



Manual

SUPREMA MBC20-Profinet Gateway (CAN / Profinet IO)

Supplement to the SUPREMA Touch manual



Order No.: 10213744/00



Schlüsselstrasse 12
8645 Rapperswil-Jona
Switzerland

Revision History

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1. Introduction

The SUPREMA MBC20 with the software “MBC-20-Profinet” can be used as a part of a SUPREMA Touch system to establish a connection to a Profinet Master (SCADA system or PLC) using the Profinet protocol.

This manual refers to the following software version:

MBC20-Profinet 1.04.01

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2. SUPREMA MBC20-Profinet

2.1. General Information



ATTENTION

The MBC20 hardware uses integrated circuits that can be damaged by electrostatic discharge (ESD). This is even valid for all other microcontroller based products. When handling with the PCBs, care must be taken to protect the device.



ATTENTION

Observe precaution for handling electrostatic discharge sensitive devices!



ATTENTION

The MBC20 hardware is designed to be used for different applications. This manual describes only the behaviour of the module with installed software "MBC20-Profinet". This combination of hardware and software is referred to in this manual as "MBC20-Profinet" module.

The MBC20-Profinet module is delivered ready for use. If changes to the module hardware configuration are necessary, these should be made with no voltage applied. In case of systems that have already been configured, the module configuration should be checked to ensure it is suitable for the application.

2.2. Ordering Information

Order No.	Name
10213559	SUPREMA Profinet Gateway Kit
10213560	SUPREMA MBC20-Profinet
10105279	SUPREMA MBT20

2.3. System Integration

The module MBC20-Profinet was designed to connect a SUPREMA Touch system to a SCADA system or PLC. The MBC20-Profinet provides connections to a SCADA system or PLC.

The data transfer from the SUPREMA Touch to the MBC20-Profinet is done using the system internal CAN bus. When this connection is interrupted, the measuring data transferred to the SCADA system or PLC is declared as invalid by the gateway.

The MBC20 will be internally installed in one of the SUPREMA racks. The physical connection to the SCADA system or PLC will be done using the connectors of the MBT20. This module is installed on the rear of the rack on the same position as the MBC20. Fig. 1 illustrates the integration of a MBC20-Profinet in a system.

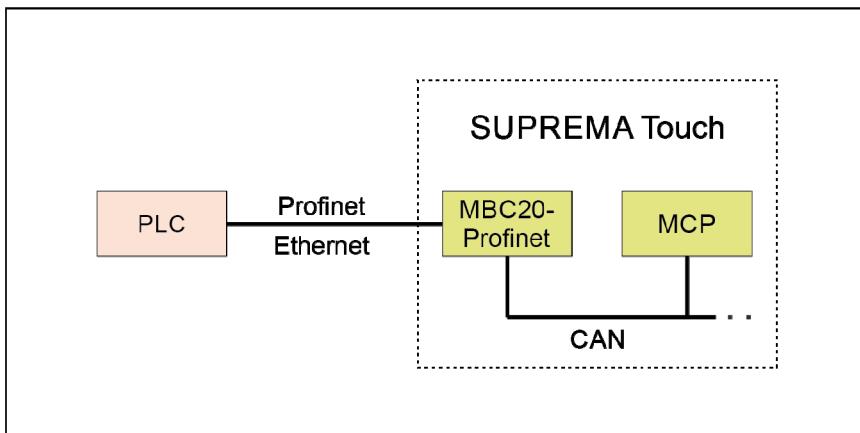


Fig. 1 Integration of an MBC20-Profinet into a SUPREMA Touch system

Additionally, the MBC20-Profinet offers a service to send an email notification when an alarm or signal failure rises or the communication is lost.

2.4. Hardware Settings

DIP Switch Settings

The MBC20 has one block of 4 DIP switches (see Fig. 2 for location). Each of the 4 DIP switches has a single function. After one has been switched, the MBC20 must be rebooted.

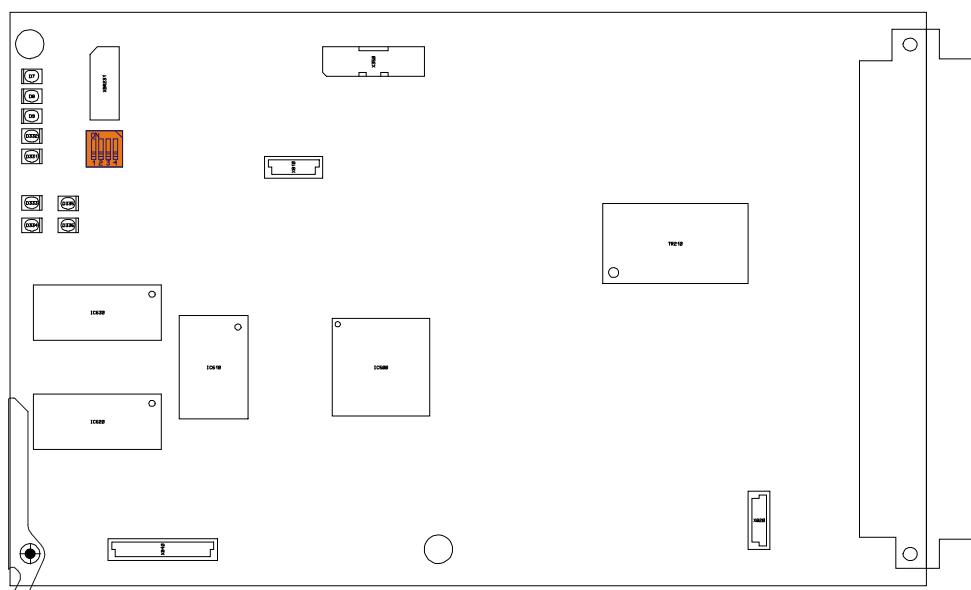


Fig. 2 Position of the DIP switches

DIP switch settings

1	2	3	4	
OFF	OFF	OFF	OFF	Operation on CAN A (factory setting)
OFF	OFF	OFF	ON	Operation on CAN B
ON	OFF	OFF	OFF	Bootloader
OFF	OFF	ON	OFF	Reset all parameters
All other combinations				Reserved

CAN Bitrate and Node ID Settings

The CANopen node ID being used by the MBC20 depends on the SUPREMA rack number and the number of the slot being used.

2.5. Status LEDs

There are 12 status LEDs on the MBC20 module. The location of each LED is shown in Fig. 3 and the function of each is described in the table below.

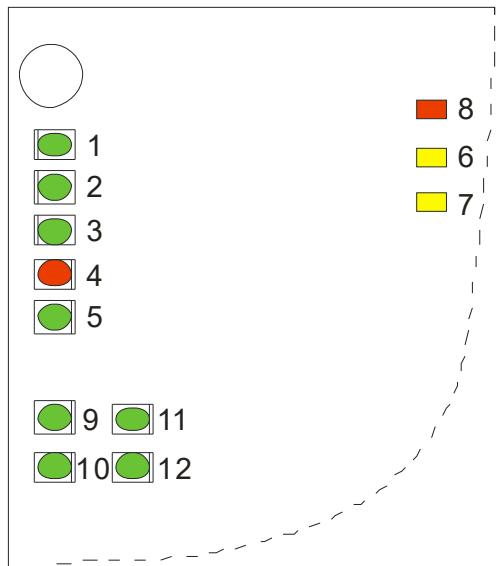


Fig. 3 Location of the MBC20's status LEDs

The following table shows the function of each MBC20 LED.

LED No.	Name	Description
1	External power	Indicates whether external power is used as main power supply
2	Internal power	Indicates whether internal power is used as main power supply
3	Battery	Indicates whether a battery is used as main power supply
4	Fail	Indicates whether the MBC has detected a software failure
5	CAN	Indicates normal CAN bus status
6	System failure	Indicates an system failure set by this module
7	Voltage failure	Indicates an voltage failure on this PCB
8	Reset	Indicates the reset state of the module
9	MOD A	Used for Profinet module identification
10	MOD B	- not used -
11	CAN A	Indicates whether CAN bus A is used
12	CAN B	Indicates whether CAN bus B is used

3. Web-based Configuration

3.1. General

All parameters can be displayed or edited via the integrated web server of the MBC20-Profinet. A standard web browser can be used.

Each access to the configuration is protected and it is necessary to log in before accessing the data (see Fig. 4). Only one user is allowed to access this data at the same time. After 5 minutes without activity the user will be logged out automatically.

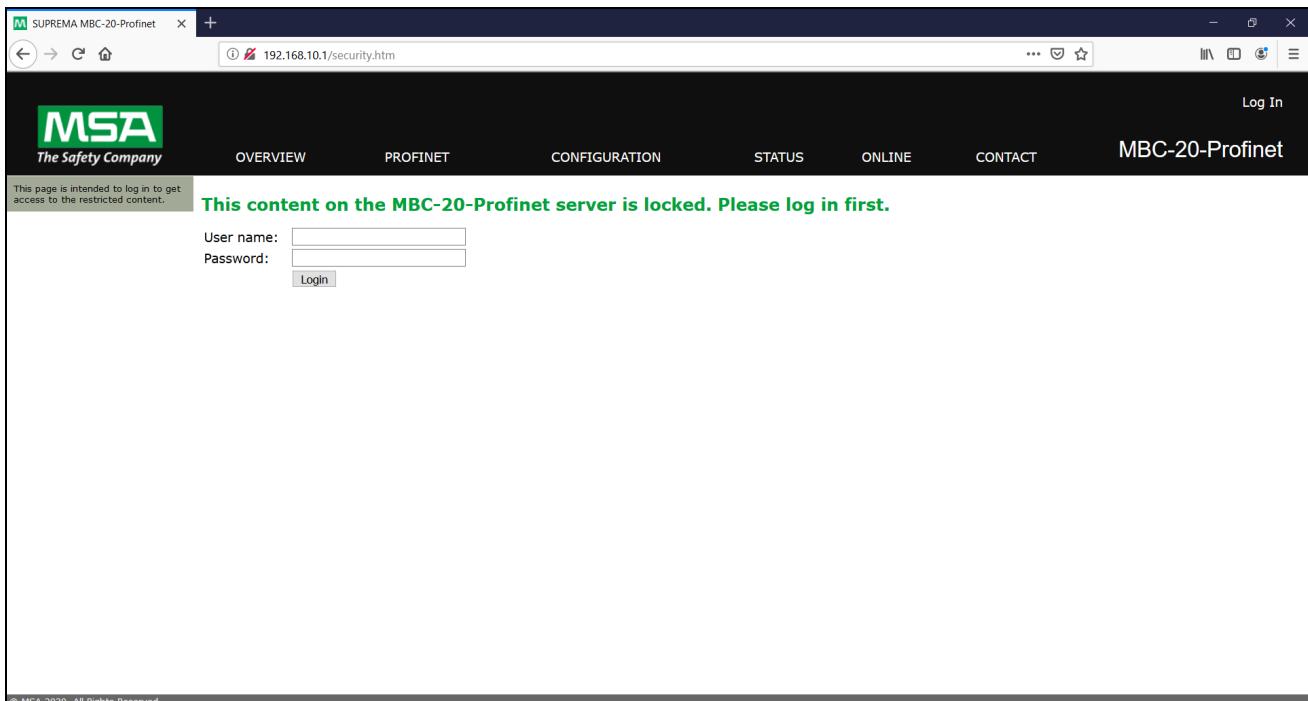


Fig. 4 Security configuration page

Default Access Data

Parameter	Value
User name	Customer
Password	MSA

Each configuration page has a “Submit” button. Clicking this button saves the entered data in a non-volatile memory of the MBC20-Profinet. After reboot of the module the new configuration is active.

3.2. Security Configuration

All security values are defined by default, but to improve the security these values should be changed to user-specific values.



Changing the Settings

All security-related parameters can be displayed or edited in the section “CONFIGURATION” / “Security” of the integrated web server (see Fig. 5).

Web-based Configuration

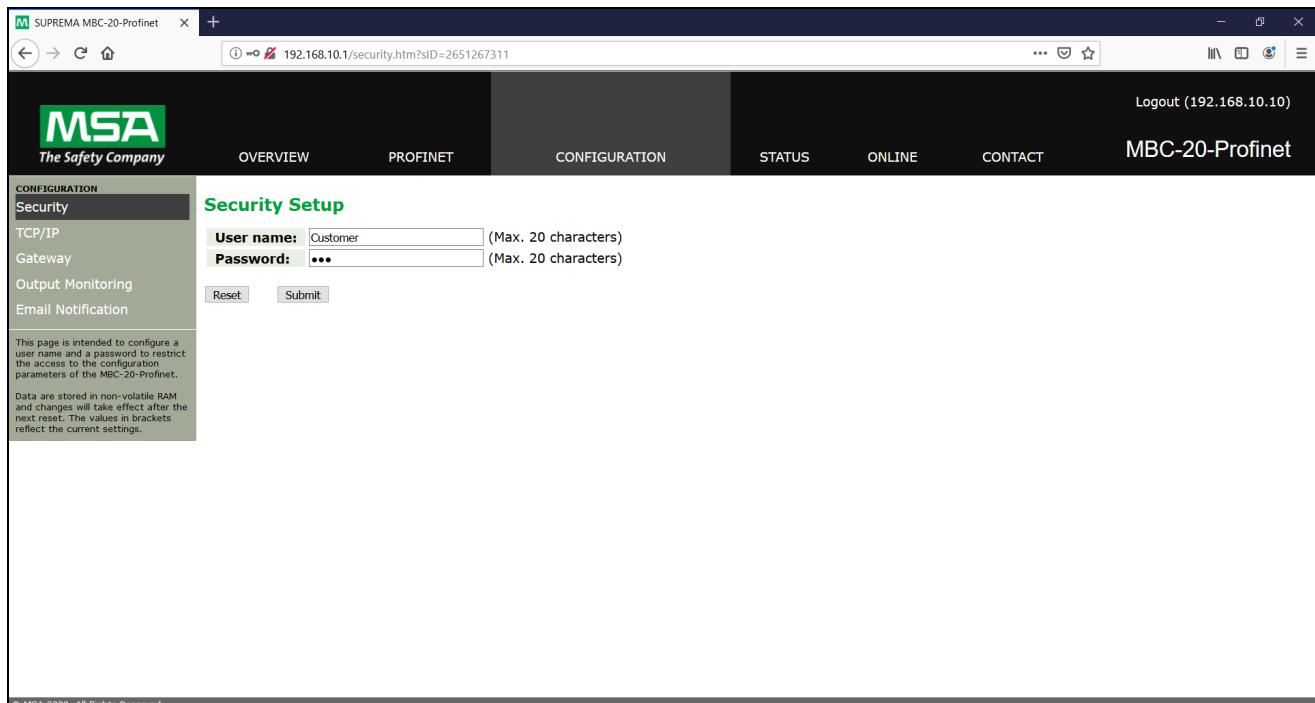


Fig. 5 Security configuration page

3.3. TCP/IP Configuration

All configuration values are defined by default, but in most applications some values need to be changed to match the requirements of the local network.



Default Settings

The following table shows the default configuration of the MBC20-Profinet.

Parameter	Value
MAC adresse	Factory defined
IP adresse	192.168.10.1
Network subnet mask	255.255.255.0
TCP/IP Gateway address	192.168.10.100
Name server (DNS)	192.168.10.20

Changing the Settings

All network-related parameters can be displayed or edited in the section "CONFIGURATION" / "TCP/IP" of the integrated web server (see Fig. 6). Additionally, some TCP/IP parameters can be changed using Profinet features.

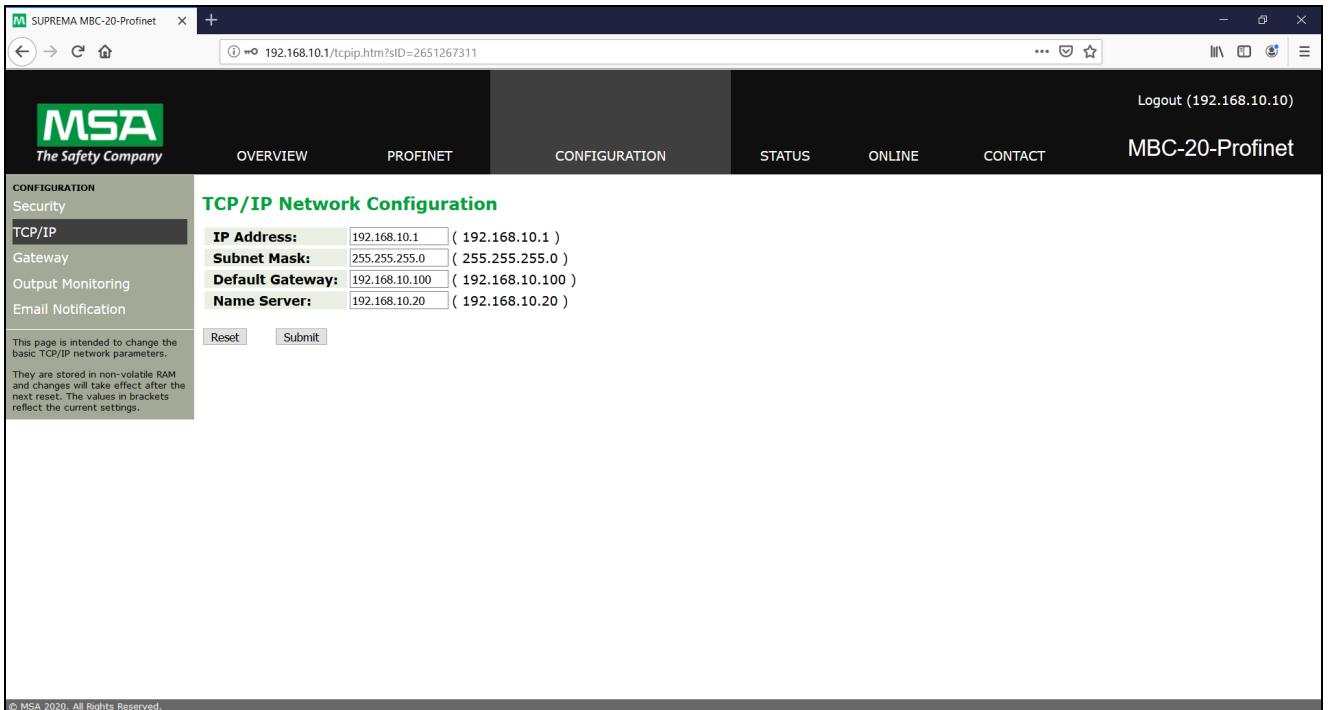


Fig. 6 TCP/IP configuration page

3.4. Gateway Configuration

All Profinet gateway settings are defined by default, but in most applications some values need to be changed to match the requirements of the connected Profinet Master (SCADA system or PLC).

Changing the Settings

All Profinet gateway related parameters can be displayed or edited in the section "CONFIGURATION" / "Gateway" of the integrated web server (see Fig. 7).

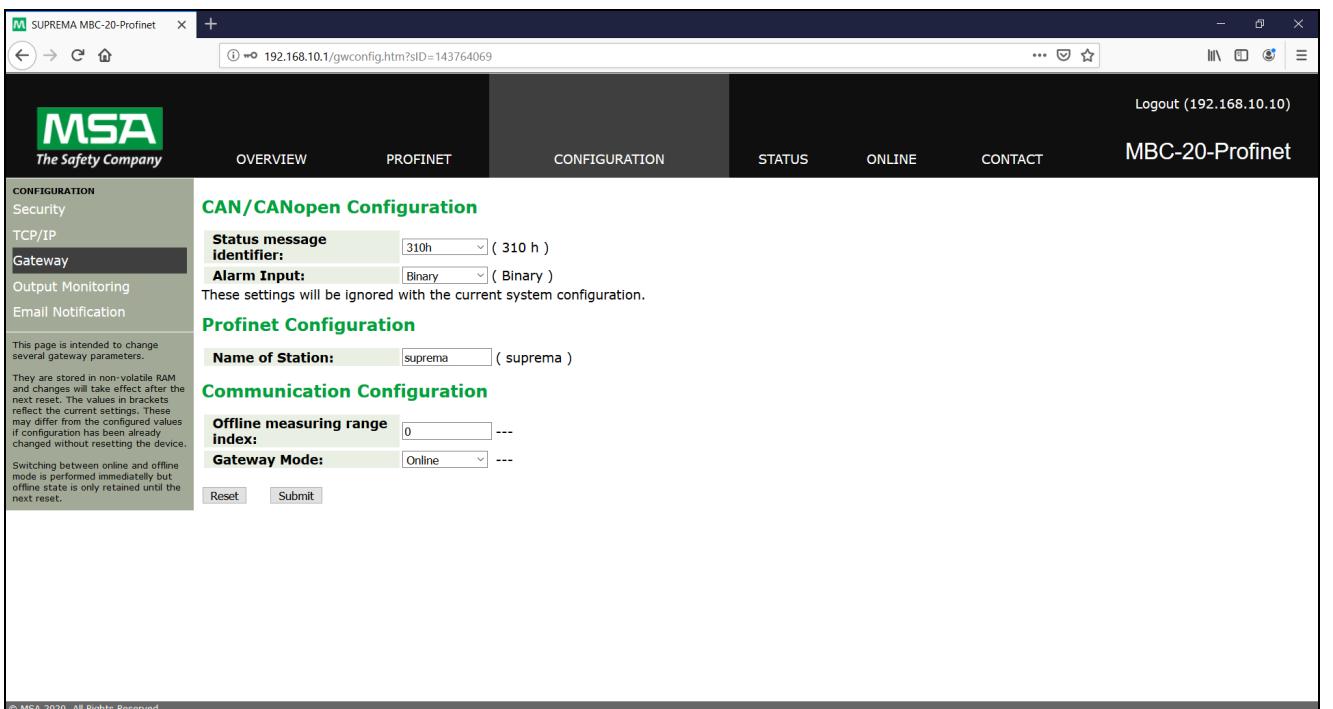


Fig. 7 Profinet Gateway configuration page

Description of the CAN/CANopen Parameters

Status message identifier (default is 310h): In addition to transmitting the measuring values, the SUPREMA also transmits special alarm and event information for each measuring point with a higher frequency than the measuring values. In this drop down list the identifier that is used by the SUPREMA can be configured to merge this additional alarm information with the standard alarm information or evaluating this information can be deactivated. The identifier is defined by the position of the MDO, i.e. if the MDO is mounted in the first rack, the value of the identifier is 310h, if it is mounted in the second rack, the identifier is 320h, etc.

This parameter will be ignored, if a SUPREMA Touch is used and the gateway is correctly configured as an MBC20-Profinet (not as general gateway).

Alarm Input (default is Binary): The alarm status byte of the SUPREMA measuring point CAN message can be interpreted as binary bit mask or decimal value. If they are interpreted as binary value they are copied transparently into the process image of the gateway. If they are interpreted as decimal value the given alarm and all alarms with a lower number are stored (values above 4 are discarded).

The setting decimal must only be used for systems with an MCP10 / MDO10 software version earlier than 1.02.03. This parameter will be ignored, if a SUPREMA Touch is used and the gateway is correctly configured as an MBC20-Profinet (not as general gateway).

Description of the Profinet Parameters

Name of Station (default is "suprema"): In this field the Profinet station name can be defined.

Description of the Communication Parameters

Offline measuring range (default is 0): If the data is scaled in "Offline" mode, a measuring range can be defined independently from the measuring range defined for the "Offline" data. If set to 0, the measuring range of the "Offline" data is used for scaling.

In contrast to other parameters which can be configured via this page, this parameter is activated immediately and won't be stored persistently.

Gateway mode (default is Online): If no SUPREMA is connected to the CAN bus, the MBC20-Profinet can be put into a special "Offline" mode. In this mode a predefined static set of process data for the 256 measuring points (see chapter 6 "Offline Status Values") is used as process image. This mode may be used to check the communication between the gateway and the Profinet master (SCADA system or PLC) without a SUPREMA. All other data conversion configurations affect these values in the same way as in the standard "Online" mode with process data received from the SUPREMA.

In contrast to other parameters which can be configured via this page, this parameter is activated immediately and won't be stored persistently.

3.5. Output Monitoring Configuration

It is possible to enter the CAN node IDs of the MGOs in the connected SUPREMA system (only these on the same CAN bus). This is necessary for classic SUPREMA systems to support the function to read out the status of all digital outputs. For SUPREMA Touch systems this is not necessary to support this function, but speeds it up.

Changing the Settings

The output monitoring settings can be displayed or edited in the section “CONFIGURATION” / “Output Monitoring” of the integrated web server (see Fig. 8).

MGO	Configured ID
1	0 (0)
2	0 (0)
3	0 (0)
4	0 (0)
5	0 (0)
6	0 (0)
7	0 (0)
8	0 (0)
9	0 (0)
10	0 (0)
11	0 (0)
12	0 (0)
13	0 (0)

Reset Submit

Fig. 8 Output Monitoring configuration page

3.6. Email Notification Configuration

It is possible to configure the MBC20-Profinet to send out email notifications in the case of special events or periodically. This function is not active by default.

Changing the Settings

To activate this functionality, the parameters in the section “CONFIGURATION” / “Email Notification” of the integrated web server (see Fig. 9) have to be set appropriately.

Web-based Configuration

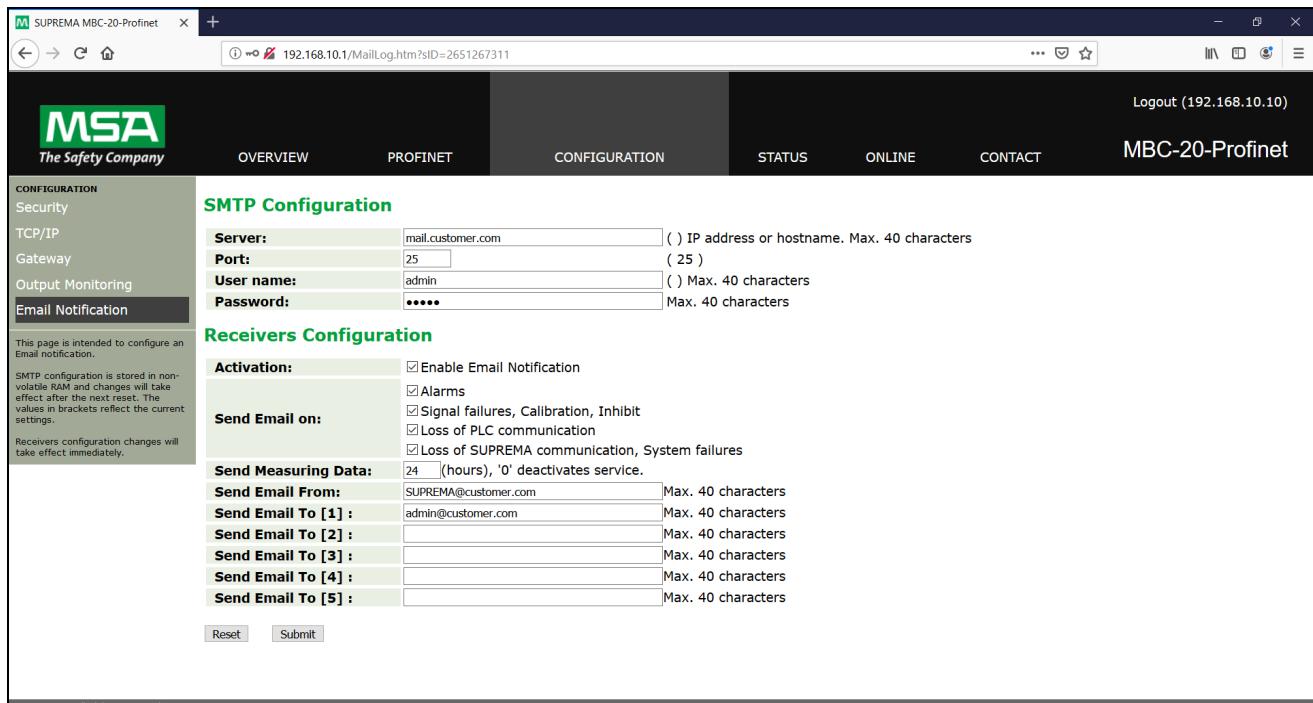


Fig. 9 Email Notification configuration page

Description of the SMTP Configuration Parameters

Server (empty by default): In this field the name or IP address of the email server to be used has to be specified. Only servers supporting the Simple Mail Transfer Protocol (SMTP) can be used. When the server is specified using a name, a valid name server (DNS) has to be specified (see chapter 3.3 „TCP/IP Configuration“).

Port (default is 25): In this field the port to be used to contact the mail server can be specified.

User name (empty by default): In this field the user name to be used to authenticate against the email server can be specified.

Password (empty by default): In this field the password to be used to authenticate against the email server can be specified. The currently valid password is not displayed for security reasons.

Description of the Receivers Configuration Parameters

Activation (unselected by default): With selecting/unselecting “Enable Email Notification”, the email notification service is enabled/disabled in general.

Send Email on / Alarms (unselected by default): If this entry is selected, an email will be sent in the case of a rising alarm.

Send Email on / Signal failures (unselected by default): If this entry is selected, an email will be sent in the case of a rising signal fault.

Send Email on / Loss of PLC communication (unselected by default): If this entry is selected, an email will be sent in the case of lost of communication to the SCADA system or PLC. The relevant timeout is 5 minutes.

Send Email on / Loss of SUPREMA communication (unselected by default): If this entry is selected, an email will be sent in the case of lost of communication between MBC20-Profinet and the rest of the SUPREMA system. The relevant timeout is 10 seconds with a start-up window of up to 20 minutes.

Send Measuring Data (default is 0): This entry specifies the time interval between two email notifications giving an overview of the currently measured values. The interval is specified in hours. When this value is set to 0, this service is inactive.

Send Email From (default is “SUPREMA”): This entry specifies an email address used for the “From” field of all emails created. This field identifies the sender of the mail and can be used as return address. It should be a valid email address.

Send Email To (default is “SUPREMA”): These entries specify email addresses used for the “To” field of all emails created. I. e. all emails will be sent to these addresses. It should be valid email addresses.

4. Installation of the Module

4.1. Installation of the MBC20-Profinet

Before installing the MBC20 in the rack, check the DIP switch settings (see chapter 2.3 “System Integration”). After that, the MBC20-Profinet can be installed in any rack and in the slots 6 to 15.

4.2. Installation of the MBT20

The slot with the MBC20-Profinet must have a MBT20 (Bus Terminal) module connected at the rear of the rack.

4.3. Installing Wiring

The Ethernet connection to be used for configuration and Profinet must be done on connector X4 (the RJ45 connector) of the MBT.

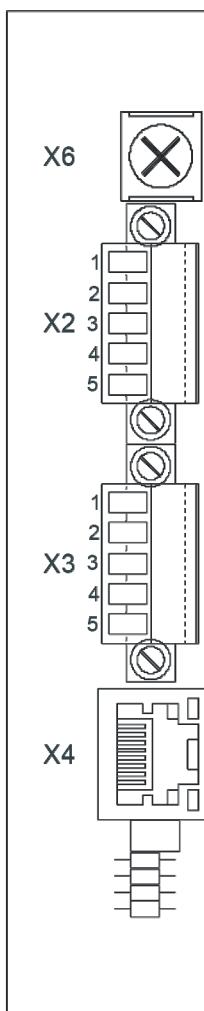


Fig. 10 MBT20 wiring

4.4. Configuring in a SUPREMATouch System (MCP20 Firmware 3.01.01)

The SUPREMA Manager software has to be used to set the configuration of a SUPREMA Touch system. The MBC20-Profinet will be added to the configuration using the special gateway fields. The ID to be selected is the ID of the slot the MBC20-Profinet is installed in.

4.5. Configuring in a SUPREMATouch System (MCP20 Firmware 3.01.02 and Later)

The SUPREMA Manager software has to be used to set the configuration of a SUPREMA Touch system. The MBC20-Profinet will be added to the configuration similar to all other modules. Depending on the firmware version of the MCP, the MBC20-Profinet may not be available for configuration. Configure a MBC20-Modbus instead in this case. Do not use the special gateway fields to achieve the full functionality of the module. These fields are only available for the backward compatibility to older gateways.

5. Data Model

5.1. Modules and Submodules

The following modules and submodules are supported by the MBC20-Profinet and defined in the GSDML file provided by MSA:

Measuring Point Data Module

This module is defined for each single measuring point and can therefore be selected for each individual measuring point as needed. It provides access to the data of the dedicated measuring point. The following optional submodules can be selected as needed:

Measuring Value Real + Compact State

Input Data	Output Data
4 bytes (Float32)	Measuring value
1 byte (8 bits)	1 st Alarm 2 nd Alarm 3 rd Alarm 4 th Alarm Calibration Signal Fail Inhibit Overflow

Measuring Value Int16 + Compact State

Input Data	Output Data
2 bytes (Integer16)	Measuring value Parameter: Scaling factor (Float32)
1 byte (8 bits)	1 st Alarm 2 nd Alarm 3 rd Alarm 4 th Alarm Calibration Signal Fail Inhibit Overflow

Measuring Value Real + Extended State

Input Data	Output Data
4 bytes (Float32)	Measuring value
1 byte	1 st Alarm Status
1 byte	2 nd Alarm Status
1 byte	3 rd Alarm Status
1 byte	4 th Alarm Status
1 byte	Inhibit Status
1 byte	Error Status
1 byte	Error Type
1 byte	Calibration State

Measuring Value Int16 + Extended State

Input Data	Output Data
2 bytes (Integer16)	Measuring value Parameter: Scaling factor (Float32)
1 byte	1 st Alarm Status
1 byte	2 nd Alarm Status
1 byte	3 rd Alarm Status
1 byte	4 th Alarm Status
1 byte	Inhibit Status
1 byte	Error Status
1 byte	Error Type
1 byte	Calibration State

Head ID

Input Data	Output Data
2 bytes (Unsigned16)	Head ID

Range ID

Input Data	Output Data
2 bytes (Unsigned16)	Range ID

Unit ID

Input Data	Output Data
2 bytes (Unsigned16)	Measuring Unit ID

Measuring Gas ID

Input Data	Output Data
2 bytes (Unsigned16)	Measuring Gas ID

Zero Gas ID

Input Data	Output Data
2 bytes (Unsigned16)	Zero Gas ID

Reference Gas ID

Input Data	Output Data
2 bytes (Unsigned16)	Reference Gas ID

Tag

Input Data	Output Data
20 bytes (10x Unsigned16)	Tag as Unicode-16 string

Measuring Point Data Module (indexed)

This module is defined once, but can be used multiple times as needed. It provides access to the data of a measuring point selected by the Measuring Point Index submodule. Beside this fixed index submodule, the same submodules as for the Measuring Point Data Module can be selected as needed.

Measuring Point Index (Fixed in Sub-Slot 1)

Input Data	Output Data
2 bytes (Unsigned16) ID of measuring point currently provided	2 bytes (Unsigned16) ID of requested measuring point

Relay Block Data Module

This module is defined for each single block of 40 relays and can therefore be selected for each individual block of relays as needed. It provides access to the status of the relays of the dedicated block. The following fixed submodule is used:

Relay Block Status

Input Data	Output Data
1 byte (8 bits) Status Relay 1 Status Relay 2 ... Status Relay 8	- - -
1 byte (8 bits) Status Relay 1 Status Relay 2 ... Status Relay 8	- - -
1 byte (8 bits) Status Relay 1 Status Relay 2 ... Status Relay 8	- - -
1 byte (8 bits) Status Relay 1 Status Relay 2 ... Status Relay 8	- - -
1 byte (8 bits) Status Relay 1 Status Relay 2 ... Status Relay 8	- - -

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System Status Module

This module provides access to the status of the system. The following optional submodules can be selected as needed:

System Status	
Input Data	Output Data
2 bytes (Unsigned16)	Last Received Measuring Point
2 bytes (16 bits)	SUPREMA Connection Offline Data used MGO 1 Data valid MGO 2 Data valid ... MGO 13 Data valid Last 2 bits unused
2 bytes (Unsigned16)	Last System Error
2 bytes (Unsigned16)	Last Erroneous Point
4 bytes (Unsigned32)	Number of received node guard requests
2 bytes (Unsigned16)	Number of Errors
2 bytes (16 bits)	CAN Bus A is primary CAN Bus B is primary Last 14 bits unused

System Supply and Temp Status	
Input Data	Output Data
1 byte (Unsigned8)	Internal Supply Status
1 byte (Unsigned8)	External Supply Status
1 byte (Unsigned8)	Battery Supply Status
1 byte (Unsigned8)	Temperature Status

5.2. Data Formats

Dimension

The value in the dimension byte has the following meaning:

Value	Dimension
1	ppm
2	ppm.m
3	% UEG
4	UEG m
5	vol.-%
6	% rel. h
7	°C
8	ppb
9	BIN
10	dB
200	<i>user defined</i>

Value	Dimension
201	<i>user defined</i>
202	<i>user defined</i>

Measuring Range

The index of the measuring range maps to the following values.

Value	Measuring range
1	0.3
2	0.5
3	1
4	2
5	5
6	10
7	20
8	30
9	50
10	100
11	200
12	300
13	500
14	600
15	1000
16	2000
17	0.1
18	3
19	25
20	3000
21	4000
22	5000
23	8000
24	10000
25	12000
26	104
27	120
200	<i>user defined</i>
201	<i>user defined</i>
202	<i>user defined</i>

6. Offline Status Values

Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
1	0.00	1	1	0
2	0.10	2	2	80
3	0.20	3	3	40
4	0.30	4	4	20
5	0.40	5	5	10
6	0.50	6	6	8
7	0.60	7	7	4
8	0.70	8	8	2
9	0.80	9	9	1
10	0.90	10	1	0
11	1.00	11	2	80
12	1.10	12	3	40
13	1.20	13	4	20
14	1.30	14	5	10
15	1.40	15	6	8
16	1.50	16	7	4
17	1.60	17	8	2
18	1.70	18	9	1
19	1.80	19	1	0
20	1.90	20	2	80
21	2.00	21	3	40
22	2.10	22	4	20
23	2.20	23	5	10
24	2.30	24	6	8
25	2.40	25	7	4
26	2.50	26	8	2
27	2.60	1	9	1
28	2.70	2	1	0
29	2.80	3	2	80
30	2.90	4	3	40
31	3.00	5	4	20
32	3.10	6	5	10
33	3.20	7	6	8
34	3.30	8	7	4
35	3.40	9	8	2
36	3.50	10	9	1
37	3.60	11	1	0
38	3.70	12	2	80
39	3.80	13	3	40
40	3.90	14	4	20
41	4.00	15	5	10

Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
42	4.10	16	6	8
43	4.20	17	7	4
44	4.30	18	8	2
45	4.40	19	9	1
46	4.50	20	1	0
47	4.60	21	2	80
48	4.70	22	3	40
49	4.80	23	4	20
50	4.90	24	5	10
51	5.00	25	6	8
52	5.10	26	7	4
53	5.20	1	8	2
54	5.30	2	9	1
55	5.40	3	1	0
56	5.50	4	2	80
57	5.60	5	3	40
58	5.70	6	4	20
59	5.80	7	5	10
60	5.90	8	6	8
61	6.00	9	7	4
62	6.10	10	8	2
63	6.20	11	9	1
64	6.30	12	1	0
65	6.40	13	2	80
66	6.50	14	3	40
67	6.60	15	4	20
68	6.70	16	5	10
69	6.80	17	6	8
70	6.90	18	7	4
71	7.00	19	8	2
72	7.10	20	9	1
73	7.20	21	1	0
74	7.30	22	2	80
75	7.40	23	3	40
76	7.50	24	4	20
77	7.60	25	5	10
78	7.70	26	6	8
79	7.80	1	7	4
80	7.90	2	8	2
81	8.00	3	9	1
82	8.10	4	1	0
83	8.20	5	2	80

Offline Status Values

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Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
84	8.30	6	3	40
85	8.40	7	4	20
86	8.50	8	5	10
87	8.60	9	6	8
88	8.70	10	7	4
89	8.80	11	8	2
90	8.90	12	9	1
91	9.00	13	1	0
92	9.10	14	2	80
93	9.20	15	3	40
94	9.30	16	4	20
95	9.40	17	5	10
96	9.50	18	6	8
97	9.60	19	7	4
98	9.70	20	8	2
99	9.80	21	9	1
100	9.90	22	1	0
101	10.00	23	2	80
102	10.10	24	3	40
103	10.20	25	4	20
104	10.30	26	5	10
105	10.40	1	6	8
106	10.50	2	7	4
107	10.60	3	8	2
108	10.70	4	9	1
109	10.80	5	1	0
110	10.90	6	2	80
111	11.00	7	3	40
112	11.10	8	4	20
113	11.20	9	5	10
114	11.30	10	6	8
115	11.40	11	7	4
116	11.50	12	8	2
117	11.60	13	9	1
118	11.70	14	1	0
119	11.80	15	2	80
120	11.90	16	3	40
121	12.00	17	4	20
122	12.10	18	5	10
123	12.20	19	6	8
124	12.30	20	7	4
125	12.40	21	8	2

Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
126	12.50	22	9	1
127	12.60	23	1	0
128	12.70	24	2	80
129	12.80	25	3	40
130	12.90	26	4	20
131	13.00	1	5	10
132	13.10	2	6	8
133	13.20	3	7	4
134	13.30	4	8	2
135	13.40	5	9	1
136	13.50	6	1	0
137	13.60	7	2	80
138	13.70	8	3	40
139	13.80	9	4	20
140	13.90	10	5	10
141	14.00	11	6	8
142	14.10	12	7	4
143	14.20	13	8	2
144	14.30	14	9	1
145	14.40	15	1	0
146	14.50	16	2	80
147	14.60	17	3	40
148	14.70	18	4	20
149	14.80	19	5	10
150	14.90	20	6	8
151	15.00	21	7	4
152	15.10	22	8	2
153	15.20	23	9	1
154	15.30	24	1	0
155	15.40	25	2	80
156	15.50	26	3	40
157	15.60	1	4	20
158	15.70	2	5	10
159	15.80	3	6	8
160	15.90	4	7	4
161	16.00	5	8	2
162	16.10	6	9	1
163	16.20	7	1	0
164	16.30	8	2	80
165	16.40	9	3	40
166	16.50	10	4	20
167	16.60	11	5	10

Offline Status Values

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Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
168	16.70	12	6	8
169	16.80	13	7	4
170	16.90	14	8	2
171	17.00	15	9	1
172	17.10	16	1	0
173	17.20	17	2	80
174	17.30	18	3	40
175	17.40	19	4	20
176	17.50	20	5	10
177	17.60	21	6	8
178	17.70	22	7	4
179	17.80	23	8	2
180	17.90	24	9	1
181	18.00	25	1	0
182	18.10	26	2	80
183	18.20	1	3	40
184	18.30	2	4	20
185	18.40	3	5	10
186	18.50	4	6	8
187	18.60	5	7	4
188	18.70	6	8	2
189	18.80	7	9	1
190	18.90	8	1	0
191	19.00	9	2	80
192	19.10	10	3	40
193	19.20	11	4	20
194	19.30	12	5	10
195	19.40	13	6	8
196	19.50	14	7	4
197	19.60	15	8	2
198	19.70	16	9	1
199	19.80	17	1	0
200	19.90	18	2	80
201	20.00	19	3	40
202	20.10	20	4	20
203	20.20	21	5	10
204	20.30	22	6	8
205	20.40	23	7	4
206	20.50	24	8	2
207	20.60	25	9	1
208	20.70	26	1	0
209	20.80	1	2	80

Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
210	20.90	2	3	40
211	21.00	3	4	20
212	21.10	4	5	10
213	21.20	5	6	8
214	21.30	6	7	4
215	21.40	7	8	2
216	21.50	8	9	1
217	21.60	9	1	0
218	21.70	10	2	80
219	21.80	11	3	40
220	21.90	12	4	20
221	22.00	13	5	10
222	22.10	14	6	8
223	22.20	15	7	4
224	22.30	16	8	2
225	22.40	17	9	1
226	22.50	18	1	0
227	22.60	19	2	80
228	22.70	20	3	40
229	22.80	21	4	20
230	22.90	22	5	10
231	23.00	23	6	8
232	23.10	24	7	4
233	23.20	25	8	2
234	23.30	26	9	1
235	23.40	1	1	0
236	23.50	2	2	80
237	23.60	3	3	40
238	23.70	4	4	20
239	23.80	5	5	10
240	23.90	6	6	8
241	24.00	7	7	4
242	24.10	8	8	2
243	24.20	9	9	1
244	24.30	10	1	0
245	24.40	11	2	80
246	24.50	12	3	40
247	24.60	13	4	20
248	24.70	14	5	10
249	24.80	15	6	8
250	24.90	16	7	4
251	25.00	17	8	2

Offline Status Values

Measuring point	Measuring value	Measuring range ID	Dimension ID	Status
252	25.10	18	9	1
253	25.20	19	1	0
254	25.30	20	2	80
255	25.40	21	3	40
256	25.50	22	4	20

7. Troubleshooting

Issue	Possible solutions
SUPREMA Touch indicates system failure.	<ul style="list-style-type: none"> ▪ Check whether the MBC20-Profinet is configured for the right slot. Check SUPREMA Manager Configuration (see chapter 4.4 “Configuring in a SUPREMATouch System (MCP20 Firmware 3.01.01)”). ▪ Check whether the right CAN-bus is selected. ▪ Check DIP switch configuration (see chapter 2.3 “System Integration”). ▪ Check whether DIP switch configuration is right. <ul style="list-style-type: none"> ▪ Except DIP switch for CAN-bus selection all DIP switches have to be set to OFF (see chapter 2.3 “System Integration”). ▪ Check whether the MBC20-Profinet is plugged correctly. <ul style="list-style-type: none"> ▪ Unplug the module, then try to push module into the right slot until you notice a resistance. ▪ RAM / ROM / FLASH damaged? <ul style="list-style-type: none"> ▪ Check Logbook entries at MDO, call MSA. ▪ Call MSA for assistance.
Profinet Master (SCADA system or PLC) doesn't get any data	<ul style="list-style-type: none"> ▪ Check whether the IP settings are correct. <ul style="list-style-type: none"> ▪ Compare the settings of the MBC (see chapter 3.3 “TCP/IP Configuration”) with the settings of the Profinet master; they must match. ▪ Check the wiring between master and MBC/MBT (see chapter 4.3 “Installing Wiring”). ▪ Check whether the MBC has a connection to the SUPREMA (see point “SUPREMA connection” on the “OVERVIEW” page of the internal web server). <ul style="list-style-type: none"> ▪ If not, check the wiring of the CAN bus. ▪ Check whether it is possible to access the MBC20 with an alternative system; if it is possible see the manual of the master for further troubleshooting. ▪ Call MSA for assistance.

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For local MSA contacts, please visit us at **MSAsafety.com**