

Wide Area Automation Demo Program

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Produced by:

Name	Company
S. Bättig	SCB

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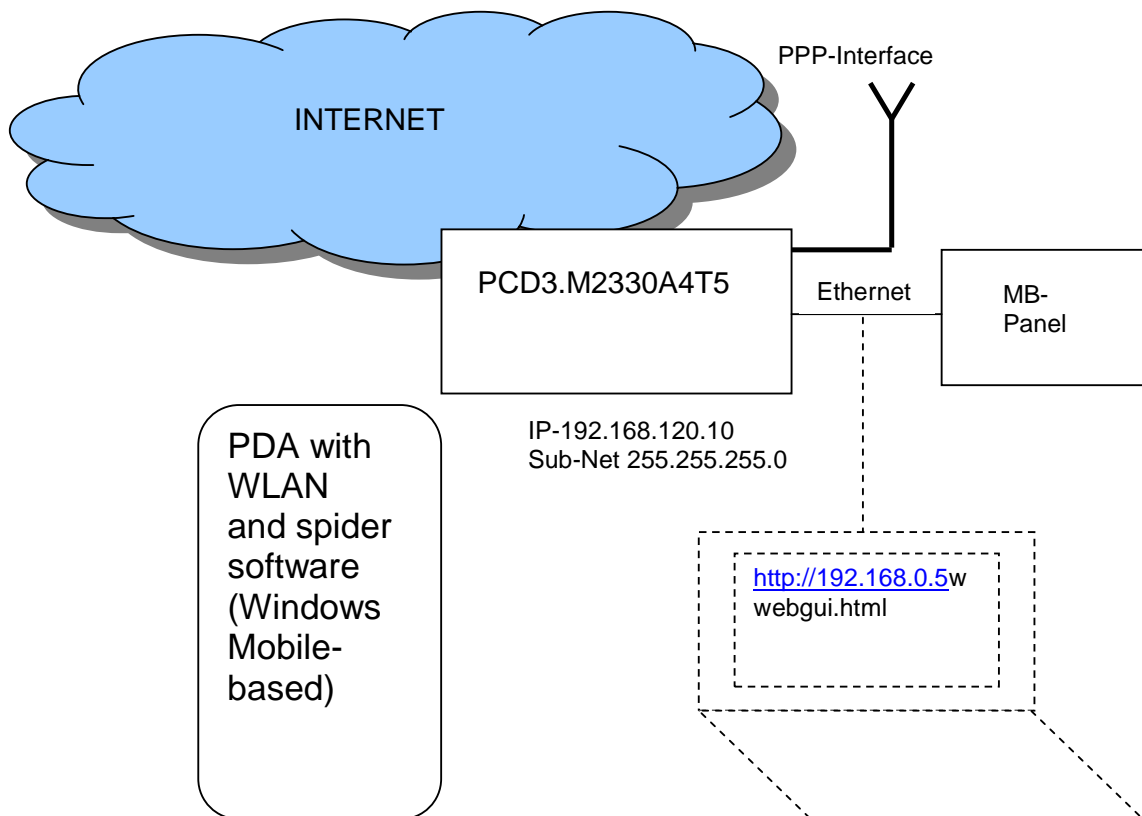
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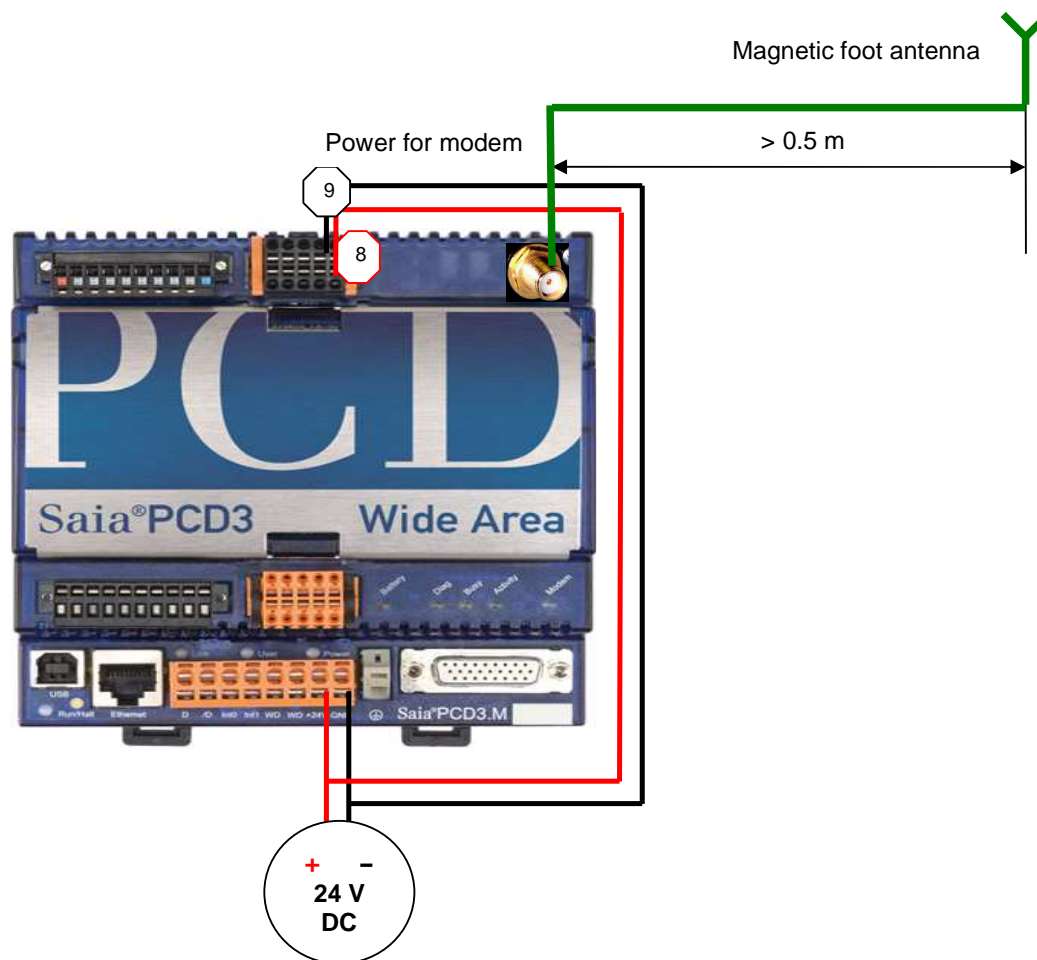
1 What can you do with this demo?

This Wide Area Automation configuration is suitable for demonstrating the most important functions of the PCD3 Wide Area Controller. The web project running on the PCD3.WAC can be operated either from the MB panel connected via Ethernet or from the Internet using a web browser with Java JRE installed. The MB panel can also be used. If no MB panel is present, any laptop with a web browser and Java JRE can be used.

1.1 Overview diagram:



1.2 Cabling: power supply, antenna and temperature sensor:



2 Materials and subscriptions required:

- PCD3 WAC with external antenna (PCD3.M2330A4T5)
- PCD3.C200 + PCD3.S100 with cable or connector.
- 1 SIM card with the relevant services (see PCD3.WAC Networking Guide, sections 5.4 and 4.1)
- 24 V power supply (approx. 20 W for PCD3.M2330A4T5)
- SD card (PCD7.R-SD256 or PCD7.R-SD512)
- MB panel (optional)
- ADSL line to connect the client. Also highly recommended for testing purposes

3 Installation instructions

3.1 PCD basic configuration

- 1) Connect 24 V supply to the PCD (see 1.2) and to the MB panel (where applicable)
Connect Ni sensor to analogue input 0. Analogue input 0 must be set to temperature (resistance) measurement using DIP switches positioned under the lid of the housing.
- 2) With PG 2.0.xx: run a 'Restore' of the project from the zip file.
The project is available on the Product Launch page.
- 3) Upload the hardware configuration with the PG5 hardware configurator.
- 4) Adjust the mail server settings in the PG5 project
- 5) Run the Build process and then download the user program to the control.
- 6) Power-off/on of the device.
- 7) Copy all web project files (separate zip archive) with Filezilla into the Webpages directory on the SD card.
- 8) Copy the file alphapad.teq into the Webpages directory on the Intflash. This allows the telephone number and the e-mail address to be changed with the MB panel (only necessary where an MB panel is present)

3.2 Configuration: APN, e-mail provider, SMS gateway provider

In order to start using the device with GPRS communication, you must enter the correct APN for GPRS in the file pppconfig.txt:
 depending on the provider, you may also need to configure a username and password. For standard APN access without a public IP address, it is often sufficient to leave the parameters RemoteAuthUsername and RemoteAuthPasswd blank. You should check the details of the special APNs with public addresses with the provider concerned.

Example of a pppconfig.txt file for the provider **ORANGE**:

PPP Protocol	
Port Number PPP	131
PPP Enabled	Yes
Connection Type	Client
Local IP Address	0.0.0.0
Remote IP Address	0.0.0.0
PPP Restarted On Disconnection	Yes
Immediate Start Enabled	Yes
Use Modem	Yes
Use Default Script	No
Script Modem, Line 1	ATH\r;OK;0;1;0;5
Script Modem, Line 2	ATZ\r;OK;0;2;0;5
Script Modem, Line 3	AT&D2\r;OK;0;3;0;5
Script Modem, Line 4	AT\$MSCL5=10\r;OK;0;4;0;5
Script Modem, Line 5	AT+CGDCONT=1,"IP","gprs.swisscom.ch"\r;OK;0;5;0;5
Script Modem, Line 6	ATDT*99***1\#\r;CONNECT;0;-1;0;60
Script Modem, Line 7	0;NO CARRIER;0;-1;-1;0
Script Modem, Line 8	0;NO DIAL TONE;0;-1;-1;0
Script Modem, Line 9	0;0;0;0;0;0
Script Modem, Line 10	0;0;0;0;0;0
+ Advanced Parameters	Yes
Start Delay	5
Default IP Route	Yes
Baud Rate	115200 Baud
Remote User Name	133
Remote Password	133
Peer Authentication	No
IP Forwarding Enabled	No
Echo Request Enabled	No
Echo Interval Time [s]	5

GPRS APN

Username

Password

The highlighted configuration parameters must be modified for the provider concerned. You can use the information of the networking guide for some providers.

3.3 Mail provider

In order to use the e-mail function of the WAC demo, you need a mail server account. Strictly speaking, you only need the server that you use to send e-mails. This server is often called an SMTP server, as the protocol used is the **S**imple **M**ail **T**ransfer **P**rotocol.

The following options are supported:

- No authentication (this option is hardly ever found on mail servers that can be accessed from anywhere on the Internet)
- With authentication: PCD supports the **Auth Login** and **Auth plain processes**
- The server port can be set to any value. A common parameter is **25**; **587** is often used also.

Note: No SSL or TLS connection (with encryption) is supported. Mail servers that only accept Auth Login with MD5 Cram encryption are not suitable either. For example, GMAIL uses exclusively SSL and so cannot be used as an SMTP server for SAIA PCDs.

E-mail settings	GMX.NET	YAHOO.COM	BLUEWIN.CH
Server	213.165.64.20 (mail.gmx.net)	69.147.102.58 (smtp.yahoo.com)	195.186.19.155 (mail.bluewin.ch)
User	Account number or xyz@gmx.net	xyz	xyz
Password	e.g. FgdKm942	e.g. FgdKm942	e.g. FgdKm942
Mail from	xyz@gmx.net	xyz@yahoo.com	xyz@bluewin.ch
Mail server port	25 / 587	25 / 587	587
Authentication Auth plain / auth login	required	required	required

- Note: Do not define any passwords containing @ or \$. If you already have a login and username and these characters appear, you can use them if you repeat the characters once each in the PG5 symbols, e.g. @@ or \$\$\$. There may also be problems with certain e-mail addresses. With the providers described above, no problems should arise.

We have tested the providers Yahoo and GMX at Saia.

Yahoo and GMX are providers who offer both fee-labile and free accounts. With very little effort, any user can set up his own test account.

You can create a GMX account from this link:

http://service.gmx.net/de/cgi/g.fcgi/products/mail/freemail/classic?mc=gmx_hp@nav_produkte.gmx_produkte@freemail

Once you have created such an account, you still need to note one configuration detail for GMX (see section 4.6.2

Configuration for a GMX e-mail account

The providers GMX and Yahoo (Freemail variants) are not recommended for customer projects. With Yahoo, I have found that e-mails are sometimes delivered up to 20 minutes late. This is particularly aggravating if you want to use an SMS function based on e-mail. The SMS will also be delayed by this time.

3.4 SMS (*third-party*) provider:

To send SMS messages, the configuration is set up for the Swiss provider ECALL.CH.

If you want to test this function but do not have your own provider/account, we can enter your e-mail sender's address under our account. You can then send a few messages through this account.

For a trade fair or even a pilot project, it is best to find this kind of service in your own country and set up an account there.

The principle is simple: the provider has a particular e-mail address, such as `message@provider.xyz`. When you send an e-mail to this address, it is routed to the mobile phone number given in the 'Subject' line. As a simple authentication check, you still need to configure the sender's e-mail address within the account, with which the message is to be tagged.

For the SMS function to be used, it is essential for the access to the SMTP server to be configured correctly. The 'Send e-mail' function must work properly.

If you want to be permissioned for our test account, you can contact stephan.baettig@saia-burgess.com or claudio.alfonsi@saia-burgess.com.

4 Menu navigation / functions

4.1 Home page

The project is launched by calling

<http://IP-Adresse/webgui.html>.

First of all, a menu will appear for you to select the various functions.

If the project is being loaded for the first time, this may take around 2 minutes. The file `lmasterxx.jar` and several `teq` files have to be loaded. With Java caching the files, the next start-up will run a lot faster.

With the new web server, available with firmware version > 1.14.x, the setting "Leave temporary files on the computer" must be enabled on the Java control panel (Temporary Internet Files -> Settings).



4.2 “S100” option



The Output 0 and Output 1 buttons can be used to send SMS and Emails.

The Inputs 4 to 7 are Mapped to the outputs 20 to 23 and the analogue Inputs channels 0 and 1 are mapped to the output channels 0 and 1.

4.3 “E-mail” option

From this page, you can send e-mails to any address.

You can either send the message as plain text or use the HTML text setting. If you select plain text, the addressee will receive a message in the default font with line breaks.

With the HTML text setting, the message will be sent in various font sizes, and some words will be highlighted in colour.

The e-mail may be sent with or without attachments.

The attachment may be an image to be displayed on the PCD3.WAC.

The message content will include the following information:

- Inputs 0-7
- Outputs 0 and 1
- Date and time
- IP address (for plain text only)

Empfänger: wac@pcd-demo.ch

Betreff: Nachricht vom PCD3.M2330A4T5

Nachricht: **STATUS PCD3.M2330A4T5**
Demo-E-Mail, gesendet vom SAIA WAC

SPS-Daten:

Datum/Uhrzeit	10-04-08 10:04:09
Digitale Eingänge I0-7	00010101
Digitale Ausgänge O16-23	01111111
Analogeingang CH0	4652
Analogeingang CH1	7409

Format: ☐ Plain Text ☒ HTML-Text

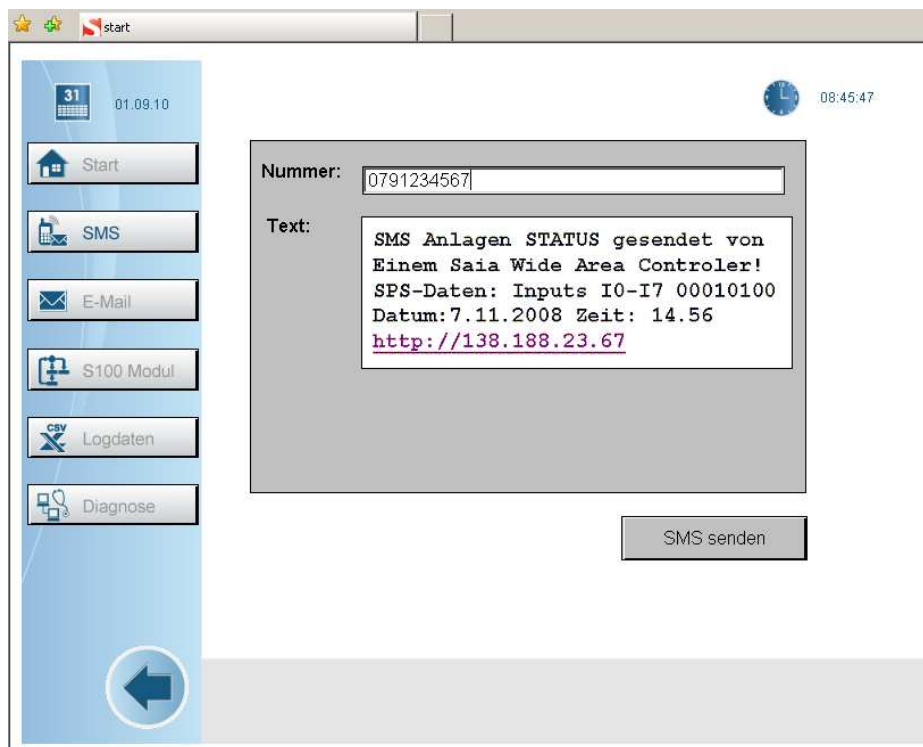
Internet Email oder lokaler Versand: ☒ Internet ☐ Lokaler Mailserver

E-Mail senden

A web page with the 'plain text' setting is shown on the left; on the right, the message text where the 'HTML text' option has been selected.

The display in the message field is not the actual message but a GIF file that looks the same.

4.4 “Send SMS message” option

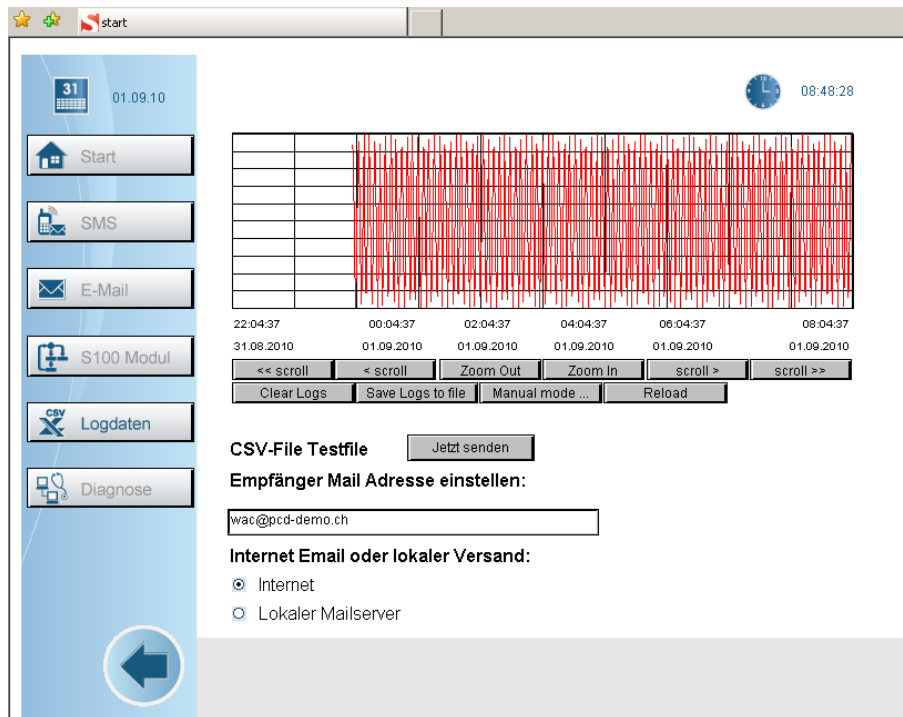


In the Edit textbox, you can edit the telephone number. In this example, the fictitious number 0049123456789 has been configured. The “Send SMS now” button is used to send the message.

The following variable elements are output as the message content: the state of the two outputs, the date and the IP address.

Please note that every time a SMS is sent PPP will be terminated and after restarting PPP will get a new IP address.

4.5 “Online trend view” option



The graph shows the current temperature curve. It is advisable to use a small Ni 1000 sensor with a low mass. It is possible to heat up the sensor and observe the temperature increase spontaneously. At the bottom of the page, the current temperature is displayed as an alphanumeric value.

4.6 Diagnose

31

01.09.10

Start

SMS

E-Mail

S100 Modul

Logdaten

Diagnose

08:44:15

GPRS Verbindungsparameter

PPP Status	PPP_STATE_STARTED
PPP Verbindung	ESTABLISHED
IP-Verbindungszustand (PPP)	IPCP CONFIGURED
PPP Ereignisse	0
Aktuelle IP_Adresse (PPP)	10.143.201.85

GSM Status Infos (Online)

Provider	Swisscom
Betreiber Code	22801
Feldstärke	20 [0..31]
Registrierung	Im Netz registriert
Registrierungs Statuscode	1

IP Lifecheck

Lifecheck Status	aktiv
Zeitpunkt des letzten Lifechecks	08:39:21
Lifecheck Anzahl Fehler	0
Zeitpunkt der letzten Neuinitialisierung	01.09.10 08:27:52

Annex

4.6.1 GPRS operator information

Please use the information of the networking guide.

The following link provides information on the major telecommunications operators in each country:
http://www.nav4all.com/site2/www.nav4all.com/ger/gprs_listcountries.php

Note: There is no guarantee that these details are correct. In case of doubt, it is always better to obtain the latest information directly from the relevant operator.

You should find out the exact communication tariffs beforehand. If, for example, you have a contract under which you have to pay EUR 0.50 per 10 kB, you will incur costs of EUR 250 to transfer just 50 MB of data.

Austria:

4.6.2 Configuration for a GMX e-mail account

GMX - Mein GMX - Mozilla Firefox

http://service.gmx.net/de/cgi/g.fcgi/config/mail/security?sid=babhdef.1229936612.31158.uhbvpd6bfg.74.dee

Meistbesuchte Seiten | Startseite | Wireless-Router | SIM SWISSC 60.80 | SIM SWISSC 60.79 | http://192.168.0.6/p... | http://192.168.0.6/p...

SMTP-Auth - Wikipedia | Base64 Encoder / Decoder - GTools, fr... | GMX - Mein GMX

Hilfe

GMX PRODUKTE THEMEN SHOPPING ENTERTAINMENT MEIN GMX Logout

MEIN GMX

E-Mail

E-Mail schreiben

E-Card schreiben

Posteingang

Ordnerwahl

Virenschutz

E-Mail-Adressen

Push E-Mail

IMAP

Filterregeln

Optionen

Allgemein

Abwesenheit

Sicherheit

Ordnerverwaltung

Sammeldienst

Signaturen

Spamschutz

GMX Mobile Mail

Mail Info Service

Mobile Mail **NEU**

MultiMessenger

SMS und MMS

Fax und Voice

Adressbuch

Organizer

MediaCenter

DSL-Telefonie

Mein Account

Sonstige Optionen

Internet-Zugang

HomeBanking **NEU**

Sie sind hier: [GMX Homepage](#) → [Mein GMX](#) → [E-Mail](#) → [Optionen](#) → [Sicherheit](#)

SICHERHEIT [Hilfe](#)

SMTP-Sicherheit

Das "Simple Mail Transfer Protocol" (SMTP) kommt immer dann zum Einsatz, wenn Sie mit einem externen E-Mail-Programm (Outlook, Eudora...) arbeiten und neue E-Mails zum weiteren Versand an GMX übertragen. Die meisten Programme unterstützen mittlerweile SMTP mit Login (bei GMX: Kundennummer plus Passwort), die entsprechenden Einstellungen finden Sie in der Konfiguration des ausgehenden Servers in Ihrer Software.

☒ SMTP mit Login (maximale Sicherheit)

Beim Versand von E-Mails wird eine Authentifizierung (Login) durchgeführt, entsprechend dem Standard RFC-2554. Geben Sie in Ihr E-Mail-Programm Ihre GMX-Kundennummer und Ihr GMX-Passwort ein. Diese Einstellung ist für die meisten Fälle zu empfehlen! [mehr](#)

☐ SMTP after POP mit IP-Check

Wenn Ihr E-Mail-Programm SMTP-Login nicht unterstützt, dann sollten Sie diese Stufe verwenden. Sie müssen vor dem Versand von E-Mails innerhalb der letzten drei Minuten mindestens einmal Mails abgerufen haben. Ihre IP-Adresse darf sich dazwischen nicht verändern. [mehr](#)

POP3-Sicherheit

Wenn Ihr E-Mail-Programm SSL-Verschlüsselung für POP3-Abrufe unterstützt, dann können Sie Ihre E-Mails beim Abholen vom GMX-Server verschlüsselt übertragen. Hierzu sind bei GMX keine besonderen Einstellungen nötig. Es genügt, wenn Sie die entsprechende Option in Ihrer Software aktivieren.

SMTP-Sicherheit

Viele moderne E-Mail-Programme unterstützen SSL-gesichertes Senden von ausgehenden Mails via SMTP. GMX bietet hierzu sowohl das gebräuchliche "SSL over SMTP" (SSMTP) über Port 465 als auch StartTLS über Port 25. Diese Features stehen in allen Tarifen kostenlos zur Verfügung.

In order to send e-mails from a PCD control, you need to check that the following setting is correct. Under E-Mail -> Options -> SMTP Security, **SMTP with Login** must be set.