03-12 12:51:15	Ó	o	o	o	28.9	24.5	23.4	37.1	30.7	31.8	12.1	on	on	off	on
7	2020-03-12 12:51:25	0	0	0	0	28.9	24.5	23.4	37.1	30.7	31.8	12.1	on	on	off	on
8	2020-03-12 12:51:35	0	0	0	0	28.9	24.5	23.4	37.1	30.7	31.8	12.1	on	on	off	on



3.8.3 Files with alarm data

Historical alarms are saved to the sm4dc_alarms.csv file located in the C:\Program Data\BKT Elektronik\Alarms\ directory. The program automatically deletes data older than 60 days.

Sam	ple contents of a file with historical alarms opened in Notepad.
1	<pre>#BKT SM4DC Freeware file - Alarm history</pre>
2	Name, Location, Activation time, Deactivation time, Type, Value, Thresholds enabled, ValueLL, ValueL, ValueH, ValueHH, Hysteresis, Text matching enabled, Normal text, V
3	Prąd obciążenia gniazda 23,BKT System /pdu,2020-01-13 08:55:09,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
4	Prąd obciążenia gniazda 22,BKT System /pdu,2020-01-13 08:55:09,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
5	Prąd obciążenia gniazda 21,BKT System /pdu,2020-01-13 08:55:09,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
6	Prąd obciążenia gniazda 20,BKT System /pdu,2020-01-13 08:55:09,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
7	Prąd obciążenia gniazda 19,BKT System /pdu,2020-01-13 08:55:10,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
8	Prąd obciążenia gniazda 18,BKT System /pdu,2020-01-13 08:55:10,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
9	Prąd obciążenia gniazda 17,BKT System /pdu,2020-01-13 08:55:10,,WARNING: Value < ValueL,0.0,True,0,1,8,10,0.5,False,,,
10	Prąd obciążenia gniazda 16,BKT System /pdu,2020-01-13 08:55:10,,WARNING: Value < ValueL,0.1,True,0,1,8,10,0.5,False,,,

The same file opened in Excel.

1	#BKT SM4DC Freeware file - /	Alarm history												
				Deactivation			Thresholds						Text matching	
2	Name	Location	Activation time	time	Туре	Value	enabled	ValueLL	ValueL	ValueH	ValueHH	Hysteresis	enabled	text
3	Prąd obciążenia gniazda 23	BKT System /pdu	2020-01-13 08:55:09		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
4	Prąd obciążenia gniazda 22	BKT System /pdu	2020-01-13 08:55:09		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
5	Prąd obciążenia gniazda 21	BKT System /pdu	2020-01-13 08:55:09		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
6	Prąd obciążenia gniazda 20	BKT System /pdu	2020-01-13 08:55:09		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
7	Prąd obciążenia gniazda 19	BKT System /pdu	2020-01-13 08:55:10		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
8	Prąd obciążenia gniazda 18	BKT System /pdu	2020-01-13 08:55:10		WARNING: Value < ValueL	0.0	True	0	1	8	10	0.5	False	
9	Prąd obciążenia gniazda 17	BKT System /pdu	2020-01-13 08:55:10		WARNING: Value < ValueL	0.0	True	o	1	8	10	0.5	False	
10	Prąd obciążenia gniazda 16	BKT System /pdu	2020-01-13 08:55:10		WARNING: Value < ValueL	0.1	True	0	1	8	10	0.5	False	

4 PROGRAM CHANGES

Changes to the program can be found in the BKT-SM4DC-Freeware_version_history.txt file attached to the program.

5 DOCUMENT REVISIONS

Version	Changes	Data
0.12	Initial version	January 2020
0.13	General upgrade to the new version	March 2020
0.14	Upgrade to the new version	April 2024