



Commissioning Instructions

WinPQ Evaluation Software and PQI-D/PQI-DA Measuring Systems WinPQ Para Express (only chapter 9)



Software WinPQ



Notes on the commissioning instructions:

After installing the **WinPQ** software and the **MySQL** database in sections 2 and 3 of the instructions, select one of the chapters highlighted in colour for data communication between the software and the measuring devices.

The selected section (e.g. 6. Device Connection via TCP/IP) describes the required operating steps for the software and hardware. Any other, alternative chapters for connecting a device can be skipped.

If different communication paths are to be operated in parallel, work through all points of the respective data connections used (e.g. MODEM and TCP/IP).

WinPQ Para Express



Additional to WinPQ there is a small software WinPQ Para Express available only for setup the parameters in PQI-D and PQI-DA. This software is free of charge and available on <u>www.a-eberle.de</u>.

All settings for the hardware could be made with this software. It is possible to check with online data the correct connection of the device. It is possible to start this SW directly from an USB-stick.

Please use all information from chapter 9.

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Content

1.	Introduction6
2.	Installation of the Software7
2.1	Index of the used TCP/IP-Ports7
2.2	Installation of the Database (File Server)8
2.3	Installation of a Client (Further Evaluation Computer)8
2.4	Installation Procedure
3.	The WinPQ Control Center: The Program PQStart15
3.1	Representation of PQI-D Devices in PQStart15
3.1.1	Create new stations, groups and tabs15
3.1.2	Changing the device name and ID number17
3.1.3	Alerting – Optically, Acoustically, or by E-Mail17
3.1.4	Hiding of Program Functions18
3.2	Connecting an additional evaluation computer to the database19
3.2.1	Connection of a client to the database19
3.2.2	Connection of an additional evaluation computer for online data and parameterization21
4.	Settings in WinPQ – PQ Admin
4.1	Tab: SQL
4.2	Tab: User
4.3	User with limited rights24
5.	Connection of a device directly with RS23226
5.1	Setting the device PQI-D or DA
5.2	Settings of the PQRS232Server
5.3	Settings in the "PQManager"27
6.	Device Connection via TCP/IP
6.1	Setting the interface of the device29
6.1.1	TCP/IP Connection through W&T COM-Server
6.2	Settings of the "PQRS232Server"
6.3	Settings in the "PQManager"
7.	Device Connection via Dial-Up MODEM35
7.1	Setting the device
7.1.1	Setting the interface of the PQI-D35
7.2	Setting the MODEM on the PQI-D side
7.3	Setting the Remote MODEM
7.4	Settings of the "RS232Server"

7.5	Configuration of the WinPQ Software	39
8.	The WinPQ Management Programs in Continuous Operation	40
8.1	Windows Task Scheduler	40
8.2	The Management Programs in Continuous Operation	41
8.3	Setting PQManager to Continuous Operation:	41
8.4	Setting the PQRS232Server to Continuous Operation	42
8.5	Setting PQRvReport to Continuous Operation:	42
9.	Setup and parameterization – PQI-D/DA	42
9.1	Setup with PQ Para Express	42
9.2	Setup with WinPQ	43
9.3	ID, LAN, Time	45
9.3.1	Time synchronization	45
9.3.2	ECL commands	46
9.3.3	ELAN structure	47
9.4	Thresholds, connection, IO	47
9.4.1	Special parameter	48
9.4.2	EN50160 thresholds	49
9.4.3	Transnostic	50
9.4.4	Option M94/M95 – analogue output	51
9.4.5	Option M97/M98 analogue inputs	52
9.4.6	Binary inputs	53
9.4.7	Messages on Relays and LED's	54
9.5	Measuring parameter / trigger	55
9.5.1	Status of LED's, relays and binary inputs	56
9.5.2	Online panel	56
9.5.3	Vector diagram	56
9.5.4	Parameterization of continues classes	57
9.5.5	Parameterisation of disturbance recorder	59
9.5.6	Parameterisation for disturbance recorder	60
9.5.7	Parameterization of harmonic recorder RecC	61
9.5.8	Parameterisation of RecS	62
9.5.9	Parameterization of power quality events	63
10.	Time synchronization	63
10.1	Time synchronisation with DCF77 time clock	63
10.2	Time synchronisation with GPS time clock	64
10.3	Interface settings for time clock connected to RS232	64



10 /	Interface settings for the CDS clock connected at the time bus	65
10.4	interface settings for the GPS clock connected at the time bus	05
10.5	Setting up the synchronization with E-LAN connection	65
11.	Firmware update PQI-D and PQI-DA	67
12.	Setting of the PQ-Mail	71
13.	Automatically print or e-mail order	72
13. 13.1	Automatically print or e-mail order Automatically generated disturbance reports	 72 72
13. 13.1 13.2	Automatically print or e-mail order Automatically generated disturbance reports Automatic power quality reports	72 72 73

1. Introduction

The **WinPQ** software can be used to manage a large number of pre-installed PQI-Ds/DAs. The devices can communicate via different communication paths with **WinPQ**. The high degree of system flexibility, however, requires a certain degree of care when installing the software.

The overview graphic on the following page shows a situation with three computers and indicates which software module must be installed on which computer. Of course, the overhead is reduced if the application runs only on a single computer.



Remark on the excessive use of the word "Server":

File server: Computer on which the "MySQL" database runs and data are stored.

RS232Server: Part of the "**WinPQ**" software program which handles communication of the individual **WinPQ** programs with the devices.



MySQL server or database server: **MySQL** is an "SQL server", i.e. database software for managing large amounts of data. **MySQL** runs on the file server.

COM server: Hardware, e.g. from W&T. This is an adaptor between RS232 and TCP/IP, which is used whenever PQI-Ds are to be connected via a network.

The **REGSys** devices "**REG-PE**" and "**REG-P**" (control system connection) also have this functionality.

The term "server" is avoided in these instructions. The respective term from this list is used instead. Thus it is always clear which server is meant.

2. Installation of the Software

The **WinPQ** software package manly comprises two components: the SQL server and the visualisation software. A complete installation only needs to be carried out on the file server. Only the **WinPQ** visualisation software without database needs to be installed on the control station and connection PC.

2.1 Index of the used TCP/IP-Ports

The following table shows a list of all TCP/IP-Ports used in this System. Depending from your system configuration and the hardware the ports can be different.

Programm	Zweck	Server/ Client	Vorschlag	Kommunikation mit	Änderung
MySQL (service)	Communication with MySQL- database server	Server	3306	PQManager, PQVisu, PQStart, PQReport	
RS232Server (service)	Remote Parametrization (Changing RS232- Parameter)	Server	8000	Telnet	INI-File
RS232Server (service)	Access RS232-Ports	Server	1701, 1702 usw.	PQManager, PQPara	INI-File, PQStart
PQReport, PQVisu, PQStart	Read and visualize of MySQL-data	Client	3306	MySQL-service	
PQPara	Read and change of PQI-D setup	Client	1701 usw. 8000 …	RS232Server WuT-COM-Server	INI-File
PQManager	Transfers data from E-LAN Into SQL-database	Client Client	1700 3306	RS232-/COM-Server MySQL-service	INI-File
WuT-COM	COM-Server- parametrization Communication to E-LAN	Client Client	1111 8000 8888	Telnet PQManager, PQPara Software-COM-Server- Reset	Fix COM-SVR
Remote Desk- top RDP	Access via "Remote Desk- top" (MS- Windows ©)		3389	Remote access via oper- ating system abilities	

Overview of program components

2.2 Installation of the Database (File Server)

Installation of the complete package on the file server.

Proceed as described in section 2.3 of these instructions.

Note down the IP address or the BIOS name of the file server.

In some circumstances, the Windows command "IPCONFIG" may be useful.

2.3 Installation of a Client (Further Evaluation Computer)

When installing an additional evaluation computer without a database, the client accesses the database on the file server (alternatively it's possible to transfer the '..\winpq' directory by Copy & Paste to the next computer). Proceed as described in the next section of these instructions. Activate the option ,**Continue without installation of MySQL-Database**' in the dialog below.

🍌 C:\Program Files (x86)\WinPQ\DOC\WinPQ-Setup_EN.RTF
Select the folder for WinPQ data
Installation of MySQL database Selection WinPQ-data-folder
2,1 Installation of he MySQL-database-server on this PC
2.2.1 Optional selection of a different folder for SQL database data
2.2.2 Installation and start of the MySQL-service (establishes PQ user accounts)
2,3,1 Transfer the power quality DEMO data
2,3,2 Continue without Power-Quality-Demo-Data
 Continue without installation of MySQL database To continue with MySQL-installation read and confirm the MySQL-license agreement.
2. Installation und setup of the MySQL-Database-Server:
You can skip this page by button 'Installation without MySQL', if you work with another database-server (ORACLE or MS-SQL) or if your database server should run on another machine.
 2.1 The compressed MySQL-Program-File will be unzipped to folder \WinPQ\MySQL. 2.2 You can select another folder for database data (e.g. a lager hard disc) by option. 2.3 The MySQL service will be installed, started and PQ-Users will be established.

Main menu of the installation screen

2.4 Installation Procedure

The file WinPQ.exe is supplied on the installation CD. It is a self-extracting installation file, which is unzipped and started by double-clicking on it (or by selecting it and pressing ENTER). First, the usual start screen form is displayed. If no license number or an invalid license number is entered three times in a row, the software can be installed and used as a **DEMO** version. This version is restricted, access to real PQI-D stations is not possible.



🔏 WinPQ - InstallAware Wizard		🎄 WinPQ - InstallAware Wizard
₫, ₩	Velcome to the InstallAware Wizard for VinPQ	License Agreement Please carefully read the following license agreement.
Th Vit	ne InstallAware Wizard will install WinPQ on your computer. ARNING: This program is protected by copyright law and ternational treaties.	This is the wording of the end-user license agreement for all users of WinPQ. It is included as RTF file with the program files and must be acknowledged during installation. A negative confirmation will cancel the installation. The text of the license agreement is also included in the Help file. End-user license agreement for WinPQ and WinPQ demo version Important: Please read carefully prior to installing the software!
То	o continue, dick Next.	I accept the terms of the license agreement InstallAware <back< td=""> Next ></back<>
First you find the usua	al welcome dialog.	You should then read the license agreement carefully and accept it.

🔏 WinPQ - InstallAware Wizard	_ 🗆 🗵	🛦 WinPQ - InstallAware Wizard
Important Information Please carefully read the following program information.	5	Customer Registration Please enter information on yourself.
Installation a) Start of Installation To start the installation of WinPQ, insert the WinPQ installation CD in y ROM drive. The WinPQ installation program starts automatically if the Autorate function is activated.	/our CD-	User Name: JG Organization: IBG
If this is not the case, go to the parent directory of your CD-ROM drive a double-click on the file SETUP.EXE.	Ind	
InstallAware	Cancel	InstallAware
Then a few notes on carrying out the installation displayed.	are	Now the software can be registered under your name.

🎄 WinPQ - InstallAware Wizard		🔏 WinPQ - InstallAware W	izard	
Destination Folder Select folder where setup will install files.	5	Installing WinPQ The program features y	ou selected are being configured.	
Install WinPQ to: C:\Program Files (x86)\WinPQ	e	Please wait several min	while the InstallAware Wizard installs WinPQ. This may take ites,	
		Status: File: PQi_3_ Size: 51052	4g.jpg, Directory: C:\Program Files (x86)\WinPQ\Picture	
		-		
Destination Folder Required Disk Space: 159,51 Remaining Disk Space: 17,32	2 KB 7 MB			
InstallAware	Cancel	InstallAware	< <u>B</u> ack Next > Cancel	
Select a different directory if it's necessary. Le	ess than	The installation p	rocess is now in progress. This can	
300 MB of disk space (including the setting data or de-		take 1 to 5 minutes, depending on the computer's		
vice profiles created subsequently by the user	speed.			
required. The save location of the actual measure	surement			
data is not defined here. The amount of data by the PQI-D stations can be ignored here.	generated			

Once all of the data have been copied, a tool from the **WinPQ** environment is automatically started. This can be used to set up the future program behaviour. Therefore do never change the check box 'Run WiPQ now'.

🔏 WinPQ - InstallAware Wizard 📃 🗆 🔀			
	Completing the InstallAware Wizard for WinPQ		
	You have successfully completed the InstallAware Wizard for WinPQ.		
	Run WinPQ now		
	To dose this wizard, click Finish.		
	< Back Finish Cancel		

Before further steps can be taken, the license number must first be entered. This can be found on the license certificate in the folder containing the documentation. If no license number or an invalid license number is entered three times in a row, the software can be installed and used as a **DEMO** version. This version is restricted, access to real PQI-D stations is not possible.

C:\Program Files (x86)\WinPQ\DOC\WinPQ-Setup	_EN.RTF	
		a-eberie
License (without a valid license the DEMO version can be ins	talled)	1
4A-15797	Confirm license code	
Change of language setup	-	
On change of selection the program will be restarted!	The second second	
C German	By clicking th	e button the
English	licence numb	or will be
C Chinese	amun eoneoil	er will be
C Spanish	checked and	the installation
C French	checked and	
C Croatian	can be contin	ued!
C Polish		
C Romanian		
2. Installation und setup of the MySQL-Data	base-Server:	
TOU CAD SUD LOIS DADE DV DUILDD JUSIABADOD WIDD	NUL MYSCH . IL YOU WORK WITH ADDITION	ALADASE-SERVER LUKACLE OF MS-SULLOF
if your database server should run on another ma	chine.	
• 2.1 The compressed MySQL-Program-F	ile will be unzipped to folder \W	inPQ\MySQL.
 2.2 You can select another folder for data 	atabase data (e.g. a lager hard disc) b	by option.
 2.3 The MySQL service will be installed 	, started and PQ-Users will be estab	lished.
 2.4 Your installation package contains p 'PQDemo' optionally. 	oower-quality-demo data. You can ti	ransfer these data to the database
3. Selection of the WinPQ-Data-Directories:		



Installation screen license code

The following screens support the installation of the **MySQL**-database-server and important options of the basic setup can be selected. But before the next step can be launched, you have to read and accept the **MySQL** license agreement as an **embedded version** into the software package **WinPQ**. Notice the buttons have the same numbers like the text in the memo below.

Ac:\Program Files (x86)\WinPQ\DOC\WinPQ-Setup_EN.RTF	
Establish the 'WinPQ-MySQL-database' environment now!	a-eberle
Installation of MySQL database	
2.1 Installation of he MySQL-database-server on this PC	
2.2.1 Optional selection of a different folder for SQL database data	
2.2.2 Installation and start of the MySQL-service (establishes PQ user accounts)	
2,3,1 Transfer the power quality DEMO data	
2.3.2 Continue without Power-Quality-Demo-Data	
 Continue without installation of MySQL database To continue with MySQL-installation read and confirm the MySQL-license agreement. 	
To finish the installation further steps a necessary:	
1. Input of license key:	
You will find it on the license-certificate in your manual. After three times of a wrong license key the software will be ins DEMO version.	stalled as

With the button **"Installation of the MySQL-Dateabase-server**" the installation procedure of the **MySQL**-Database-server will be started. All necessary files will be unzipped into the sub folder '...\winpq\MySQL' of the installation path.

72 33% Extracting			_ 🗆 🗵
Elapsed time:	00:00:02	Total size:	437 MB
Files:	0	Processed:	145 MB
Compression ratio:		Compressed size:	
	Background	Pause	Cancel

🎪 C:\Program Files (x86)\WinPQ\DOC\WinPQ-Setup_EN.RTF	
C:\Program Files (x86)\WinPQ\MySQL\mysql_5_1_56_win32.EXE	
Installation of MySQL database Selection WinPQ-data-folder	
2.1 Installation of he MySQL-database-server on this PC	
2.2.1 Optional selection of a different folder for SQL database data	
2.2.2 Installation and start of the MySQL-service (establishes PQ user accounts)	
2.3.1 Transfer the power quality DEMO data	
2,3.2 Continue without Power-Quality-Demo-Data	
 Continue without installation of MySQL database To continue with MySQL-installation read and confirm the MySQL-license agreement. 	
	-
2. Installation und setup of the MySQL-Database-Server:	
You can skip this page by button 'Installation without MySQL', if you work with another database-server (ORACLE or MS-SQL) or if your database server should run on another machine.	
 2.1 The compressed MySQL-Program-File will be unzipped to folder \WinPQ\MySQL. 2.2 You can select another folder for database data (e.g. a lager hard disc) by option. 	•

It's possible to select a different folder (assume a memory of about 500MB per Station and year) for the database data (e.g. a drive with more available memory). If this isn't necessary continue directly with button 2.2.2.

Ordner suchen	×
Select a folder for the PQ/MySQL database data	
System Volume Information	
	_
Claude	
🗆 🌗 MySQLData	
📔 cpr_india	
MySQL	
pq_demo	
j pqdemo	
	•
Neuen Ordner erstellen	OK Abbrechen



The following button 2.2.2 have to be executed in any case. The **MySQL**-service program will be installed, started and PQ-MySQL-users will be established. For the user '**root**' the password '**admin**' will be set.



Right now the delivered DEMO-Data can be transferred into a SQL database. This data can be operated from a database with the name '**PQ_DEMO**'.

👍 C:\Program Files (x86)\W	'inPQ\DOC\WinPQ-Setup_EN.RTF	
	Select the folder for WinPQ data	a-eberle
Installation of MySQL database	Selection WinPQ-data-folder	
Folder for WinPQ da	ta	
C Classic installatio	on upto Windows XP (all folders in WinPQ installation directory)	
• Recommended fro	om VISTA/Server 2008 single user %Public%:C:\Users\Public\	
© Recommended fro	om VISTA/Server 2008 multi-user %UserProfile%:C:\Users\Joerg\	
	Continue with the setup of 'program options'	
To finish the ins	stallation further steps a necessary:	_
1. Input of license key:		
You will find it on the licens	se-certificate in your manual. After three times of a wrong license key the software will be in	stalled as

Afterwards the installations routine changes to the page 'Basic-setup'. Mostly you can left the selection unchanged. If you want to operate in a an multi user environment (e.g. Citrix) with different setup of each user or several user at the same time the selection %UserProfile% is recommended. By confirming the selection the third page will be activated.

🎪 C:\Program Files (x86)\WinPQ\DOC\WinPQ-Setup_EN.RTF							
Check and change the input, before taking it as basic setup!							
Installation of MySQL database Selection WinPQ-data-folder Language and other options							
Program-options: Basic setup of communication ports: COM port 1 COM port 1 Graphical PQStart-desktop COM port 2 COM port 2 PC-Time-synchronization	Operation mode © Manual communication						
0 Callback from station TCP/IP Port number 192.168.000.120 8000 PC-Time-synchronization	Permanent operation without printout Permanent operation with automatic printout						
Name of company							
Company							
Take the settings from the screen as basic-setup							
To finish the installation further steps a necessary:							
1. Input of license key:							
You will find it on the license-certificate in your manual. After three times of a wrong license key the software will be installed as							

Several important settings can be made via the following screen form.

To differentiate between the station data, the ID of the **PQI-D** stations is usually used. When parameterising the stations, ensure that IDs are not used twice, even if stations are not to be interconnected via the **E-LAN**. "**Ex-tended ID**" means that this restriction is removed insofar as the station name (8 characters) is used in addition to the ID.

In the centre area, important settings can be made regarding data access to the stations. An interface for direct access via RS232, a second one for communication using a MODEM, and a TCP/IP interface can be stored and parameterised. Based on these examples, further ports can subsequently be added directly in the INI file of the "PQRS232Server" by means of copy and paste. With the checkbox "Time syn. via PC", it is defined that the PQI-D stations are synchronised daily with the PC time. The behaviour of the program is adapted to the preferred mode of operation by selecting "Access to PQI-D stations" (on the right).

Finally, your company name can be entered. An image file with your logo can be assigned (the formats "**jpg**" and "**bmp**" are supported) later in the **PQAdmin** program (Tab: User setup). These settings are used for protocol printouts and similar.



3. The WinPQ Control Center: The Program PQStart

PQStart.exe/STD-ID	[C:\Program Files\Win	PQ\INI\PQStart_4E.DD	F*]						
<u>Files</u> <u>P</u> rograms/Properties <u>H</u> elp									
	P1: Feeder;10 kV [PQID-UI]								
EN PQ ev	ents								
Substation									
P1PQID-UI	PQID-UI	PQID-UI	PQID-UI						
Feeder	Feeder	Feeder	Feeder						
10 W	110 W -	10 W	10 10 10						
SS1 🔻	SS1 🔽	SS1 🔽	SS1 🔽						
Status	Status	Status	Status						
SQL: PQID@LocalHost	EN	💐 🗙 📉 🔯 🛛 LIFE:09:05	:25	1					

This program represents the communication centre of **WinPQ**. Each individual PQI-D/DA is represented by a field which permits you to access the station directly. The most important functions of this program are:

- Display of the identifier and any text that describes the associated station
- Via the menu (in the figure "SS1", the text can be set as required), direct access to the station-related data in the database or the station itself
- Setting for access via MODEM
- It alerts the user when new PQ events/errors occur
- It reports PQ events and changes at the binary inputs

3.1 Representation of PQI-D Devices in PQStart

You can create a box for each device from which you can access the device directly. The station properties and labelling must be adapted to make it as easy as possible for subsequent users to assign the station. Right-click on the required station. Select "Properties: station" in the menu that appears. The central dialogue box for the link between this display and the devices is then displayed.

3.1.1 Create new stations, groups and tabs

Station: Activate	A station can be activated
Station: Properties	You can change the properties of each station
Station: Copy setup	You can copy the setup into clipboard
Station: Insert setup	You can insert properties from clipboard
Station: New	One can create a new station
Station: Delete	A station can be deleted here
Group: Properties	The properties of a group (sub station) can be changed

By clicking the right mouse button you have the following options:

Group: New	A new group can be generated
Page: Change text	The text of the page tab can be changed
Search for a station	One can input a station name and the program searches for the item



An example of station overview



3.1.2 Changing the device name and ID number

PQStart.exe/STD-ID [C:\Program Files\WinPQ\INI\PQStart_4E.DDF*]	E1: UWES 115 [PQID_UI]
Files Programs/Properties Help	Station Modem Alert/Mail Online data Data archive Binary input Information
P1: Feeder; 10 kV [PQID-UI]	Basic properties
EN PQ events	Type of station: ID: List of all stations:
Substation P1P2PQID-UI P2PQID-UI P3PQID-UI P4	
Feeder Feeder Toky Feeder 10kV	Station labeling Designation: UVES 115 Button busbar 1
Stat Properties: group Status: Status: Properties: tab Properties: tab Status: Status:	Menü
SQL: POID@Local SQL: POID@Local SQL: POID@Local SQL: POID@Local Copy station parameter Delete station Changes align Alignment of station	Connection (TCP/IP + SQL) Network port IccalHost I718 SQL-connection state stw_bochum IP Other parameters Left: Top: Width: Height: 10-minute timeout 2 is: 116 i80
	F Font □ Background color ✓ Activate X Cancel

The most important points:

- The designations which you can enter in the field do not change your device settings. It is therefore not absolutely essential for the designation and the device name to be identical. The ID (e.g. "Q1") must be entered correctly, because this ID is used as a filter when a program is started.
- In the field "Connections (SQL + TCP/IP)", the connection to the **RS232Server** is generated by means of "Network-ID" and "Network port", i.e. the direct access to the device for parameterisation and online data.
- The link to the database in the same field is created with "SQL connection" and "IP...". "SQL connection" indicates which data are to be used.

PQVisu Standard directory for PQI-D measurement data			
PQDemo Demo data for exemplifying and testing			
PQBox Data of the PQ-Box 1000 measuring devices			

- Select the SQL connection "PQVisu" as the default setting.
- The standard network ID is called "LocalHost" if the program PQRS232Server runs on the same PC.

3.1.3 Alerting – Optically, Acoustically, or by E-Mail

This permits alerting (optically and acoustically) when fault messages or binary signals (binary inputs of the PQI-D) are received.

A4 [UI]	
PQ mobil 20 kV [—]	If alerting is activated, the status indicator
SS1 V	colour changes from green to red when
Status	an event occurs

In the dialogue box "Alert/Mail" you can set different alerting options for events on the PC.

E SETUP: P2 []		
Station Modem Alert/Mail 3se Optical/acoustical aler Optical/acoustical aler Recorder A Recorder C Recorder C Recorder S PQ-Events Binary inout	c-Online data Binary input Menus Information Recording s Recorde Recorde PQ-Ever PQ-Stati	tart/stop r A r B stics
Sound Quit Sound Alert via mail:	Windows sound will be heard from the PC, during an event. Quit = permanent sound till the event will be confirmed	
Recorder A Recorder E Recorder C Recorder S PQ-Events Binary events Station timeout	Send to DEFAULT	
✓ OK 🗙 Cancel		

Recommendation: Recorder B – Optical alert

3.1.4 Hiding of Program Functions

The scope of the menu functions can be limited.

٩	PQStart.exe/STD-ID [C:\Program Files\WinPQ\INI\PQStart_4E.DDF*]										
	Files Programs/Properties Help										
	P1: Feeder; 10 kV [PQID-UI]									erle 人	
	Image: PQ PQ events										
	Substation										
	P1 190	PQ	ID-UI	PQID	-UI	3 1 1917	PQID-UI	P4	PQID-UI		
	reeaei			reeder	Fe Fe	eder		reeae	H.2.		
	10 kV	e		110 kV	10) kV		10 kV	1. A. I. A.		
	SS1	-	06	CC1 -	Qe	ند <u>ا</u> ا	Qic	SS1	< Color		
			Record	er							
	2	8636 9698	PQ eve	nts			Status		Status		
	-		PQ ove	rview							
		2	Measu	ring data		1					
		EN	EN rep	orts							
		\bowtie	Online	data		1					
		sal 40	Read o	ut data							
		۴.	Thresh	olds, connection,	IO						
		*	Measu	ring parameter/tr	igger	1					
		۲E	Compa	act		1					
		Sys	ID, LAN	l, Time							
	SQL: PQI	D@Lo	calHost		EN 💐 🗴	× N	EMPTY		ID=0 [P1: Loc	alHost;1701	/PQVi //

As with all other selection boxes, if no selection has been made, all functions and data can be accessed.



3.2 Connecting an additional evaluation computer to the database

3.2.1 Connection of a client to the database

Option 1:

Open the station properties of any device.

If no database is found, the button "IP" is activated. When this is clicked, an input window appears, into which the BIOS name or IP address of the server on which the database is installed can be entered.

Pa SETUP: P1 [SQL: PQID@Loca	lHost]			
Station Modem Alert/Mail Me	nus			
PQID-UI Statio	on type			
ID (station): P1:	Designation Feeder; 10 k	V		
Button 1 SS1		C Offline-Button		
Connections (TCP/IP + SQL) Network-ID	Network po	dbxconnections.ini	x	
LocalHost SQL connection PQRemote	1701 ▼ IP	PQRemote	-	
✓ OK X Cancel		OK Cancel		

A connection has been established as soon as the status box on the bottom left is green. If it remains red, either the address is incorrect or there is a problem with the network. (For instance Firewall! Refer to the network checklist) In the Network-ID field, enter the address of the computer on which the program PQRS232Server is running. (Default setting "LocalHost")

Option 2:

Open the file ... \WinPQ\dbxconnections.ini

onnection: PQVisu Host: LocalHost User: PQID Password: #### Database: PQID o 1. SQL Basic Functions: 1.1. Installation of the MySQL database 1.2. Installation of MySQL ODBC drivers 1.3. Setup of the WinPQ database environment 1.4. Checks the completeness of WinPQ-SQL-Connections Select a connection Select	🖏 SQL-Options 🛛 💆 User s	etup 🖗 RS232-Setup 🐴 INI file setur	Service progra	ams		
1. SQL Basic Functions: 1.1. Installation of the MySQL database 1.2. Installation of MySQL ODBC drivers 1.3. Setup of the WinPQ database environment 1.4. Checks the completeness of WinPQ-SQL-Connections 1.5. Generate a new SQL user 1.6. Generation, Change, Deletion of SQL connections 2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder Value Value Output Value Output Value Output DataBase 1.5. Second (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder Value	onnection: PQVisu	Host: LocalHost	User: PQID	Password: ####	Database: PQID	lons
1.1. Installation of the MySQL database 1.2. Installation of MySQL ODBC drivers 1.3. Setup of the WinPQ database environment 1.4. Checks the completeness of WinPQ-SQL-Connections 1.5. Generate a new SQL user 1.6. Generation, Change, Deletion of SQL connections 2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder Value Value User, name Path/add Path/add Value Valu	1. SOL Basic Fund	tions:				
1.2. Installation of MySQL ODBC drivers 1.3. Setup of the WinPQ database environment 1.4. Checks the completeness of WinPQ-SQL-Connections 1.5. Generate a new SQL user 1.6. Generation, Change, Deletion of SQL connections 2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder XG info (errors/others): Value Value Value Outabase (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder YG info (errors/others): Value Val	1.1. Installation of	the MySOL database				
1.2. Installation of MySQL ObsC drivers 1.3. Setup of the WinPQ database environment 1.4. Checks the completeness of WinPQ-SQL-Connections 1.5. Generate a new SQL user 1.6. Generation, Change, Deletion of SQL connections 2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder Xi info (errors/others): Value Value Optimized Value	1.2. Installation of					
1.3. Setup of the WinPQ database environment Setect a connection 1.4. Checks the completeness of WinPQ-SQL-Connections SQL connection PQVisu/ has 10 parameted 1.5. Generate a new SQL user SQL 1.6. Generation, Change, Deletion of SQL connections Value 2. SQL-Database (Backup, Restore and Archiving) Value 2.1. Saves SQL database data (Backup) to a neutral folder Motifiame DataBase PQID DataBase PQID DataBase 1 Iscalecode 0000 Compressed 1 Iscalecode 0000 Compressed False	1.2. Installation of	MySQL ODBC drivers	Cillsen licemil	ocuments\RAD Studio\dbf.me		
1.4. Checks the completeness of WinPQ-SQL-Connections SQL connection PQVisit has 10 parameter 1.5. Generate a new SQL user Image: Connection SQL connections 1.6. Generation, Change, Deletion of SQL connections Value 2. SQL-Database (Backup, Restore and Archiving): Value 2.1. Saves SQL database data (Backup) to a neutral folder Value Of info (errors/others): Use_name 2.3. SQL SQL database data (Backup) to a neutral folder Paib 3.3. SQL database data (Backup) to a neutral folder DataBase 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover SQL database data (Backup) to a neutral folder Paib 3.3. Sover S	1.3. Setup of the V	VinPQ database environment	Select a connection	f.		
1.5. Generate a new SQL user SQVew 1.6. Generation, Change, Deletion of SQL connections Value 2. SQL-Database (Backup, Restore and Archiving): Value 2.1. Saves SQL database data (Backup) to a neutral folder ModName Ki info (errors/others): Pathword Vision Pathword Value Value Value MySQL ModName MySQL Value User, name Pathword PQID Value Value Value PQID	1.4. Checks the completeness of WinPO-SQL-Connections 1.5. Generate a new SQL user		15	SQL connection PQVi	su' has 10 parameter!	
1.6. Generation, Change, Deletion of SQL connections Value 2. SQL-Database (Backup, Restore and Archiving): Avoitance My60L 2.1. Saves SQL database data (Backup) to a neutral folder DataBase PGID XG info (errors/others): DataBase PGID XG info (errors/others): PGID Pathword XG info (errors/others): PGID Pathword XG info (errors/others): PGID Pathword			POViou			
2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder XG info (errors/others): XG info (err	1.6 Constantion C	and Deletion of COL connections	Tape	5000		
2. SQL-Database (Backup, Restore and Archiving): 2.1. Saves SQL database data (Backup) to a neutral folder IG info (errors/others): IG info (erro	1.0. Generation, C	lange, Deletion of SQL connections	Talamana	Value		
2.1. Saves SQL database (backup) to a neutral folder Ginfo (errors/others): G	2. SQL-Database (Backup, Restore and Archiving):		a). Hostiane	LocaHost		
2.1. Saves SQL database data (Backup) to a neutral folder Ginfo (errors/others): Ginfo (err			97. DataBase	PQID		
G info (errors/others): PassWord PGID biobise -1 biobise -1 biobise -1 biocalecode 0000 compressed False encrypted False encry	2.1. Saves SQL da	tabase data (Backup) to a neutral fold	er User_name	PQID		
:37:25 NEWSTART: "C:\WinPQ2011\PQAdmin.exe" "	G info (errors/others):		PassWord	PQID		
:37:25 NEWSTART: "C:\WinPQ2011\PQAdmin.exe" " conpressed False			blobsize	-1		
:37:25 NEWSTART: "C:\WinPQ2011\PQAdmin.exe" encrypted False			localecode	0000		
sorizo neworket: crywinegzorregadmin.exe encrypted False	15:37:25 NEWSTART: "C:\WinPQ2011\PQAdmin.exe" "		compressed	False		
37/25 DATE + 01 04 2011 15/37/25			encrypted	False		
	100 C			and the second	And the second sec	

After each "HostName=", enter the IP or the BIOS name of the file server.

For example, HostName=StWX_Server1 or HostName= 192.168.1.1



If the **PQStart** program finds the database, the colour of status box on the bottom left is green and displays:

"SQL: PQID@Servername"

Information for the administrator:

To contact the SQLServer, the clients use Port 3306. If you set the "SQL connection" to PQDemo, demo data are displayed which will help you become accustomed in the beginning when actual data is not available yet.



3.2.2 Connection of an additional evaluation computer for online data and parameterization

These settings are only required if you want to access devices (PQI-D/-DA) **online** from this client. A functional access to the database is sufficient for visualising data.

Open the station properties.

P1: Feeder;10 kV P1: Feeder;10 kV Station Station Substation PQID-UI PGID-UI PGID-UI PGID-UI PGID-UI Properties: station Other behaviour Properties: station Insert a station Insert a tab <th cols<="" th=""><th>Files Programs/Prop</th><th>erties Help</th><th></th><th></th></th>	<th>Files Programs/Prop</th> <th>erties Help</th> <th></th> <th></th>	Files Programs/Prop	erties Help		
Station EN PQ events Substation PQID-UI P2 Pieceder Feeder Feeder 10 kV Feeder Feeder 10 kV Select a station Properties: station Station Properties: station Feeder Properties: station Properties: group Properties: tab Insert a station Insert a tab Comment Comment Foot Foot Foot		P1: Feeder:10 kV	🔁 SETUP: Q3 [MySQL: Coburg@LocalHost]		
Substation EN PQ events Pi PQID-UI Pi Pi Pi PQID-UI Pi Pi Select a station Tok Insert a station Pi Insert a tab Copy station parameter Solut POID Cocal Copy station parameter		,	Station Modem Alert/Mail Menus		
Substation PQID-UI Station type P1 P2 PQID-UI P3 Feeder Feeder D (station): Designation Q3: Network ID Network port 10 kV 10 kV 10 kV SS1 Select a station Sol: Properties: station Properties: station Properties: group Properties: tab Insert a station Insert a tab Comment Font Comment Font Comment Font Comment	PQ Station EN PQ ev	vents	Relation to the device		
Pi PQID-UI P2 PQID-UI P3 P4 Feeder Feeder Feeder D (station): Designation 10 kV Feeder Feeder 0 kV 10 kV Select a station Select a station Offline-Button Stat Properties: station Connection Coburg Image: Coburg Properties: tab Insert a station Insert a station Insert a tab Image: Coburg Sol: POID@Local Copy station parameter Reset IDX=2 POSI=[2]: I5120; I63/Iten] OUIT=661 [268 3eer=//Item D0086/ft	Substation		POID-LII VIEW		
Feeder Feeder Feeder 10 kV 10 kV 10 kV SS1 Select a station Solice to station Properties: station Properties: group Properties: group Properties: group Properties: tab Other behaviour Insert a station Insert a tab Insert a tab Font SOL: POUD@Local Copy station parameter	PQID-UI	PQID-UI	ID (station): Designation		
Feeder Feeder Feeder Button 1 10 kV 10 kV 10 kV 551 Select a station 10 kV 0 0 Properties: station 20 kV metwork 100 fs. 15.2 1701 10 kV Properties: station 20 kV metwork 100 fs. 15.2 1701 10 kV Properties: station 0 10 kV 10 kV Insert a station 10 kV 163 0 10 kV Insert a tab Font 10 kV 10 kV 10 kV SOL: POUD@Local Copy station parameter Reset 10 kV 10 kV		F2F3	Q3: Neuses;110 kV		
Select a station Connections (TCP)# + SQL) Network port Properties: station Properties: group 120 = 1 Properties: tab Insert a station Coburg Insert a station Insert a tab 163 = 0 Font Comment Comment SQL: POID@Local Copy station parameter Peset	Feeder	Feeder Feeder	Button 1 SS1 Coffline-Button		
Stat Properties: station Stat Properties: group Properties: tab SQL connection Insert a station Insert a station Insert a tab Comment Font Comment Font Copy station parameter	SS1 V	Select a station	Connections (TCP/IP + SQL) Network ID Ince Lies 2		
Stat Properties: group SQL connection Properties: tab Properties: tab Coburg Properties: tab Insert a station Insert a station 120 163 0 - Insert a group Insert a tab Font - - - - SOL: POID@Locall Copy station parameter Reset IDX=2 POSI=[2]:15:120:163/txon] OUIT=681/268 3eer=//0min 10min=mo32/210m_00086/ff - -		Properties: station			
Properties: tab Other behaviour Width: PQ-10-min-Timeout [min] Insert a station 120 163 0 - Insert a group Insert a tab Comment - - SOL: POID@Locall Copy station parameter Reset IDX=2 POSI=[2]:15:120:163/Monl OUIT=681/268 3eer=///min 10min=mo32/210m_00086/ff	Stat	Properties: group	Coburg IP		
Insert a station 120 ± 163 ± 0 ± Insert a group Comment Insert a tab Font SOL: POID@Locall Copy station parameter		Properties: tab	Other behaviour Width: Height: PO-10-min-Timeout [min]		
SOL: POID@Locall Copy station parameter Copy		Insert a station			
SOL: POID@Locall Copy station parameter Reset IDX=2 POSI=[2:15:120:163/Non1.01IIT=681/268.3eer=//0min.100in=m32/210m_00086//		Insert a group	Comment		
SOL: POID@Locall Copy station parameter Tox=2 POST=[2:15:120:163/Non1.0UIT=681/268.3ser=//0min.100in=m32/210m.00086//		Insert a tab			
Insert station parameter Delete station Delete station Delete station	SQL: PQID@Locali	Copy station parameter Insert station parameter	Font ' Reset IDX=2 POSI=[2;15;120;163/Non] QUIT=681/268 3sec=/0min 10min=pq3i2c10m_00086 Corr X Carcel	i/Omin	

In the Network-ID field, enter the IP address or the BIOS name of the computer on which the **PQRS232Server** is running. Select the device you want to address via the port number (in the field on the right) in accordance with the specifications made in the program **PQRS232Server**.

4. Settings in WinPQ – PQ Admin

Files Prog	exe/STD-ID rams/Prop	[C:\Program Files\Win erties Help	PQ\INI\PQStart_4E.DD	(F*]	
📄 🗈 1903 🕹	Start: PQA Start: PQA Start: com	Aail Admin Im.exe	der;10 kV [PQID	·UI]	a-eberie
P1 Feeder	Program :	Feeder	PQID-UI P3 Feeder	PQID-UI P4 Feeder	
551	Status	Status	Status	Status	
SQL: PQID@	LocalHost	EN	🖳 🗙 📉 🔯 🛛 EVT:09:25	:51/0 Set up the prog	ram environme 🏑

Using the "**PQAdmin**" part of the program, it is possible to implement changes in the communication settings, program language, etc. even after installation.

🕺 SQL-Options 🙎 User setup	p 🖗 RS232-Setup 🖬 🌆 INI file se	etup 🛛 😭 Service program	is				
Connection: PQVisu		User: PQID	Password: ####	Database: PQID			
1. SQL Basic Functio	ons:						
1.1. Installation of the	<u>: MySQL database</u>						
1.2. Installation of MyS	SQL ODBC drivers						
1.3. Setup of the WinPQ database environment							
1.4. Checks the compl	1.4. Checks the completeness of WinPO-SQL-Connections						
1.5. Generate a new SQL user							
1.6. Generation, Change, Deletion of SQL connections							
2. SQL-Database (Ba	ackup, Restore and Archiv	ring):					
2.1. Saves SQL databa	<u>ase data (Backup) to a neutral fi</u>	<u>older</u>					
2.2. Writes saved date	2.2. Writes saved date (Restore) back to an existing database						
2.3. SQL database arc	<u>chiving (time depended separati</u>	on of two databases)					
2.4 Makes a backup of	<u>f SQL database data (time selec</u>	<u>:tive backup)</u>					
3. SOL-Database Ad	ditional Functions:						
3.1. Checks the SQL ta	able structure (e.g. after an Upc	<u>late)</u>					
3.2. Removes unused/accidental tables and nonsense records from database							
3.3 Optimization of My	ySQL-tables with the MySQL cor	nmand 'optimize table	<u>!</u>				
]							

4.1 Tab: SQL

In the menu "Tab: SQL", it is possible to change settings in the database as well as to save measurement data of the database on another drive.

Backup data	Copy the measurement data of the database to another drive
Restore data	Restore the measurement data in the database
Archive data	Measurement data are copied to another folder and deleted in the source file



4.2 Tab: User

User-specific settings can be made in the menu "User".



General: The language and company name, as well as the selection of authorisations, can be set here.

Graphic: Under the tab "Graphic", a company logo can be set for all printed reports and fault records.

4.3 User with limited rights

In "WinPQ / PQ Admin" it is possible to setup two user groups with limited rights. If one user should not have access to the setup of the devices, the adjustments can be made here



1) The access to "WinPQ Admin" is not allowed for the user with limited administration rights.



2) Only the icons with user rights are shown in WinPQ

In this example no parameters or thresholds of the hardware can be changed





3) To enable all administration or operator rights it is necessary to insert the password. After the password is inserted all functions are available.



PQStart.exe/Trusty		×
Password abcd		_
ОК	Cancel	

5. Connection of a device directly with RS232

5.1 Setting the device PQI-D or DA

With a serial connection to a PC, no settings need to be made on the measuring device. The PQI-D/PQI-DA is supplied with a default baud rate of 115,200 baud.

5.2 Settings of the PQRS232Server

The program "**PQRS232Server**" handles the data connections to the network analysers installed in the field. It establishes the MODEM or TCP/IP connections.

The following settings must be made on the computer to which the device is connected.

Note:

The COM 2 interface of the computer does not need to communicate with the COM 2 interface of the device.

If you are using a USB adapter: Make sure that you use an adapter that stores its last settings. If older or cheaper USB adapters are plugged in again, any free COM port is assigned, and your settings will thus no longer be correct. A.Eberle GmbH & Co. KG recommends and supplies devices from FTDI.

A PQAdmin.EXE/STD-ID [C:\Programme\WinPQU.OGFILES\PQAdmin_	_106_3.LOG*]		
SQL Help			
🕺 Tab: SQL 🙎 Tab: User 🗭 Tab: R5232 🛍 Tab: Ini setup			
Setup also for PQManager.INI	ed from file >C:\Programme	\WinPQ\INI\PQR5232Server.INI <	
PQI11=115200;8;None;1;XONXOFF; 711;0;;;;0	PQI11:R5232		
A A New: R52	NUM COM interface		11
Rew: TCF	/IP Baud-Rate		▲ 115200 ▼
	Parity		▲ None
Change	Protocol		XONXOFF
	X Delete MODEM		• OFF
	Communication port		1711
Save	Timestamp (auto con	nmand)	0
	Ч		
Here the is an entry for each dat	a connec-		
tion to a measuring device. Conn	ections to		
TCP/IP devices begin with	IP; COM ^{tior}	n via PC	0
connections begin with POI	·		
connections begin with PQL			
			//

The figure above shows a common entry for a serial connection to COM11.



POI11 Use the COM 11 interface of the computer. 115200 Baud rate for communication (default setting in the device) 8 8 data bit (default setting in the device) 1 1 stop bit (default setting in the device) NONE No parity (default setting in the device) RTSCTS The handshake procedure (default setting in the device) 1711 Port number with which the WinPQ programs access this connection later. 600 Time interval in seconds for synchronising the device with the PC time. No value must be entered in case of external time synchronisation.

The entry comprises the following:

Usually, only the following three variables must be adapted:

- 1. The COM port: Right after "PQI", enter the COM port of the PC to which the device is connected. For COM 2, you should enter **PQI2**, for COM 27 you should enter **PQI27**, etc.
- 2. The port number of the client: This port number is the distinguishing feature for the **WinPQ** programs to address the required device. (See figure Overview in chapter 1). It should therefore be ensured that there is a different port number for each connection entered.
- 3. We suggest 1701 as the first port number.
- 4. Time synchronisation: This number (600 in the example) is the interval in seconds for synchronising the PC time/PQI-D time. You can deactivate the time synchronisation via PC by deleting this number. This is especially required if a DCF clock sets the time for the device.

Never delete one of the semicolons.

5.3 Settings in the "PQManager"

The **PQManager** archives the measurement data of the network analysers in the database. Each communication from **PQRS232Server** will be automatically copied to **PQManager**. For standard installations no work has to be done here.

A PQAdmin.EXE/STD-ID [C:\Programme\WinPQ\LOGFILES	PQAdmin_106_3.LOG*]	
SQL Help		
🐝 Tab: 501 🖸 Tab: User 🖨 Tab: 85232 🍱 Tab: 1	ni setup	
		1
Save INI Start program	C:\Programme\WinPQ\INI\PQManager.INI	
Set in of the parameterization software		
ID, LAN and Time (POParaSys.ini)		
Connection to the mains, transformer and IO	(POParaConf.ini)	
Data classes and trigger (POParaClass.in)	· · · · · · · · · · · · · · · · · · ·	
Online and offline data (POParaVisu.in)		
Compact, only the most important parameter	(POParaComp.in)	
Transfer of measuring data to the SOL	database	
Setup of PQRS232Server (PQRS232Server.ini		
Setup of POManager (POManager.ini)	Open "PQManager.ini"	
Setup of other programs		
General WINPO setup (WinPO.ini)		
Behaviour of POStart program (POStart.ini)		
Behaviour of PORvReport program (PORvRepo	ort.ini)	
Mail program to send automatically generated	l reports (PQMail.ini)	
Continues backup of the SQL database (PQBa	<u>skup.ini)</u>	
Global SQL-database-access (dbxconnections)	<u>ini)</u>	▼
Direct change of the items in text editor		
[PROGRAM]		
WINDOUSTATE=1		
LOGFILE=1		
RS232Start=1		
OFFLINE=I SNVECONFIC=168		
CLOSEENDOFDAY=0		
FILEERASE=5		
MAXRUNTIME=0		
PROGAFTERREADY=		
SQLDEFAULT=PQManager		
INTERVAL=1500		
PASSWORD=		
COMTRADEDIR=		
CLASSDEFAULT=		
TRAVICON=1		
(POTHOSTS)	Here there is an entry for each date	
POI1=LocalHost;1711;BIN	mere mere is an entry for each data	
	connection to a measuring device.	
SQL Status		

Entries in the PQManager:

Offline=0	"PQManager" operates continuously and reads measurement data from the PQI devices.
Offline=1	PQManager is automatically closed following data transmission from the devices.
CLOSEENDOFDAY=3	In cases of continuous operation, we recommend that you exit the "PQManager" once per day and reopen it via Windows " Scheduled task ". The number 3 here represents the time in minutes before midnight at which the program will be closed.
PASSWORD=	A password can be set up here if unintentional closing of the program "PQManager" is to be prevented.



6. Device Connection via TCP/IP

6.1 Setting the interface of the device

Agree with the network administrator on a free IP address which can be permanently assigned to the device. Also make a note of the subnet mask of your network. Make an additional note of the MAC of the device. This can be found on the name plate.

If the connection to your office network is via a router (gateway, bridge), also make a note of the IP address of the router.

If you connect the device direct to your laptop computer, use a crossover cable, not a patch cable.

TCP/IP Connection with PQI-DA (also Reg-P)

Connect your laptop computer and the device with a crossover cable. Start the program "**Reg-P-Loader**". The following dialogue box is displayed

Made in Germ	((
	PQI-DA
MAC: 0	0-60-35-07-E2-E6
Ser.:	07125015 NS
Art.:	119.7301
Merkma PQI-DA: Eingang / U _e I _e	ale / Characteristics: : H0 C31 T1 E1 M00 G1 Input: : 100 V/110V :5A(max 20*In)
Relais-Au AC DC	sgänge / Relay Outputs 2: 250 V, 5A 2: 220 V, 150W
Binäre Ein AC	ngänge / Binary Inputs: C/DC: 48 V 230 V
Hilfsener	gie / Auxiliary Voltage:
autors I au	derest 88 SEAVACIDC

🗢 REG-P-Loader		
	Language	About
00 60 35 08 35 EA REG-P MAC address 12000 Topical REG-P UDP port (remote parameterization)		
Available local connections Connection	~	
Intel(R) 82566MM Gigabit Network Connection - Paketplaner-Miniport	-	
Operational status		
Up		
IP address 192.168.1.71		
Status ready		

- 1. Set the MAC address which is specified on the name plate of the device.
- 2. Select the network connection to which the device is connected. This is usually an "LAN connection".

Then switch to the second tab.

🏶 REG-P-Loader	
	Language About
00 60 35 08 35 EA REG-P MAC address 12000 Topical REG-P UDP port (remote parameterization)	
Local computer configuration New COM server parameters New REG-P IP parameters	
Accept any valid client IP Accept any valid client IP P address of remote computer Accept any valid client IP P address of REG-P Accept any valid client IP Accept any valid clien	New communication parameters of regulator 115200 COM2 Baud rate (REG) 20 TMO of regulator responses [10ms] 10 TMO between two characters [ms] 0 Time to wait after reg. response [ms]
Transfer new parameters	Get COM server parameters
Status ready	

- 3. Read out the COM-Server parameters.
- 4. Enter the required IP address.
- 5. After entering the values, click the button "Transfer new parameters".

If the message "Transfer successful" appears, the device has been parameterised.

Note:

IP address: The IP address of the measuring device (PQI-DA) which you agreed on with the system administrator. **Subnet mask:** Subnet mask of your network.

The IP address of the default gateway: If the device is connected via a gateway (router, bridge), then enter its address here.

If no gateway is required, enter the address 0.0.0.0.

TCP port (data transfer): The port via which communication takes place. The default setting is 1023.

T-O: For the first character = 240

T-O: Between the characters = 36



6.1.1 TCP/IP Connection through W&T COM-Server

Connect your laptop computer to the COM-Server (REG-COM) by means of a crossover cable. Start the program "WuTility.exe". Click on the icon "Scan". Your COM-Server with the currently set IP address is displayed. To set the IP address, select the entry and click the icon "IP address". The following dialogue box is displayed:

Change Network Parameters	
IP add <u>r</u> ess (must be unique):	Address range:
	No restrictions
The device's current IP address.	
Caution!	
On a TCP/IP network, ther Please make sure that the	e must never be two devices with the same IP address. above IP address has not been assigned to someone else,
and that it is not part of a D	HCP address pool, either.
When in doubt about avail	able addresses, ask your network administrator.
Subnet mark:	
o dibitios <u>m</u> asis.	Default values from
255 255 255 0	Default values from Device settings
255 255 255 0 Default gateway:	Default values from Device settings
255 . 255 . 255 . 0 Default gate <u>way:</u> 192 . 168 . 1 . 5	Default values from Device settings
255 . 255 . 0 Default gateway: . 1 . 5	Default values from Device settings

IP address: The first three fields of the IP address are deactivated by default. If you need to access one of these three fields, select "No restrictions" in the drop-down list "Address range" to gain access.

Subnet mask: Enter the value specified by the system administrator. 255.255.255.0 is the default value.

Standard gateway: Enter the value specified by the system administrator here. If no gateway is used, enter 0.0.0.0.

After clicking on "Next", BootP is requested; this should be deactivated. After clicking on "Next" again, a message is displayed indicating that the COM-Server can now be used and that the new IP address has been adopted.

6.2 Settings of the "PQRS232Server"

The "PQRS232Server" handles the data connections to the network analysers installed in the field. It establishes the MODEM or TCP/IP connections.

A PQAdmin.EXE/STD-ID [C:\Programme\WinPQ\LOG	FILESIPQAdmin_106_	3.LOG*]	
SQL Help			
🕺 Tab: SQL 🛿 🕵 Tab: User 🖉 Tab: R5232 🔤 Tab: Ini setup			
Setup also for PQManager.INI	Loaded from file >C:\Programme\WinPQ\INI\PQR52325erver.INI<		
IP1=192.168.0.20;8000;1701;600;0;;		IP2:IP	
192=192.168.0.21;8000;1702;800;0;;	A New: R5232	IP: Transducer TCP/RS232	192.168.0 .021
	8 New: TCP/IP	Port: Transductor	8000
		Communication port	1702
	Change Time :	Time synchronisation via PC	600
	X Delete	Port: Auto reset	0
		Request command	
	Save	Reset command	
Here there is an entry for nection to a group of d Connections to TCP/IP dev IP; COM connections begin	each data o evices (EL/ ices begin with PQI.	con- AN). with	

The figure above shows a common entry for two TCP/IP network connections.

The entry comprises the following:

IP1	The connection name. It must begin with "IP", followed by any number for differentiation
192.168.0.20	The IP address of the device to be addressed (i.e. PQI-DA or REG-PE or COM Server)
8000	Port number W&T for communication between WinPQ and device
1023	Port number PQI-DA (REG-P) for communication between WinPQ and device
1701	Port number for communication between the client and PQRS232Server.
600	Time interval in seconds for synchronising the device with the PC time.



PQI-DA (REG-P) W&T Com-Server	
COM-Port2:	-COM-Port2:
Modus	Mode
ECL	ECL
Baudrate	Baud rate 57600
Parity	Parity
P-	P-
Protokoll	Protocol
RTS(CTS)	RTS(CTS)

Information: settings interface COM2 of the device:

6.3 Settings in the "PQManager"

The **PQManager** archives the measurement data of the network analysers in the database. Each communication from PQRS232Server will be automatically copied to PQManager. For standard installations no work has to be done here.



Entries	in	the	PQManager	<u>.</u>
				_

Offline=0	"PQManager" operates continuously and reads measurement data from the PQI devices.
Offline=1	PQManager is automatically closed following data transmission from the devices.
CLOSEENDOFDAY=3	In cases of continuous operation, we recommend that you exit the "PQManager" once per day and reopen it via Windows " Scheduled task ". The number 3 here represents the time in minutes before midnight at which the program will be closed.
PASSWORD=	A password can be set up here if unintentional closing of the program "PQManager" is to be prevented.



7. Device Connection via Dial-Up MODEM

When using a MODEM, there are two options:

- 1. The MODEM is only used for collecting data. This means that the connection is always established from the control centre and not by the MODEM on the PQI-D side.
- In case of an automatic disturbance record quickly after the event, the MODEM on the PQI-D side should establish a connection autonomously and transfer the disturbance recordings and EN messages.

7.1 Setting the device

7.1.1 Setting the interface of the PQI-D

In "PQStart", start the program "ID, LAN, Time".

Under the first tab, "Configuration", you can see the required settings for the two serial interfaces of the device. Set the corresponding variables for the interface to which the MODEM is connected.

Example COM 2: ECL, 38 400 baud, P- and XON(XOFF)

PQStart.exe/STD-ID [C:\Program Files\WinPQ\INI\PQStart_4E.DDF*]		
Files Programs/Properties Help		
P1: Feeder;10 kV [PQID-UI]		
Station EN PQ events Substation		
Pi - PQID-UI P2 - PQID-UI P3 - PQID-UI P3 - PQID-UI P4 -	COM-Port1:	COM-Port2:
	Mode: ECL	Mode:
Recorder PQ events Do querifier	Baud rate: 115200	Baud rate: 9600 💌
Kessuring data	Parity	Parity
전 Online data 왢 Read out data	Protocol:	Protocol:
 Thresholds, connection, IO ✤ Measuring parameter/trigger 		
Y∃ Compact Sys ID, LAN, Time.	Set	Set
SQL: POID@LocalHost		

Click the "Set" button in the dialogue box of the respective port (COM-Port1; COM-Port2).

Activating the automatic call

If you only use your MODEM to collect data without automatic call-back, you can skip the following sections and go directly to section "Settings MODEM on PQI-D side"

The automatic call by the MODEM when an event occurs is implemented as a background program. There are two types of connection possible:

1. The MODEM is connected to a PQI-D (standard scenario):



PQModem_NoStat.ecl

Case 1: the MODEM is connected to a PQI-D




Case 2: the MODEM is connected to another REGSys device

The MODEM is not connected directly to a PQI-D device in the E-LAN. It is connected to a voltage or Petersen coil regulator.



PQModem_Stat.ecl



7.2 Setting the MODEM on the PQI-D side

The MODEM on the PQI-D side must be set in such a way that it can receive calls. The settings required for this purpose are (the AT commands for the MODEM Devolo Microlink 56 k i are used as examples):

Begin with default settings	&F
Deactivate the result codes	Q1
Ignore DTR	&D0
Echo Off	EO
Answer call after ringing three times	S0=3
End of the command line := esc	s3=27
Silent operation	LO
Save settings as Profile 0	&W0
Load Profile 0	&Y0

The whole command is thus as follows:

AT&F Q1 &D0 E0 S0=3 S3=27 L0 &W0 &Y0

Note:

It is common practice to use only upper case or lower case letters when setting up the MODEM. The use of both upper and lower case letters sometimes leads to undesired results.

If you have a different MODEM, the settings should be carried out by an expert, as even one single incorrect character could result in faulty operation of the MODEM.

7.3 Setting the Remote MODEM

Without MODEM Call-Back

Without MODEM call-back, the MODEM can remain in standard mode.

With MODEM Call-Back

If the MODEM on the PQI-D side calls back, this MODEM must also be set in such a way that it can receive calls. The same settings as described in section apply.

7.4 Settings of the "RS232Server"

In the file "RS232Server.ini", "TELLIST" must be the specified connection to the MODEM next to the handshake procedure

🖧 SQL-Options 🛛 🖸 User setup 🖉 RS23	12-Setup 📴 INI file	setup	
* Start program			Load from file: C:\WinPQ2011\INI\PQRS232Server
Communication with measure devices and sele	ction of data classes	-	
NAME OF CASE OF DOMINISTRATION		PQI4:RS232	
ive: Ko-server/e-gmanager communication	P New: RS232	NR COM-Interface	4
P1=192.168.0.120;8000;1702;600;0;;	S New: TCP/IP	Baud-Rate	115200
		Parity	None
Cause DOManager cellun	+ Change	Protocol	RTSCTS
IP1=LocaHost; 1702;8IN	× Delete	MODEM	
QI4=LocalHost; 1701;BIN		Communications-Port	1701
There is an entry for each		Time step (Auto-Command)	0
data connection to a group		Request-Command	
of devices (ELAN).		Reset-Command	
2 C10m1		Start program	
CDay1		Time-Synchronization via PC	0
CRecB1		general design in the state of the state of the	

Two PQI-Ds are connected in the example.

The first PQI-D is connected via a TCP/IP connection. The second one to COM 1, with MODEM; this is indicated by the entry "TELLIST" after the handshake entry RTSCTS.

In the section [TELLIST] further down in the file, you do not need to change anything.

The baud rate and COM interface can be easily set via the Interface tab.

Without MODEM Call-Back

If no MODEM call-back is required, the process is complete.



With MODEM Call-Back

With MODEM call-back, the RS232Server must be in continuous operation to recognise incoming calls from the MODEM. (See also the overview of continuous operation in section 7.2.2. Here, the setting "Autoclose=0" must be made).

7.5 Configuration of the WinPQ Software

In POStart, click "Properties: station" and select the "MODEM" tab.



Select the checkbox "Use MODEM" and enter the number with which the MODEM is to be called.

If you use a telephone system and need to pre-dial 0, enter "0" before the number. The comma stands for a break of 0.5 seconds. This is required by some telephone systems. In addition, you should enter **X3** as a pre-dial command. **X3** causes the MODEM to dial immediately, and it does not wait for a dial tone.

Start one of the **WinPQ** programs to ensure that the settings are correct. We recommend the program "ID, LAN, Time", since the smallest amount of data is transferred in this case.

8. The WinPQ Management Programs in Continuous Operation

The programs "**PQManager**", "**PQRS232Server**", and "**PQRvReport**" (if error messages are printed out automatically) run in the background.

Usually, the program "**PQManager**" must run continuously to ensure that the database is updated continuously. In some use cases, the programs "**PQRS232Server**" and "**PQRvReport**" must also run continuously.

The programs come with a self-shutdown mechanism, since experience has shown that the system is more stable if the programs are shut down once per day in order to clear the databases interface.

They must therefore be re-started again once per day via the Windows Task Scheduler.

8.1 Windows Task Scheduler



The Task Scheduler can be found under Start / Settings / Control Panel.



8.2 The Management Programs in Continuous Operation

	Standard	MODEM call-back
PQManager	Continuous operation	Can shut itself down
PQRS232Server	Can shut itself down	Continuous operation

If error messages are to be printed out immediately:

	With immediate printout of error	Without immediate printout of er-
	message	ror message
PQRvReport	Continuous operation	No continuous operation

8.3 Setting PQManager to Continuous Operation:

Under the tab "PQManager" in the "PQAdmin" part of the program, set the following parameters:





Enter the program into the Task Scheduler with a start time of 00:03.

In MODEM mode, the entry "Offline=1" should be displayed in the PQManager.

8.4 Setting the PQRS232Server to Continuous Operation

Under the tab "RS232" in the "PQAdmin" part of the program, set the following parameters:

CloseEndOfDay =3 Autoclose =0

Enter the program into the Task Scheduler with a start time of 00:04.

8.5 Setting PQRvReport to Continuous Operation:

PQRvReport has the same automatic shutdown mechanisms, and thus the files have to be changed in the same way. You only need to enter the program into the Task Scheduler with a start time of 00:05.

9. Setup and parameterization – PQI-D/DA

9.1 Setup with PQ Para Express



WinPQ-ParaExpress is a small software only for changing the setup and parameters in PQI-D and PQI-DA. This software is free of charge and available on <u>www.a-eberle.de</u>.

All settings for the hardware could be made with this software. With online data you can check the correct connection of the device.

It is possible to start this SW directly from an USB-stick. An installation on PC is not necessary.

Please use all information from chapter 9 if you work with PQ Para Express





9.2 Setup with WinPQ



ID, LAN, Time	Change device name and com port settings. Each device must have a different ID in the PQ-system. The standard ID name after delivery is always "Q1"
Thresholds, connection, IO	Here the transformer factors (VT and CT ratio), the PQ event thre-

(relais, binary inputs)	sholds and the IO settings can be changed.
Measuring parameter / trigger	Thresholds for disturbance recorder and all measurement values for the permanent recorder can be changed here.
All together	All settings of ID, LAN, Time + Threshold connections + Measuring parameters can be read out or sent in one step

Recommendation: setup for different voltage levels and different hardware configurations.

File	Edit Help					
l	A4: PQI- A4: PQI- Time E1CL	D [PQI-D*/4.0.01/u iguration synchronisation commands N structure	Configuration Time synu Station parameter Identification A4: Set Plant (bus 1): Langname-Kanal-3	Chronisation ECL comma Station name PQI-D Se Field (bus 1): Langname-Kan	nds E-LAN structu	re Device (bus 1):
	Öffnen					Device (hus 0):
	onnen					Langname-Kanal-11
	Suchen in:	Data		▼		,
		Blum_Firmware	3.PQI			
	Zuletzt	EN50160_1kV-3	5kV_Firmware13.PQ1			
	verwendete D	EN50160_1kV-3	5kV_FirmwareU2.PQI			-
		EN50160_1kV-3	15kV_HirmwareU3.PQI 15kV Harmonic WPD Swansea No	orth.PQI		
	Desktop	EN50160_35kV-	150kV_FirmwareI2.PQI			•
		EN50160_35kV-	150kV_FirmwareI3.PQI 150kV_FirmwareI12.POI			
	Eigene Dateien	EN50160_35kV-	150kV_FirmwareU3.PQI			
	Eigene Dateien	EN50160_400V	_FirmwareI2.PQI			•
		EN50160_400V	_FirmwareI3.PQI			
	Arbeitsplatz	EN50160_400V	FirmwareU2.PQI			
			_Finiiware03.PQI			5et
			h			
	Netzwerkumgeb ung	Dateiname:	J	<u> </u>	Offnen	
		Dateityp:	PQ parameter (*.PQI)	•	Abbrechen	
	Receive 🗁 Open	Send	▼ Save ▼ Save ▼	t 🧭 Manual		

In this folder you will find for each hardware version and for each voltage level a recommended setup.

- 0 U3 = device with 8 voltage inputs
- 0 I3 = device with 4 voltage + 4 current inputs

All setups are prepared according the latest version EN50160 (2010).

- 0 The factory setup for a new device with 100V voltage inputs is the setup for a typical medium voltage network *"EN50160 – 1kV-35kV"*.
- 0 The factory setup for a new device with 400V voltage inputs is the setup for a typical low voltage network *"EN50160 400V"*.



All parameters and thresholds can be changed at any time. With the icon "Save" different customized setups can be stored and used for all other PQI-D's in the network.

9.3 ID, LAN, Time

In this menu basic settings like device name and communication parameters can be changed.



9.3.1 Time synchronization

With the card "Time synchronization", special settings according the time synchronization of each device can be made. The time signal is connected with time and trigger bus (in this way there is no background program necessary)

POPara EVENTD-ID IC (Programme) Wir	SDOIMASKIDODSesStur, II'S DDF1	
File Edit Help	ו אמייסליא איזייניאאלי איזייא איזיין איז איזיא איז	
		-A 1
		a-eberle
🖃 ≽ A4: PQI-D [PQI-D*/4.0.01/u	Configuration 🗢 Time synchronisation ECL commands E-LAN structure	
	Time synchronisation	
ECL commands	[DCFSync]	-
E-LAN structure	1: DCF: Quality of receive signal	0
OFFLINE_U2	2: Summer-/Wintertime change over (DST) 0=disabled, 1=enabled	▲ 0: Disabled ▼
OFFLINE_I2	3: DCF-operation mode, 0=Single, 1=Slave, 2=Master	▲ 0: Single
OFFLINE_I3	4: Time zone of the device in 0.25-h raster (e.g. 1.0 in case of Germany)	0.00
	5: Time zone of DCF-time code in 0.25-h raster (e.g. 0.5 or 1.0)	1.00
	6: Max. time deviation DCF-edge of rated value [s]	0.05
	7: Release of DCF-time-pulse-display on status LED	▲ 0: Off
	8: DST-Operation mode, 0=local, 1=external	▲ 0: local
	9: Time tolerance [s] for message "TIMESET"	0.5
	10: DCF-Timeout-Zeit [min]	10
	11: Enable time set via ECL	▲ 1: On ▼
	Direction Day of the week	
<	Sonntag	
	Date Possibility to change	date and time
	of the switch over fr	om summer to
		on summer to
	winter and visa vers	а.
	C Summer -> Winter Get Set > Always same	
🐴 Receive 😂 Open 🔹 🕞 Send	▼ Save ▼ @Print @Manual	
CON: 127.0.0.1/1711 A4: PQI-D (PG	QI-D*/4.0.01/u3] 08:58:53 A4: pgiDSTT# 1 2009 PQID=LocalHost;1711	

- 2. Quality of the time signal (only read)
- 3. Summer winter time switch (1= yes / 0= no time change from summer to winter time)
- 4. If the synchronizations bus is used between PQI-D's the setting is "Master" or "Slave"
- 5. Setting of the time zone (Germany = GMT+1)
- 6. Time zone of GPS signal (f. e. GMT = 0)
- 7. Permitted maximum time difference.
- 8. Show time impulse on status LED (0=no/1=yes)
- 9. Time change local or external (0=local own internal time change)
- 10. If a time change larger than this threshold is made, the system will generate one event.
- 11. In this time period (in this example 10 min) the device will not react to an external time signal.

9.3.2 ECL commands

In "ECL commands" it is possible to send short commands or small programs to the PQI-D. These programs will work parallel to the firmware of the device.



Elle Edit Help B C PARAMETER B B POD					
S > Q5: PQ5 0 (PQ5 0*/5.0.01).	Configuration Configuration	ton Time synchronisation 🗢 ECL commands E-LAN structure an Files/WinPQ/Data/PQModem.ed			
CL commands ECL commands ECL commands ECLAN structure OPPLICE_3/2	H 0+1	al,if,time-,a3,120,*,mod,du,a2,<,if,a2*.,time-,a pqiagn1 13 0=1 hw,!	a5,>,p5, ,if,a	,i,+,a3=.,	AA ITI A
-B OHUNE VI	1 951	XITAIT > R	egion to	r the a	inswers from the
-B OHISE'SS	A 1 -	1 8	noitet		
	A 2 = A 3 =	1	Children of the		2000
	A 4 = 7199	7200			
	thun.	Command		Regult	
	20				
	21	# TX2 "%p0\r" -> Status-Test und Wachlen			
	2.2	# BEACHTE: TH1/2 + Kennung MODEM-Station (AA)	i Kennung der		
	2.3	R0='a1,1f,time-,a3,120,*,mod,du,a2,<,if,a2=.,	,time-, a5, >, p5	OR:	
1 18	24				
	2.5	# Testen der Einstellungen			
	2.6	# Start/Stop und Status-Info			
	27	plist", hlist"	Contraction of the		
	× 🖂 🗌		egion to	rinpu	tor ECL comman
	Lood	I 1∃ Step g∃ Al ⊘ Stop 🖬 Save \$∃ Append & V	a keybo	ard, ol	ipboard or from f
Thecaive Copen histerd	Giave	Gittert @Harual			
CON Juny Value PC/1201 05 PGI-0 PM	0.01/5.0.01	ADI 05 Mvai H			

9.3.3 ELAN structure

With "ELAN structure", it is possible to see all with "E-LAN" connected devices in the network in one diagram. In this example different "REG-D" and "PQI-D" devices are connected.

in 11: PQPARASYS C:\Programme\Wit	nPQ\MASK\PQParaSysGer_UI.ddf	
<u>D</u> atei <u>B</u> earbeiten <u>H</u> ilfe		
PARAMETER PQID PQID E: TRAF01 [REG-D/1.80//: PQID PUD [P01-0/30.17/11] P101 [P01-0/30.17/11] P101 [P01-0/30.17/11] P101 [P01-0/30.17/11] P101 [P01-0/30.17/11]	Konfiguration ECL-Kommandos 🖌 ELAN-Struktur	
OFFLINE_V3 OFFLINE_U1 OFFLINE_L1	24V Output : OK LithiumBat. : OK StatusRelay : 1 (OK), coupled Max.L-Level : O COM1 : 115200 hand perity: Off handshake: Yop/Yoff ECL	
	COM2 : 9600 baud, parity: Off, handshake: Xon/Xoff, ECL COM3 : BUS-L : 62K5 baud (2W+), users-L: 2(2), total: 3 BUS-R : 62K5 baud (2W+), users-R: 0(0) Response time: 780ms	
	E-LAN 26.03.2005 13:15:03 Links PQI-D REG-D PQI-D E:1.50 E:1.50	
▲Lesen 🖆 Laden 🕞 Senden	PUI-D PUI-D PUI-D P1.50 PUI-D PUI-D	

9.4 Thresholds, connection, IO

In "thresholds, connection, IO" the transformer factors (VT and CT ratio), the PQ event thresholds and the IO settings can be changed. Example of PQI-DA (8x voltage inputs): We take care of it



9.4.1 Special parameter

In special parameter it is possible to change wrong connections of voltage and current inputs.

e Edit Help					1.00	
PARAMETER					a story	
E > A4: PQI-D [PQI-D*/4.0.01/u	Mains connection/transformer Special ENSOID	0 threshold values Anal	logue output Binary input	Relay output LED display		
Mains connection/bransh Special	Station parameter					
ENS0160 threshold value	(WanderPH5]	Sign voltage tran	sformer	Secondary transforme	r factor 18	
Analogue output Elowy input	Measuring channel 18; [1]	* positive		1		
Relay output	Measuring channel 10; [2]	* positive		1.		
ELED display	Measuring channel 18; [3]	* positive	-	1		
- B OFFLINE US	Measuring channel 18; [4]	a positive	Example:			
- E OFFLINE_12 - E OFFLINE_U3	Measuring channel 10; [5]	fregetve Currentinouts	nuts channels	5 to 8 are		
EL OFFLINE, 13	Measuring channel 18; [6]	negative	currentin	1: A	June Aline Mitch	
	Measuring channel 18; [7]	negative	connected	in the wrong	direction. with	
	Measuring channel 18; [8]	e negative	the SW it i	s possible with	"negative" to	
			change th	e phase angle	with 180°	
	(sbecra)				D (1.
	1*: Input channel reference voltage				Reference volt	age channel
	2*: Mapping UTE (bus1) - channel 14			1	for frequency i	measurement.
	3*: Mapping UZE (bus1) - channel 14 2			2	8	
	4*: Mapping LOE (bus1) - channel 14			2		
	5*: Mapping UNE (bus1) - channel 14			4		
	6*: Mapping U12 (bus1) - channel 14			1		
	7*: Mapping U23 (bus1) - channel 14			2		
	8*: Mapping U01 (bus1) - channel 14			2		
	9*: Mapping U21 (bus1) - channel 14			2		
	10*: Mapping U32 (bus1) - channel 14			2	Hann all innut a	hannals sould
	11*: Mapping U13 (bus1) - channel 14			1	Here all input o	nannels could
	12*: Mapping UIE (bus2) - channel 58			5	be changed to	a different
	13*: Mapping USE (bus2) - channel 58			6	input	
	14*: Mapping USE (bus2) - channel 50			7		
	15*: Mapping UNE (busi2) - channel 50			8		
	16*: Mapping U12 (bus2) - channel 58			s		
	17*: Mapping U23 (bus2) - channel 58			6		
	18*: Mapping U31 (bus2) - channel 58			7		
	19*: Mapping U21 (bus2) - channel 58			6		
	20*: Mapping U32 (bus2) - channel 58			7		01.9
	21*: Mapping UI3 (bus2) - channel 58			5	The "10 min in	terval" can be
	22*) Interval duration of the 10-nm data class			A 10 min	changed here t	0 5, 10, 12, 15
						,,,



9.4.2 EN50160 thresholds

With this card all PQ event thresholds could be changed.

Standard setup are the limits according EN50160 (2010) for a medium voltage network.

[SumPA in]		Par ameters
		P ar ameters
1: HTSP: Swell hysteresis of frequency [Hz]		2.05
2: TFML: Frequency lower threshold narrow tolerance (4	19.5 Hz)	49.5
3: TFNU: Upper threshold narrow tolerance (50.5 Hz)		50.5
4: TPWL: Lower threshold wide tolerance (47.0 Hz)		47.0
5: TFWU: Upper threshold wide tolerance (52.0 Hz)		52.0
6: FFN: Permissible frequency infractions narrow toleran	nce (0,5%)	0.5
7: FC: Middle frequency of ripple control voltage [Hz]		168.0
Limits for flicker, dips, swells,		9.0
⁹ frequency, unbalance		0.5
10	pper concror voltage per day/week) [%].	1.0
11: NSIGY: Admissible number of days with to often viol	ation of the 3s-ripple control voltage/year	10.0
12: HYSPV: Hysteresis of half period values (1.0%)		1.0
13: TVS: Fast voltage change/swell (106.0 %)		106.0
14: TVD: Fast voltage change/dp (94.0 %)		94.0
15: NFVCD: Permissible number per day (10)	10	
16: NFVCY: Permissible number per year (3650)	3650	
17: TDD: Threshold deep dp (90.0 %)	85.0	
18: NDOY: Permissible number per year (100)	1000	
19: TSI: Threshold voltage interruption (40.0 %)	10.0	
20: DSI: Time criterion short/long (Sec.)		180
21: NSIV: Permissible number of short interruptions per year (30)		200
22: NLTY: Permissible number of long interruptions per ye	ear (10)	50
23: TOV: Threshold temporary overvoltage (170.0 %)		200.0
24: NOVY: Permissible number per year (10)		10
25: TSVCL: Slow voltage change lower threshold (90.0 *	8)	90.0
26: TSVCU: Upper threshold (110.0 %)		110.0
27: PSVC: Permissible frequency per week (5.0%)		5.0
28: TUU: Threshold voltage unbalance (2.0 %)	3.0	
29: FUU: Permissible frequency per year (5.0 %)		5.0
30: TTHD: Threshold total harmonic distortion (8.0 %)		8.0
31: FHD: THD+Harmonic Permissible frequency per week	k(5.0 %)	5.0
32: TPST: Threshold flicker short term (1.0)		1.0

9.4.3 Transnostic

The function "Transnostic" can be used to analyze the kind and direction of disturbances.

A detailed description of this function you will find in the user manual WinPQ.

👪 PQPara.EXE/STD-ID [C:\Programm	ne\WinPQMASKIPQPARACONF_13.DDF]	
File Edit Help		
PARAMETER	[PQPara] Loaded from file >C:\Programme\WinPQ\MASK\PQPARACONF	F_I3.DDF< a-eberle
MODEM	Mains connection/transformer Special EN50160 threshold values 🔍 Transnostic Analogue output	Binary input Relay output
OFFLINE_U2	[Transnostic]	Parameters
OFFLINE_U3	1: Threshold voltage dip/UC or /(UC/1.73) [%]	94.0
⊡ <u>Off.</u> A: Offline [PQI-D/5	2: Threshold over voltage/UC or /(UC/1.73) [%]	106
Mains connecti	3: Threshold neutral to earth /(UC/1.73) [%]	30
EN50160 thres	4: Minimum voltage for direction decision /(UC/1.73) [%]	5
Analogue outp 🗸	5: Voltage hysteresis /UC or /(UC/1.73) [%]	2
	6: Current threshold /INOM [%]	120
	7: Maximum current for direction decision /INOM [%]	500.0
	8: Reactive power threshold for dip direction decision/(INOM *UC*1.73) [%]	20.0
	9: Reactive power threshold for swell direction decision /(INOM *UC*1.73) [%]	5.0
Teceive Den -	Send V Save V Manual	
Offline A: Offlin	ne [PQI-D/5.0.00/i3] [10:25:09 A4: pqiLED## 26 [OFFLINE_I3=PQF	ParaConf_13.ddf //

Possible messages from the system:

- :TRANSNOSTIC: Short circuit phase-to-earth own mains (behind measurement point) [TN_K1P]
- :TRANSNOSTIC: Short circuit phase-to-phase own mains (behind measurement point) [TN_K2P]
- :TRANSNOSTIC: 3-phase short circuit own mains (behind measurement point) [TN_K3P]
- :TRANSNOSTIC: Short circuit front of measurement point [TN_KIM]
- :TRANSNOSTIC: Peak own mains (behind measurement point) [TN_PEX]
- :TRANSNOSTIC: Peak front of measurement point [TN_PIM]



9.4.4 Option M94/M95 – analogue output

If the hardware option M94 or M95 is installed in the PQI-D it is possible to deliver any measurement value with an 0 - 20mA output signal.

india sconnoccion	n/transformer Speci	al EN50160 threshold values	Transnostic 🗢	Analogue outpu	t Binary input	Relay output LE	D display
Analogue I/O		[1	
		Allo	cation		A	djustment time	
CHANNEL; [1]		A V	8576=P1]			
CHANNEL; [2]		A	3577=P2	1	Alloca	tion of	measure-
CHANNEL; [3]		.▲ (▼	3578=P3		ment	values	
CHANNEL; [4]		×.	D=Off		Even	ala	
CHANNEL; [5]		× ()=Off		Exam	<u>sie:</u>	
CHANNEL; [6]		▲ (▼)=Off	1	P L1 =	= cannel 1	
CHANNEL; [7]		A C	D=Off		DI2_	channol	2
CHANNEL; [8]			D=Off		F LZ =		2
Transfer functio	חת						
[AnaFkt]	X0 (Input)	Y0 (Output/-1.2+1.2	2) X1 (Input)	Y1 (Outp	ut/-1.2+1.2)	X2 (Input)	Y2 (Output/-1.2+1.2)
CHANNEL; [1]	-200000	-1	1				
		•	*	1		200000	1
CHANNEL; [2]	0	0	1	1		200000 1.05	1 1.05
CHANNEL; [2] CHANNEL; [3]	0	0	1 1 1	1 1 1		200000 1.05 1.05	1 1.05 1.05
CHANNEL; [2] CHANNEL; [3] CHANNEL; [4]	0 0 0	0 0 0	1 1 1 1	1 1 1 1		200000 1.05 1.05 1.05	1 1.05 1.05 1.05
CHANNEL; [2] CHANNEL; [3] CHANNEL; [4] CHANNEL; [5]	0 0 0 0	0 0 0 0 0	1 1 1 1 1	1 1 1 1 1 1		200000 1.05 1.05 1.05 1.05	1.05 1.05 1.05 1.05 1.05
CHANNEL; [2] CHANNEL; [3] CHANNEL; [4] CHANNEL; [5] CHANNEL; [6]	0 0 0 0 0 0	0 0 0 0 0 0	1 1 1 1 1 1 1	1 1 1 1 1 1 1		200000 1.05 1.05 1.05 1.05 1.05 1.05	1 1.05 1.05 1.05 1.05 1.05 1.05
CHANNEL; [2] CHANNEL; [3] CHANNEL; [4] CHANNEL; [5] CHANNEL; [6] CHANNEL; [7]	0 0 0 0 0 0	0 0 0 0 0 0 0	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1		200000 1.05 1.05 1.05 1.05 1.05 1.05 1.05	1 1.05 1.05 1.05 1.05 1.05 1.05 1.05

X0 =	Lower value (e200 000 = -200kW)
Y0 =	Lower output signal PQI-D (f.e1 = -20mA)
X1; Y1 =	Central value (input necessary f.e. X1=0 / Y1=0)
X2 =	Upper value (f.e. 200 000 = +200kW)
Y2 =	Upper output value PQI-D (f.e. 1 = 20mA)

9.4.5 Option M97/M98 analogue inputs

The options M97 and M98, provides four additional analogue inputs. Is is possible to connect voltage signals from 0 to 10V or current signals from -20mA...0...+20mA.

Example:

Channel 2: radiation (W/qm) - input 4 - 20mA = output in WinPQ: 0 - 1600 W/qm

The value = 1 is equivalent to 20mA (or 10V)

(AnabilO)	lodeyt:	Unit of	neasure Trput o	ignal normalized	Transfer function	Lover threshold	Upper threshold
[1] JANNARD		*	0		10f	-2.8	+2.8
DAMANEL: (23		witten			2 port	-2.8	+2.0
Devents, (3)		0			* OF	4.0	+2.0
Demonstra (4)		and a	0		* on	2.9	+2.0
					Limit for alar	ming, if the an over or under k	alogue inpu ower or
7 point characteristic					Limit for ala signal goes o upperthres	rming, if the an over or under lo hold	alogue inpu ower or
) port characteristi Analeffic]	PC (semaland eput value)	Pl (masted value)	Pi (varnalije) njuž valari)	P1 (manual val	Limit for alar signal goes o upperthres	ming, if the an over or under lo hold	alogue inpu ower or
) post characherolo Inschefte) Swindels [1]	PE (surrindeed equal value) 0	P0 (measured value) 0	P) (verseloe(spot veloe) 1	PI (moved rul	Limit for alar signal goes o upperthres	ming, if the an over or under lo hold	ower or
) port characherolo Analoffic] SwinkEL [1] SwinEL [2]	PS (sumalized eput value) 0 0	PO(measured value) 0	Pi (namalood ngut valari) 1 0.2	PL (measured roll)	Limit for alar signal goes o upper thres	ming, if the an over or under lo hold	ower or
Typote characteristic Anadorist] SwendetL [1] SwendetL [2] SwendetL [3]	P0 (nemalized read value) 0 0	70 (newsred -star) 0 0	Pi (nameljej njut vele) i i i	PL (measured roll)	Limit for alar signal goes o upper thres	ming, if the an over or under lo hold	ower or

The analogue inputs can be recorded in these data classes:

200ms; 3 sec; 10 min; 2 h interval.

Additional there are 200ms extreme values available in 3 sec; 10 min; 2 h interval

Overview 0,2-second average 3-second-average 10-minute-average/extreme 2-hour average Daily statistics Trigger thresholds External-trigger-out Recorder A Recorder A Recorder C Recorder S Events

Average and spectral values of	f important mains parameters:	
Recording points 0	ording model circular 🔹 🔿 📴 Send 🖀 Menu 🔹	
[C3s] ChNum=4	Channel ID (measured value)	
CHN_1	[14848]: AI_1/Analog input 1 [Fit]	
CHN_2	[14849]: AI_2/Analog input 2 [Flt]	
CHN_3	(14850): AI_3/Analog input 3 (Fit)	
CHN_4	(14851): AI_4/Analog input 4 (Fit)	
CHN_5	[0]: 0ff	
CHN_6	(0): 0ff	
CHN_7	100 : 010	
CHIN_8		
Y		Γ
Frequency Voltage Curren	t Power Direction harmonic active power Phase U1E-n - I1-n (n=240) Phase U2E-n - I2-n (n=240) Phase U3E-n - I3-n (n=240) 🗢 Analog input Analog extreme valu	es Voltage harmonics Current harmonics
[AE_35] 4		5election:;
14848: Analog input 1 [-]		✓ AI_1
14849: Analog input 2 [-]		✓ AI_2
14850: Analog input 3 [-]		✓ AI_3
14851: Analog input 4 [-]		✓ AI_4



9.4.6 Binary inputs

On this card it is possible to change the name and the status of all binary inputs. The binary inputs could be inverted (no signal = 1 / signal = 0) or set permanent high or low. If the hardware option M96 is installed the sampling frequency of all binary inputs is 10.24 kHz, we suggest to use the debouncing filter. With M00 the sampling interval of binary inputs is 4 milliseconds.

Mains connection/trans Statistics: Debounce cycle: 5	former Special EN50160 thre:	shold values Transnostic Analogue outpu	t 🔍 Binary input Relay output	LED display
Binary in				
[BinIN]	Name	Logic state: Voltage on input	Debounce [M96] falling edge	Debounce [M96] rising edge
CHANNEL; [1]	Protection 1	inverted	With debouncing	Without debouncing
CHANNEL; [2]	Protection 2	≜ High	With debouncing	Without debouncing
CHANNEL; [3]	Protection 3	Low	With debouncing	Without debouncing
CHANNEL; [4]	Name	▲ not inverted	With debouncing	Without debouncing
CHANNEL; [5]	Name	▲ not inverted	With debouncing	Without debouncing
CHANNEL; [6]	Name	▲ not inverted	With debouncing	Without debouncing
CHANNEL; [7]	Name	not inverted	With debouncing	 Without debouncing
CHANNEL; [8]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [9]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [10]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [11]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [12]	Name	not inverted	With debouncing	▲ Without debouncing
CHANNEL; [13]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [14]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [15]	Name	not inverted	With debouncing	Without debouncing
CHANNEL; [16]	Name	not inverted	With debouncing	Without debouncing
	sối, T	ab: SQL 😰 Tab: User 🖗 Tab: RS23 ut registration code Display/change of licence code Folder user setup C:\Programme\WinPQ\ PQStart desktop	2 Deat Tab: INU setup	Select PQStart functions Recorder PQ overview PQ overview Pd overview Character and a standard a standar
o display th ogether wi he option outs" must b	the binary chann the the record frecord binary the activated.	ame of company stadtwerke Ahorn els mme\WinPQ\TMP\ ers in- er setup er setup er setup of lie for all programs	3	CP Online data Reg-D Basic functions Reg-D parallel operation Analogue/binary IO Trafo monitoring Add-on devices D, LAN, Time Start: comm.exe Start: PQAdmin Start: PQAdmin Demo: Guide

9.4.7 Messages on Relays and LED's

Alarms or messages could be reported on any relay or LED. The status relay is always used for the "watch dog function" of the PQI-D. The function of the status relay is inverted. Relay is always on and opened if the PQI-D has an error.

ile Edit Help							
Constant Sector Cons	Mains conne	ction/transformer S	pedal 10150 160 threshold values	Analogue output Binary input	Relay outs	x4 UED display	a etterie
	[RELOW]	COND1	COND2	COND3	COND4		CONDS
	STATE	2-2-20	3+ConErr	4+LanErr	0-NoSe	pnal	0-NoSignal
	Relay [1]	13=MSRRecA	14-MSRRed	0+hipSignal	C-NoSe	gnel	C-NoSignal
E actor	Relay [2]	C-NoSignal	C-NoSgnal	0=NoSignal	\$0-tess	pnal	to-NoSignal
- MODEM	Relay [3]	C-NoSignal	0-NoSignal	0-NoSignal	to-NoSe	gnal	0-NoSignal
- OFFLIKE_U1	Relay [4]	C-NoSignal	20-NoSonal	Co-NoSignal	-0-NoSe	anal	C-NoSignal
- (0) OPFL37E_32 - (0) OPFL37E_33 - (0) OPFL37E_33 - (0) PQID			Conditions (There are a	up to 32) to activ local menu to su	/ate the ipport t	e Relays the sele	s/LEDs. ction.
G OFFLIXE_J2 G OFFLIXE_UJ G OFFLIXE_J3 G RQD	r ()		Conditions (There are a	up to 32) to activ local menu to su	ate the	e Relay: the sele	s/LEDs. ction.
G OFFLIXE_J2 G OFFLIXE_UJ G OFFLIXE_J3 G RQD	finary logic [RelDut]	Name	Conditions (I There are a	up to 32) to activ local menu to su roding time (se	/ate the ipport t	the sele	s/LEDs. ction.
G OFFLIKE J2 G OFFLIKE UJ G OFFLIKE J3 G OFFLIKE J3 G RQID	Finany logic [RelOut] STATE	Name Kanol-17	Conditions (I There are a Operating mode	up to 32) to activ local menu to su rolding time (se 1	State=0	state=1	s/LEDs. ction.
G OFFLIKE J2 G OFFLIKE UJ G OFFLIKE J3 G OFFLIKE J3 G RQID	finary logic [RefDud] STATE Relay [1]	Name Ranal-17 Kanal-18	Conditions (I There are a Operating mode	up to 32) to activ local menu to su relding time (se i eo	State -0	state-1	s/LEDs. ction.
G OFFLIXE_J2 G OFFLIXE_UJ G OFFLIXE_J3 G PQID	Finary logic [RelOut] STATE Relay [1] Relay [2]	Name Reval-17 Canal-18 Canal-19	Conditions (I There are a Operating mode Monostable, level retrigger Monostable, level retrigger	up to 32) to activ local menu to su rolding time (se 1 60 1	State -0	State=1	s/LEDs. ction.
G OFFLIXE_J2 G OFFLIXE_J3 G OFFLIXE_J3 G POID	Finary logic [RelOut] STATE Relay [1] Relay [2] Relay [3]	Name Caroli-17 Caroli-18 Caroli-19 Canal-20	Conditions (I There are a Operating mode Monostable, level retrigger Monostable, level retrigger Monostable, level retrigger	up to 32) to activ local menu to su reading time (se i 60 1 1	State =0	state=1	s/LEDs. ction.
G OFFLIKE J2 G OFFLIKE J3 G OFFLIKE J3 G POD	Finary logic [RelOut] STATE Relay [1] Relay [2] Relay [3] Relay [4]	Name Caroli-17 Caroli-18 Caroli-19 Canol-20 Canol-21	Conditions (I There are a Operating mode Monostable, level retrigger Monostable, level retrigger Monostable, level retrigger Monostable, level retrigger	Iocal menu to su local menu to su holding time (se i 60 i 1 i 1	State =0	State-1	s/LEDs. ction.

With a pull down menu in "conditions1 ...", it is possible to select from 142 trigger signals. Up to 32 conditions could be "or linked"

121=Trigger signal: wave shape U1 [TrgET1] 122=Trigger signal: wave shape U2 [TrgET2] 123=Trigger signal: wave shape U3 [TrgET3] 124=Trigger signal: wave shape U12 [TrgET12] 125=Trigger signal: wave shape U23 [TrgET23] 126=Trigger signal: wave shape U31 [TrgET31] 127=Trigger signal: wave shape UNE [TrgETN] 128=Trigger signal: lower threshold half period voltage positive sequence system [TrgLP5] 129=Trigger signal: upper threshold half period voltage Positive sequence system [TrgUPS] 130=Trigger signal: upper threshold half period voltage negative sequence system [TrgUNS] 131=Trigger signal: upper threshold half period voltage zero system [TrgUZ5] 132=Trigger signal: lower threshold half period-current I1 [TrgLT1_I] 133=Trigger signal: lower threshold half period-current I2 [TrgLT2_I] 134=Trigger signal: lower threshold half period-current I3 [TrgLT3_I] 135=Trigger signal: upper threshold half period-current I1 [TrgUT1_I] 136=Trigger signal: upper threshold half period-current I2 [TrgUT2_I] 137=Trigger signal: upper threshold half period-current I3 [TrgUT3_I] 138=Trigger signal: upper threshold half period-current IN [TrgUTN_I] 139=Trigger signal: half period-current jump I1 [TrgST1_I] 140=Trigger signal: half period-current jump I2 [TrgST2_I] 141=Trigger signal: half period-current jump I3 [TrgST3_I] 142=Trigger signal: half period-current jump IN [TrgSTN_I]



9.5 Measuring parameter / trigger

In this menu the highest number of parameters are available. All recorders (oscilloscope, 10ms rms, ripple control) and all parameters for permanent measurement can be changed in this menu. We suggest to use one of our standard setup files for parameterization of PQI-D´s



RecA/B disturbance recorder:

The mode "Linear" (use of 48MB additional memory on DSP processor) has to be selected (hatched bar background in memory overview)
 It is not possible to see the background memory (48MB) in this overview picture.

Permanent data (3 sec; 10min, 2h) and events:

• These recorder data classes are working with an circular memory (first in first out)

9.5.1 Status of LED's, relays and binary inputs

LED: 📕 🖉 🖉 🖉 RELAY: 📕 🖉 🖉 BINARY: 🖉 🖉 🖉 🗖

This display shows the status of all LED's, relays and binary inputs.

These variants are possible:

	Channel is not active		Channel is active
	Channel is fixed to not active		Channel is fixed to active

9.5.2 Online panel

With the online panel it's possible to check the correct connection of voltage and current inputs.



9.5.3 Vector diagram





9.5.4 Parameterization of continues classes

0,2-Sek.-Mittel 3-Sek.-Mittel 10-Min.-Mittel/Extrem 2-Std.-Mittel

On the card "10min average/extreme", up to 2000 different parameters available for permanent recording. The maximum number of parameters is limited to 1024 parameters. The recorder time in the circular memory depends on the number of different measurement values.



POPara.EXE/STD-ID [C:\WinPO\MASK\	OParaClass 13.CPP*1		
	grandoless_see j		
			A
	[TPQIPanOnlPar	nel] C3s ID= [14.03.2008 11:54:22.4870] RR=469 ERR=0	NI=197264 AI=196790
🖻 🄶 Q5: PQI-D [PQI-D*/5.0.01/i:	Overview 0.2-sec average 3-sec av	rerage 😑 10-min average/extreme 2-hour average Daily st	atistics Trigger thresholds Extern-trigge 💶 🕨
Overview	Average and extreme values in the 10	-min interval	
	Recording points 450	mode Circular	1112 kB [3d 03:00:00]
10-min average/extreme	[C10m] ChNum=55 Chann	el ID (measured value)	A
	CHN_1 [384]	: F/Line frequency [FLT]	
Trigger thresholds	CHN_2 [1152]: U1E/RMS value of u1E [FLT]	
Extern-trigger-out	CHN_3 [1153]: U2E/RMS value of U2E [FLT]	
Recorder A	CHN_4 [1154]: U3E/RMS value of u3E [FLT]	
Recorder B	CHN_5 [1155]: UNE/RMS value of uOE [FLT]	
Recorder C	CHN_6 [1156]: U12/RMS value of u12 [FLT]	
Events	CHN_7 [1157]: U23/RMS value of U23 [FLT]	
POID2	CHN_8 [1158]: U31/RMS value of u31 [FLT]	
MODEM	CHN_9 [1163]: THD12/Total harmonic distortion of u12 [FL	T]
OFFLINE_U1	CHN_10 [1164]: THD23/Total harmonic distortion of U23 [FL	T]
OFFLINE_I1	CHN_11 [1165]: THD31/Total harmonic distortion of u31 [FL	T] -
OFFLINE_02	Frequency Voltage O Current	Power Frequency (extreme) Voltage (extreme 1/2-period) Vo	ltage (extreme 200ms) Current (extreme
OFFLINE_U3	[I_10M] 29		Selection:;
PQID	8064: RMS value of i1 [A]		√ I1
	8065: RMS value of I2 [A]		√ I2
	8066: RMS value of i3 [A]		√ 13
	8067: RMS value of iS/N [A]		10
	8068: RMS average value of I1, I3, I3	[A]	IM
	8069: Total harmonic distortion of i1 [%	%]	✓ THD1
	8070: Total harmonic distortion of I2 [9	%]	✓ THD2
	8071: Total harmonic distortion of i3 [%	%]	✓ THD3
	8072: Total harmonic distortion of iS/N	[%]	THDN
	8073: Total harmonic current von i1 [A]]	THC1
	8074: Total harmonic current von I2 [A	J	тнс2
📲 Receive 🖆 Open 🔹 Send 👻	Save Save Manual		
CON: Joerg-Vista-PC/1701 05: PQI-D [P0	I-D*/5.0.01/i3]	Q5: FREAD. pqi.2 5341184 8 PQID1=LocalHost;170)1



9.5.5 Parameterisation of disturbance recorder

All thresholds for the disturbance recorder (oscilloscope & 10ms rms recorder) can be changed on card "Trigger thresholds".

Overview 0.2-sec average 3-sec average 10-min average/extreme 2-hour average Daily statistics • Trigger thresholds Extern-	rn-trigger-out Recorder A Recorder B Recorder C Recorder S Events
Control: recorder/statistics (bus 1)	Valuare
Lingder inden i 1. Trianer sine i dualities [s]	values.
Ingger signal ower une [s] Secondary hysteraels [Ma]	0.05
2: Frequency rijskeresis [nz]	5.55
3: Prequency upper arreshold [Hz]	50.50
*: Prequency lower direction [nz]	93.50
5: Frequency jump [rtz/s]	0.50
6: Hysteress for 12-period-voltage [16]	Thresholds
7: upper chreshold [%], line-co-earch-volcage	
8: Lower threshold, line-to-earth-voltage	Frequency
9: RMS jump threshold [%], ine-to-earth-voltage	Voltage line to earth (lower + upper)
10: Phase jump threshold /º, line-to-earth-voltage	voltage line-to-earth (lower + upper)
11: Upper threshold [%], NE voltage	Voltage line-to-line (lower + upper)
12: RMS jump threshold [%], NE voltage	RMS iumn
13: Upper threshold [%], line-to-line-voltage	
14: Lower threshold [%], line-to-line -Voltage	NE voltage
15: RMS jump threshold [%], line-to-line -Voltage	Phase jump
16: Threshold wave shape trigger [%], line-to-earth-voltage	> Wave shape trigger
17: Threshold wave shape trigger[%], line-to-line-voltage	
18: Threshold wave shape trigger [%], NE voltage	Balanced components
19: Upper threshold positive sequence system [%]	Trigger by Current thresholds
20: Lower threshold positive sequence system [%]	East current DMS change
21: Upper threshold negative sequence system [%]	
22: Upper threshold zero sequence system [%]	Ripple control voltage
23: Hysteresis for current RMS values [%]	
24: Upper threshold [%], phase current	
25: Lower threshold [%], phase current	0.00
26: RMS jump threshold [%], phase current	20.00
27: Upper threshold [%], sum current	50.00
28: RMS jump threshold [%], sum current	20.00
29: FC: Middle frequency of ripple control voltage [Hz]	168.0
30: Triggerschwelle Recorder S [%], bus 1	1

9.5.6 Parameterisation for disturbance recorder

With the cards "Recorder A" and "Recorder B" the recorder length, the pre recorder time can be changed.

E@ PARAMETER	[TPQIPa	nOnlPanel] C3s ID= [15.03.2	008 06:05:49.4	550] R	R=25 ERR=0 NI=2	19089 AI=219064	a-eberle
	Overview 0.2-sec average 3-se	c average 10-min average/extr	eme 2-hour ave	rage	Daily statistics Trig	ger thresholds Extern-trig	gger-out Recc 4 >
0.2-sec average	Recording points 10	ding mode Linear 🔍 🗨 🕒	Send Send	lenu	332/1	112 kB	
10-min average/extreme							
Daily statistics	[RecB] 17		Selection:;	*	[RecBSetup]		Values:
Fitters trigger out	775: I1 half period RMS value [A]		✓ I1s01		1> Record length (s	ample points)	300
Direct selection of	6: I3 half period RMS value [A]		✓ I2s01	-	2> Pre-trigger (sam	ole points)	100
ocordor valuos:	7: I3 half period RMS value [A]		✓ I3s01	- 1	3> Re-trigger (samp	le points)	Deparder perameters:
ecoluel values.	8: IN not period RMS value [A]		V INs01	-	4> Maximum record	er number per sequence	Recorder parameters:
f.e. 10ms recorder)	active power, RMS valu	ie [W]	V Ps01	- 1			recorder length
, /altana augurat gaal	1: Main reactive power, RMS va	alue [Var]	✓ Qs01	-			> pre trigger time
voltage, current, real	2: Mains apparent power, RMS v	value [VA]	✓ Ss01				 re trigger time
ower, frequency	3: Frequency, half period value	[Hz]	✓ Fs01				may recorder per co
	4: Gradient of frequency, half p	eriod [Hz/s]	✓ dFs01	-			Fillax. Tecorder per se-
4	Trigger mask	Trigger 1 32	Trioger	33 64		Trigger 65, 96	quence
	Condition; [1]	Deviation lower threshold	ILLIE De	viation	awar threads and T.1		
	Condition; [2]	Deviation lower threshold		viatio	Triagor	conditions	can be activated and
	Condition; [3]	Deviation lower threshold	IU3E		i iiggei		
	Condition; [4]	Deviation lower threshold	1012		deactiva	ated here:	
	Condition; [5]	Deviation lower threshold	l U23 🗸 De	viatio	\triangleright	East chang	e of the RMS of voltage
Receive 🖉 Open 🕒 Send	Save Save Save	nual			Ś	Phase ium	ns
US: PUI-D [F	QFD75.0.017(3)	JU5: FREAD, pqi/2 917504	8			Triggor by	P ³ Current thresholds
					\succ	Fast currer	nt KIVIS change
				1	~	Dimonicime	it (folling or right odge)



9.5.7 Parameterization of harmonic recorder RecC

If the values of any harmonic or the THD exceed the thresholds, a list of the frequency spectra from voltage and current are stored. The number of harmonics up to the 50th can be selected.

PQPara.EXE/STD-ID [C:\WinPQ\MASK\	PQParaClass_I3.CPP*]		
<u>F</u> ile <u>E</u> dit <u>H</u> elp			
⊡-∰ PARAMETER ⊡ 🗑 PQID1	[TPQIPanOnlPanel] C3s ID= [15.03.20	008 06:11:10.6665] RR=132 ERR=0 NI=21	19196 AI=219064
🖻 ≻ Qِ5: PQI-D [PQI-D*/5.0.01/i:	10-min average/extreme 2-hour average Daily statistics Trigger	r thresholds Extern-trigger-out Recorder A	Recorder B 🗢 Recorder C Record
Overview	Recorder C (10-min values of 240 harmonic in the case of a limit va	alue infraction)	
3-sec average	Recording points 10 Recording mode Circular	▶ Send Menu ▼ 2/1112	kB
10-min average/extreme 2-hour average			
Daily statistics	[RecC] 11	Selection:; ^ [RecCSetup]	Values:
Extern-trigger-out	028: Harmonics: U3E-n, 10-min-values [V]	✓ U3EH_10M 1> First harmonic	2
Recorder A	029: Harmonics: U0E-n, 10-min-values [V]	✓ UNEH_10M 2> Number harmo	nics 24
Recorder C	030: Harmonics: U12-n, 10-min-values [V]	✓U12H_10M	17
Recorder S	031: Harmonics: U23-n, 10-min-values [V]	✓U23H_10M	
PQID2	032: Harmonics: U31-n, 10-min-values [V]	✓ ^{U31H_10M} Number	of harmonics:
OFFLINE U1	077: Harmonics: I1-n, 10-min-values [A]	I1H_10M	s and s arth
OFFLINE_I1	078: Harmonics: I2-n, 10-min-values [A]	In this	example: 2 nd up to 25 nd
OFFLINE_U2	079: Harmonics: I3-n, 10-min-values [A]	I3H_10M harmon	ic
OFFLINE_U3	080: Harmonics: IS/N-n, 10-min-values [A]	INH_10M -	
POID	Trigger mask		
	[TriggerC1]	Recorder C	
4 m	Condition; [1]	✓ Deviation THD U1E	
	Condition; [2]	✓ Deviation THD U2E	Trigger conditions
	Condition; [3]	✓ Deviation THD U3E	to start a har
	Condition; [4]	✓ Deviation THD U12	
	Condition; [5]	✓ Deviation THD U23	monic record
	Condition; [6]	✓ Deviation THD U31	
Receive 🗳 Open 🕒 Send 🔻	Save Save Manual		
CON: Joerg-Vista-PC/1701 Q5: PQI-D [P0	Q5: FREAD. pqi.2 4423680) 8 TriggerC1	

9.5.8 Parameterisation of RecS

The "recoder S" is designed to record the ripple signal voltage in the network.

POPara.EXE/STD-ID [C:\WinPO\MASK\	PQParaClass I3.CPP*]				
File Edit Help					
	[TPQIPanOnlPanel] C3s ID= [15.03.2008 06:13:31.7620] RR=179 ERR=0 NI=219243 AI=219064				
Q5: PQI-D [PQI-D*/5.0.01/i: Overview 0.2-sec average 3-sec average 10-min average/extreme 10-min average/extreme	2-hour average Daily statistics Trigger thre Recorder S (200ms-values) Recording points 3 Recording mode 6	sholds Extern-trigger-out Re	corder A Recorder B Recorder C • Recorder S E	vents 4	
Daily statistics	[RecS] 7	Selection:;	[RecSSetup]	Values:	
Extern-trigger-out	13440: US1 200-mse RMS value [%]	✓ US1ms200	1> Recorder length Recorder S, bus 1	600	
Recorder A	13441: US2 200-mse RMS value [%]	✓ US2ms200			
Recorder B	13442: US3 200-mse RMS value [%]	✓ US3ms200			
Recorder S	13443: USNE 200-mse RMS value [%]	USNEms200	Desenden len ath in a		
PQID2	13444: US12 200-mse RMS value [%]	✓ US12ms200	Recorder length in s	econas	
OFFLINE U1	13445: US23 200-mse RMS value [%]	✓ US23ms200	In this example: 600) sec.	
OFFLINE_I1	13446: US31 200-mse RMS value [%]	✓ US31ms200			
OFFLINE_U2					
OFFLINE_I3					
IIII PQID					
III → III					
Receive 🗳 Open 🕒 Send 🔻	Save Save Manual				
CON: Joerg-Vista-PC/1701 Q5: PQI-D [P0	QI-D*/5.0.01/i3] Q5: F	READ. pgi.2 65536 8	PQID1=LocalHost;1701	//	

The frequency of the ripple voltage signal can be changed on card "Trigger thresholds". In our example the frequency is adjusted to 168Hz. The frequency can be selected from 5Hz to 2.500Hz.

Overview 0.2-sec average 3-sec average 10-min average/extreme 2-hour average Daily statistics 🗢 Trigger thresholds Extern-trigger-out Recorder A Reco	order B Recorder C Recorder S Events
Control: recorder/statistics (bus 1)	
[TriggerTresh]	Values:
23: Hysteresis for current RM5 values [%]	2.00
24: Upper threshold [%], phase current	200.00
25: Lower threshold [%], phase current	0.00
26: RMS jump threshold [%], phase current	20.00
27: Upper threshold [%], sum current	50.00
28: RMS jump threshold [%], sum current	20.00
29: FC: Middle frequency of ripple control voltage [Hz]	168.0
30: Triggerschwelle Recorder S [%], bus 1	



9.5.9 Parameterization of power quality events

According to European Standard EN50160, all measurement values should be evaluated phase-earth in low-voltage networks and phase-phase in medium-voltage networks. In our standard setup for a MV network only phase to phase events are recorded.

🔥 PQPara.EXE/STD-ID [C:VI	ogramme\WinPQ\Data\EN50160_1kV-35kV_Firmwarel;	3.PQJ]		
File Edit Help				
PARAMETER	[LOAD:E	N50160_1kV-35kV_FirmwareI3.PQI]U	ISER: Blum DATE: 05.08.2009 15:52:0	6 a-eberle
MODEM	Overview 0.2-sec average 3-sec average 10-min av	erage/extreme 2-hour average Daily stat	tistics Trigger thresholds Extern-trigge	r-out Recorder A Recorder B Recorder (💶 🕨
OFFLINE_02	Event: (Mains events: Frequency deviation, voltage dip,	etc.)		
OFFLINE_U3	Recording points Recording mode Circular	Send 😭 Menu 👻		Need=0 Avail=0 Byte
OFFLINE_I3 Offline [P(
0.2-sec a	Selection:			
3-sec ave	[EventMask] Events 132	Events 3364	Events 6596	Events 97128
10-min av	Event; [1]	Active status change trigger-word#2	Swell U31, stop event, bus 1	Voltage interruption U12, stop event, t
🗉 Daily stat	Event; [2] V System reset, start event	✔ Status change recording data classes	Dip U1E, start event, bus 1	Voltage interruption U23, start event, I
Extern-tr	Event; [3] V System reset, stop event	State change: binary output	Dip U1E, stop event, bus 1	Voltage interruption U23, stop event, t
Recorder	Event; [4]	State change: external time sync	Dip U2E, start event, bus 1	Voltage interruption U31, start event, I
Recorder	Event; [5] J Station error flags	DSP buffer overflow	Dip U2E, stop event, bus 1	Voltage interruption U31, stop event, t
Recorder	Event; [6] Frequency valid	Reset Event evaluation, bus 1	Dip U3E, start event, bus 1	Slow voltage change U1E, bus 1
Evens	Event; [7] Frequency unvalid	Fivent evaluation, start event, bus 1	Dip U3E, stop event, bus 1	Slow voltage change U2E, bus 1
	Event; [8]	Event evaluation, stop event, bus 1	Dip U12, start event, bus 1	Slow voltage change U3E, bus 1
	Event; [9] Set time	New record Recorder A, bus 1	Dip U12, stop event, bus 1	Slow voltage change U12, bus 1
	Event; [10]	New record Recorder S, bus 1	Dip U23, start event, bus 1	✓ Slow voltage change U23, bus 1
	Event; [11]	New record Recorder B, bus 1	Dip U23, stop event, bus 1	Slow voltage change U31, bus 1
	Event; [12]	Status message transnostic	Dip U31, start event, bus 1	Infraction flicker long term U1E, bus 1
	Event; [13]	New record Recorder C, bus 1	Dip U31, stop event, bus 1	Infraction flicker long term U2E, bus 1
	Event; [14]	V Overvoltage UIE, start event, bus 1	Deep dip U1E, start event, bus 1	Infraction flicker long term U3E, bus 1
	Event; [15]	V Overvoltage UIE, stop event, bus 1	Deep dip U1E, stop event, bus 1	✓ Infraction flicker long term U12, bus 1
	Event; [16]	Vervoltage U2E, start event, bus 1	Deep dip U2E, start event, bus 1	Infraction flicker long term U23, bus 1
	Event; [17]	Overvoltage U2E, stop event, bus 1	Deep dip U2E, stop event, bus 1	Infraction flicker long term U31, bus 1
	Event; [18]	Overvoltage U3E, start event, bus 1	Deep dip U3E, start event, bus 1	Infraction voltage unbalance, bus 1
	Event; [19]	Overvoltage LI3E, stop event, hus 1	Deen din LI3E, ston event, bus 1	Infraction THD of LUE, bus 1
	Event; [20] Initialisation of new day	Overvoltage LINE, start event, bus 1	Deep din U12, start event, bus 1	Infraction THD of U2E, bus 1
	Event; [21]	Overvoltage LINE, stop event, hus 1	Deep din L12, stop event, bus 1	Infraction THD of LISE, bus 1
	Event: [22]	Swell LITE start event bus 1	Deep dip U23, start event, bus 1	Infraction THD of L112, bus 1
	Event; [23]	Swell LITE, stop event, bus 1	Deep dip 123 stop event bus 1	Infraction THD of U23 bus 1
	Event: [24] External trioner start event	Swell LI2E, start event, bus 1	Deep dip 131_start event, bus 1	Infraction THD of US1 bus 1
	C V V V LACEMAR ON UNDER, SCALL EVENU	1 - 1 Sweet Oald, start event, bus I	First occup up up 1, start event, bus I	I III GOUTI THE OF US1, BUS 1
🐴 Receive 😂 Open 👻	🗈 Send 👻 🔜 Save 💌 🚳 Print 🥔 Manu	al		
Offine	A: Offline [PQI-D/5.0.00/i3]	C:\Programme\WinPQ\Data\EN50160_1		1

10. Time synchronization

Select the device to which the clock is to be connected. A COM2 interface on the rear side of the module rack can be used.

10.1 Time synchronisation with DCF77 time clock

A DCF-77 clock can be connected to all devices of the **REGSys** family with a serial interface. The clock then receives the long-wave radio signal from the German atomic clock in Darmstadt. Some settings need to be made on the device in order to synchronise **REGSys** devices with this time.

Connection COM1 (front):

The DCF77 modul can be connected directly to the interface COM1

Connection COM2

At the terminal COM2 these signals are available: TXD[b20], RXD[b22], RTS[z20], CTS[z22] and GND[b24]. Connection with the adapter cable shown in the picture



10.2 Time synchronisation with GPS time clock

The GPS time cock (NIS GPS clock) can be connect with the RS232 interface or directly to the time bus (RS485). The connection to the time bus is more precise and recommended. The clock delivered a converted DCF77 signal to the output:

At the terminals DCF-EA+ and DCF-EA- a DCF- signal with RS485 levels will be delivered.

GPS NIS clock	PQI-DA
DCF-EA+	"A" at terminal X6, no. 47
DCF-EA-	"B" at terminal X6, no. 48
GND	"GND" at terminal X6, no. 50

Please install the termination of the bus like it is suggested in the PQI-D or PQI-DA manual. For the GPS time clock there is also a manual available

10.3 Interface settings for time clock connected to RS232

Start the program "ID, LAN, Time".

Group	V Netz Pg 11	0kV Netz EN PQ-Erei	jnisse	Konfiguration ECL-Kommandos E-LAN-Struktur Stations-Parameter Kennung Stations-Name Gruppe Dr Q1: setted POI-D setten REG 22	atu
G_	PQID-UI	H_ PQID-UU	PQID-UU		0.
uw s	üd	U₩ Mitte	UW West	Anlage: Feld: Gerät: Longname-Chan-3 Longname-Chan-2 Longname-Chan-1	
SS1	_	SS1 🔽	SS1 🔽		
	🛃 Störschrie	be	SS2 🔽	COM-Port1: Made	
	PQ-Ereigni	isse		ECL DCF77	
	Messdater	n	Status	Baudrate: Baudrate:	
	EN EN-Report	ts		Parität:	
	🛃 Online-Dal	ten		P- V	
	Messdater	n auslesen		Protokoll: PTS(CTS)	
	😘 Grenzwert	te, Anschluss, IO			
	🛠 Messparar	meter/Trigger		Setzen Setzen	
	📲 Kompakt				l
	Sys ID, LAN, Z	leit			

Make sure that you have loaded the correct device (to which the clock is to be connected). Set the selected interface (COM2 in the figure above) to mode "DCF77".



All other fields on this COM interface are ignored. Click on the "Set" button under this setting. The interface is now set to receive a DCF-77 signal. The connection of the time clock to the RS232 is much slower than the connection directly to the time bus (RS485) of the analyzer.

10.4 Interface settings for the GPS clock connected at the time bus

If the GPS time clock is connected directly to the time bus (RS485), this clock will be the time master and all other devices connected to the bus are time slaves. The time difference between different devices is < 10ms. You have to change the setting "Slave" in WinPQ under ID/LAN/time

Time synchronization	
Date/Time:	
03.03.2011	
[DCFSync]	Parameters
1: DCF: quality of receive signal	0
2: Summer-/Wintertime change over (DST) 0=disabled, 1=enabled	▲ 0: Disabled
3: DCF-operation mode, 0=Single, 1=Slave, 2=Master	1: Slave
4: Time zone of the device in 0.25-h raster (e.g. 1.0 in case of Germany)	1.0
5: Time zone of DCF-time code in 0.25-h raster (e.g. 0.5 or 1.0)	1.0
6: Maximum time deviation DCF-edge of rated value [s]	0.1
7: Release of DCF-time-pulse-display on status LED	■ 0: Off
8: DST-Operation mode, 0=local, 1=external	▲ 0: local
9: Time tolerance [s] for message TIMESET	1.0

10.5 Setting up the synchronization with E-LAN connection

If several measuring devices are connected with E-LAN communication and have to be synchronised, a background program must be installed on the device connected to the time clock.

(Time synchronisation could be also a PC or GPS clock)

The fastest way to synchronise different power quality devices is the connection with the time & trigger bus. With E-LAN there could be a time difference of 200ms between different devices.

彩, POPara.EXE/STD-ID [C:\Programme	WinPO\Data\PODcfTime.ecl]	
Datei Bearbeiten Hilfe		
	[PQPara] Geladen aus Datei >C:\Programme\WinPQ\MASK\PQPAF Konfiguration Zeitsynchronisation © ECL-Kommandos E-LAN-Struktur C:\Programme\WinPQ\Data\PQDcfTime.ed 15.07.2008 10:16:18	LASYS_I3.DDF<
ECL-Kommandosj	Num Command 1 # Abfrage der DCF-Zeit 2 # Hintergrundprogramm zur Zeitsynchronisation 3 DCFSTATUS 4 all,time//& 5 HList*	Result
Essen C Control Contro Control Control Control Control	6 H 30='IF 3:0:15, all-, zeit//=xhx:x x.x.x'	

Öffnen				? 🛛
Suchen in:	🚞 Data	•	+ 🗈 💣 📰	,
Zuletzt verwendete D Desktop	CPR_Default.ed PQBinary.ed PQBox_Clamp.ed PQBox_Coil.ed PQBox_LVol.ed PQBox_LVol.ed PQBox_LVol5.ECL	PQLimits.ed PQLoadProfile.ed PQModem_NoStat.ec PQModem_NoStat.yv PQModem_Stat.ed PQPara_UI.ed PQPara_UU.ed	:l 45.ecl	
Eigene Dateien	PQBox_MVol.ecl PQBox_MVolL.ECL PQBox_MVolS.ECL PQBox_MVolS.ECL PQBoxUSB.ecl	PQParaCompl_UI.ecl PQParaCompl_UU.ecl PQParaCompl_UU.ecl PQRelayReset.ecl	I	
S Arbeitsplatz	PQCheck.ecl PQComTOut.ecl PQDcfTime.ecl PQFlags.ecl			
Netzwerkumgeb ung	Dateiname: PQD Dateityp: ECL	cfTime.ecl commands (".ECL)	•	Üffnen Abbrechen

In the same program "ID, LAN, Time", switch to the tab "ECL commands".

Initiate the program "PQDcfTime.ecl" by clicking "Load". In the figure, this has already been done.

The first two rows (starting with the character #) are comments.

The first command is in line 3: "DCFSTATUS".

 Check to ensure that the clock emits a signal. Click line 3 with the command DCFSTATUS. Then click the button "Step". If the signal from the clock is received without errors, a text of this type will appear: DCF-Time: 13:46:15 [1m]" Check to see if the time of day is indicated correctly.

If a text of this type is displayed:

DCF-Time : ??:??:00 [5579m]

Adaption : --:--:--

The clock does not emit a correct signal.



Possible reasons might range from a clock that is not switched on to cable problems or weak reception. The signal is emitted from Darmstadt, the antenna should therefore point in this direction. Continue only when the time is displayed correctly.

Note: It can take up to 5 minutes until the initial synchronisation takes place.

- 2. Displaying of the clock times of all REGSys devices in the ELAN. The command all,time//& can be skipped here. It shows a list of all devices with the respective time. This will be useful later, when you want to check whether all devices indicate the same time.
- 3. Check to see if row 30 of the background program is free. Click the cell with the entry HList* and then "Step". A list with the H-program rows pops up. Scroll down until you can see the entry "H30 = ...". If it is empty, i.e. H 30 = '', you can use H30 and continue with the next step. If it is not empty, you should contact eberle to obtain a solution.
- Setting up the background program to permit time synchronisation. Click the cell with the entry H 30='IF 3:0:15,all-,zeit//=xhx:x x.x.' and then "Step". The command is repeated in response.

Time synchronisation has now been set up. Every day, all REGSys devices in the ELAN are set to the DCF time at 03:00:15.

11. Firmware update PQI-D and PQI-DA

It is possible to see the actual version of the hardware PQI-D or PQI-DA and the suitable firmware using the software WinPQ / PQ Para



With "device information", you will see all the information about the hardware and firmware version of the connected device.



A firmware update can only be done if the device is running in "urloader mode".

Please press the reset button of the PQI-D /-DA for more than 5 seconds.

If the device is running in "urloader mode" you can see this in the following indication:

PQI-DA:

- Service LED = green
- Fault LED = red



PQI-D:

- Service LED & notification LED = green
- Fault-LED = red



PC	21 - D	a-eberle
Betrieb		
Störung	• • /_	The notification LED shows the transfer rate (bit/s) of the PQI-D: 1 – 115.000 2 – 57600
		3 – 19200 4 – 9600

To send the firmware update to the device, use the program "Comm.exe" in WinPQ.



Change the parameter of your COM settings suitable to your PC.



Example of the COM settings: Interface of the PC = COM 11 Flow control Bautrade = 115.000

• If the device is not in "urloader mode", and if the settings of the interface are correct the devices will answer with its name (i. e. Q4)

• If the device is in "urloader mode", you can ask with the command "ver", the firmware version of the device.

Datei	COM	Terminal	?
Termi	nal		
<q4> <q4></q4></q4>			

If the version of the PQI-D/DA is old, it's necessary to update the file "Boot loader" also.

🚾 boot_209.mot

For the firmware 4.xx and 5.xx a boot loader 2.xx is necessary.

With the command "Firmware senden mit Reset", you can send the new firmware to the device. The device will make a reset after the file transfer is finished.



The blue bar graph shows the status of the firmware transfer.

📥 Reg-DP Te	rminal					
Datei COM	Terminal Stop	?				
Terminal						
<q4> <q4></q4></q4>						
S-Rec senden	COM11: 115200), N, 8, 1, RTS/CTS	521449E350	1402C189920100	25.05.2010	17:12:16



12. Setting of the PQ-Mail

With the program "PQMail.exe" it is possible to send messages or PDF-documents automatically to different emailgroups. This function only works if the program "PQRvReport", works permanently.



Open the "Setup mail-Program".

PQHail*/STD-ID/WinPQ-Adminis	strator [C:\WinP	Q2011\INI\PQMaiLINI] [RAS:]	
Freicabe geschützter Parameter			
st (SMTP server)	Security	Passart	
alto, topine de			-
R2	Ant		
Dt eherle de	- Doero.o	sertner Et eherle, de	
			Mailreceiver
			(separated by comma)
			(separateurby comma)
al-Inhalt:			
ateianhang (Test Mail)			
etreff-Zele (FileName' ersetzt den N	lamen des Dateiani	hanges):	
2 Daten		Cubicatmatters	
		Subject matters	
ext to inform the receiver econd line		and further	
		sentences	
tandard-Ablace (Ordner) der POF-Da	teien		
:\WMPQ2011\TMP\			
sätzlicher Empfänger (Entfernen mit	Doppel-Klick)		
oup1=joerg.gaertner@t-eberie.de	0.1	1.1101	
oup2=juergen.blum@a-eberie.de	Create	sadditional	
	aroups	sofemail	
		, or orman	
	1.		
:05:59 NEWSTART: "C:\W:	NA DEPART	EIS.EXEPQMail.INI*	
05:59 NEWSTART: "C:\W: 05:59 DATE : 01.04.	10FCF0 05	EIS.EXEPQMail.INI*	
05:59 NEWSTART: "C:\W: 05:59 DATE : 01.04. 05:59 SYSTIME : SYS=20	1011-0	EIS.EXEPQMail.INI* 59 1:05:59:0854 LOC=2011-04-01 ::	15:05:59:0854 [Mitteleuropäische Zeit/Mittel

- 1. The settings can be checked Via "Test Mail". A test- mail will be sent. Via "Attachment", the mail gets an addition. (PDF)
- 2. If only one group of e-mail receiver is used, this group can later be selected as "Default". The settings have to be saved before. (Save setup)
- 3. "Additional receiver", gives the alternatives to add more Email receivers (groups).
- 4. The storage place for PDF files can be selected (Red circle).

13. Automatically print or e-mail order

To generate PDF documents and email reports automatically, it is necessary the **PQRvReport-Programm** is operating permanent. This program should not be closed. (Continuous operation is described in chapter 8)

To use the automatically operation, this program must be opened in Windows Explorer and not by PQ Start surface.

If some settings would be changed, the **"Auto-Report"**, must be disabled. After that the function must be enabled. For this moment the report function operates automatically

	🏘 PQRvReport*/STD-ID/WinPQ-Admi
	Eile Help
	EN Reports Logioformation
	Auto-Report
Ì	Selection of report
	ENOVERVIEW=ENOVERVIEW;Week HARMONICS ENMONITOR EN95PERCENT INTERRUPT=INTERRUPT;Quart [Wo DISQUAL=DISQUAL;Year [Weekly: UNIPEDE
	TEST
	PQ disturbance recorder (all stations). Prints the disturbance recorder of all pqi-d types immediately after transmission to database.

13.1 Automatically generated disturbance reports

To generate self acting disturbance reports, choose the template "RECORDER ABC"

With **Automate template** it is possible to generate PDF- documents, email-reports or reports via printer automatically. This reports will be activated by new disturbances.

≽ PQRvReport* /STD-ID/WinPQ-Administrator [C:\WinPQ2011\REPORT\RvDefault_ENLrav] 23:57:00							
Ele Help							
EN-Reports Log information							
Auto-Report The Execute temple	2 ② Automate template SELECT * FROM poirecord WHERE ID>51471 ORDER BY ID ASC LIMIT 1 [14:50:20]						
Selection of report	User input		C:\WinPQ2011\PICTURE\Rv_RECORDERABC.J				
ENOVERVIEW=ENOVERVIEW;Week	B1 UWBE12S/T	rafo_12S/3W	[31.01.2008-	Report Preview			
ENMONITOR	B3 UWBUI11S/T	raro_135/3W	[10 03 2008-	File Page Zoom			
EN95PERCENT	B4 UWBU12S/T	rafo 125/3W	[06.05.2008-	rie rage zoom	and the second		
INTERRUPT=INTERRUPT;Quart [W	E1 UWES11S/T	rafo_11S/3W	[24.04.2008-	🔁 🖬 🥸 14 🔺 🕨	▶I Page 1		
UNTPEDE	E2 UWES12S/T	rafo_12S/3W	[24.04.2008-				
RECORDERABC=RecB PRINTER=PD	E3 UWEP11S/1	15/3W	[04.06.2008-	1 C			
TEST	IL E4 OWELLIZS/I	raro 125/3W	[17.06.2008				
PQ disturbance recorder (all	Select all 🔲 Reset all 🛛 Inver all			Company			
stations).				company			
Prints the disturbance recorder of all				Plant:	Field:		
transmission to database.				a.eberle	Trafo12		
				- Fra			
				List1=300 15	5:57:39 [2,9sec]		
				23kV 15	5:57:40.0000		
				U1Es01 U2Es01 18kV			
				U3Es01	1		
				UN-12kV			
				chu -			
				DKV			
				0,02kV			
History				U12s01			
START-ID=51466/51471				U23s01			
OPEN: stw_bochum [5.1.56-enter				0071001 10KV			
ACTIVE=MYREP2=EN50160;Month				12kV			
ACTIVE=MYREP1=EN50160;Montf				okv.			
ACTIVE=ENOVERVIEW=ENOVERVIE				4 444	- i - E		
					<u> </u>		
MySQL: stw_bochum@LocalHost 🟹 😰 📧 TRG: 14:50: 19 51471/51471/1							




The list in with the program "PQRvReport" saves PDF documents could be changed in the menu point "PDF output folder" It's possible t generate a new folder

13.2 Automatic power quality reports

In contradiction to disturbance- reports, norm- reports will be generated by adjusted time-period and not after an event. Norm- reports can be generated per day, week or year. The example below shows: The "EN50160", report will be started every Monday on 8:00 o clock and sends it to the selected printer. The stations must be enabled.

Automate template: ENOVERVIEW [EN50160-period]							
	Basic selection Mail setup Other parameter User reports						
ſ	ENOVERVIEW						
	Overview according EN 50160 (all stations). Shows number of violations per time unit according EN 50160 of all stations in one table.						
[Basic parameter:						
	Time:	Select a printer	Select a mail receiver	Duration between t			
	06:00:00 ÷	Brother MFC9180 USB	DEFAULT	30 🕂			
Generation time and other parameter							
	🗌 B1	UWBE12S/Trafo_12S/3W	 Weekdays 	Duration			
	🗌 B2	UWBE13S/Trafo_13S/3W	Sonntag	C Day			
	Ц ВЗ	UWBU11S/Trafo_11S/3W	Montag Dispetas	(Day			
	L B4	UWBU12S/Trafo_12S/3W					
		UWES11S/Trafo_11S/3W		Week			
		UWES12S/Trafo_12S/3W					
	LI E3	UWEP11S/11S/3W	Samstag	C 1/			
		UWEL12S/Trafo_12S/3W		U rear			
		UWEL13S/Trafo_13S/3W					
	L E6	UWEL11S/Trafo_11S/3W		C EN50160-period			
		UWEL31S/Trafo_31S/3W	-				
Ľ	11 1 1 1 1 1 1 1	TWRT.329/Trafo 329/3W					

If the automatic report function should be disabled, the time has to be 0:00 o clock.

13.3 Mail dispatch of automatic reports

Is there only one E-Mail group existing, these group will called "Default".

The example bellow shows the settings of automatic generation from the Recorder-B. The device Q1 is selected and the mail receiver are those under Default setting.

Automate template: RECORDERABC []							
Basic selection Mail setup Other parameter User reports							
RECORDERA	BC						
PQ disturbance recorder (all stations). Prints the disturbance recorder of all pqi-d types immediately after transmission to database.							
Basic parameter:							
	Select a printer	/er Duration between t					
	PDF	 No mail 	▼ 30 ÷				
		,					
Generation ti							
🗌 B1	UWBE12S/Trafo_12S/3W	[31.01.2008- 🔺 F	Recorder types				
🗆 B2	UWBE13S/Trafo_13S/3W	[05.11.2007-	Recorder-A (100µs)				
B3	UWBU11S/Trafo_11S/3W	[10.03.2008-	Recorder-B (10ms)				
✓ B4	UWBU12S/Trafo_12S/3W	[06.05.2008-	Recorder-C (Harmonics)				
🗹 E1	UWES11S/Trafo_11S/3W	[24.04.2008-	_ Recorder-S (Ripple Voltage)				
E2	UWES12S/Trafo_12S/3W	[24.04.2008					
🗆 E3	UWEP11S/11S/3W	[04.06.2008-					
✓ E4	UWEL12S/Trafo_12S/3W	[17.06.2008-					
✓ E5	UWEL13S/Trafo 13S/3W	[17.06.2008-					
E6	UWEL11S/Trafo_11S/3W	[18.06.2008-					
E7	UWEL31S/Trafo_31S/3W	[30.07.2008-					
	IIWRI.329/Trafo 329/3W	131 07 2008-					
Vok X Cancel							

To send disturbance or norm- reports to different groups of mail receivers, it is necessary use the "Mail- Setup".

The task "other parameter"

👍 Automate te	emplate: RECORDI	ERABC []		
Basic selection	Mail setup Other p	arameter 🛛 Use	r reports	
Current selection	n			
group1=B1,B2,B	3;			
group2=B1,B2,B	3,EZ,E3,E4;			
Compilation		Combines	tation IDs and m	ail receiver
Mail receiver		001101101		
group2			•	
Mail				
✓ E2	UWES12S/Tr	afo_12S/3W	A	
E3	UWEP11S/11	.S/3W		
E5	UWEL13S/Tr	afo 135/3W		
E6	UWEL11S/Tr	afo 11S/3W	•	
Mail topic				
disturbance d	ata			
	dd/Change			
	uu/change			
🗸 Ok 🗙 Car	ncel			



notes	Ν	0	t	e	S
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Software - Version: