

Snabbguide Installation larmtablå USM-System



THE USM UNIVERSAL ANNUNCIATOR BECOMES EVEN MORE POWERFUL – THE NEW VERSION 4.0!

3 viktiga funktioner i den nyare generationen >4.0:

- <https://192.168.1.99>
- Lösenord för admin står på usm:ens etikett
- Aktivera IEC 61850 under Security

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FÖRORD

Att göra mer:

Den här snabbguiden innehåller de viktigaste och mest övergripande informationen som behövs för en lyckad installation av USM system>4.0. För kompletta manualer hänvisas till de engelska manualerna för USM och BSM som finns på:

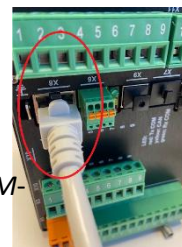
<https://www.tillquist.com/kraftautomation/larmpaneler/larmpaneler-usm>

Nytt från generation 4.0 är att alla enheter levereras med IT-säkerhet. Innebär i korthet att du jobbar med olika behörighetsnivåer med olika lösenord och att du måste aktivt aktivera delar av kommunikationen. Exempelvis måste IEC 61850 aktiveras vid leverans! Läs mer under punkt anslutning 2 och fram.

1.CAN-bus kommunikation mellan master och slav

1.1 Kablage och terminering

- Kontakterna X7 och X8 används till CAN-bus kommunikation mellan enheterna.
- Använd vanlig nätverkskabel, UTP.
- Det spelar ingen roll vilken av kontakterna som används av X7 eller X8 på BSM. USM X8 i anslutning mot överordnat och X7 mot slav (Tex BSM).
- **Viktigt!** De tomma kontakterna ska termineras med medföljande termineringar. Gäller BSM-enheter. Termineringen är kontakten med det svarta plasthöljet som sitter i ena nätverksuttaget på BSM vid leverans.



1.2 Inställningar Master och Slav (Kaskadkopplat system)

För kaskadkopplat system så måste slavar (BSM) anges med hjälp av DIP-switcharna, S1

Inställningar SLAV-enheter:

DIP-switch	Funktion	Slav 1	Slav 2	Slav 3
S1/1	Slav	ON	ON	ON
S1/2	Antalet slavar	ON	OFF	ON
S1/3	Antalet slavar	OFF	ON	ON
S1/4	Inställningar mjukvara eller DIP	OFF	OFF	OFF

1.2.1 Exempel system USM-master och 1 slav Inställningar för DIP-switch S1.

SLAV	
S1/1	ON
S1/2	ON
S1/3	OFF
S1/4	OFF



2. Mjukvara

USM har en inbyggd webbserver med mjukvaran på där samtlig parametrering görs.

För att logga in så används nätverksporten X8 på USM.

Default IP-adress: **https://192.168.1.99** (går att ändra senare).

OBS! Det krävs att man ändrar till Fast IP-adress i datorns kontrollpanel för att kunna konfigurera USM.

2.1 Anslutning USM-System vid leverans

Läs av etiketten på den levererade enheten (sitter på undersidan av enheten). Tips Fota!

Det finns 2 etiketter:

- A) Blå: Tillverkningsuppgifter (Produktinfo)
- B) Röd: Inloggningsuppgifter vid första anslutning: <https://192.168.1.99>

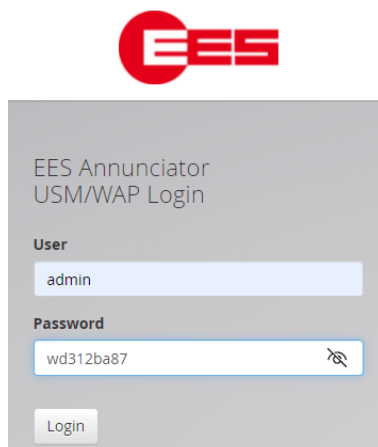


Logga in första gången med lösenordet som står i ovan röda ruta på levererad enhet.

I exempel nedan:

Användare: admin

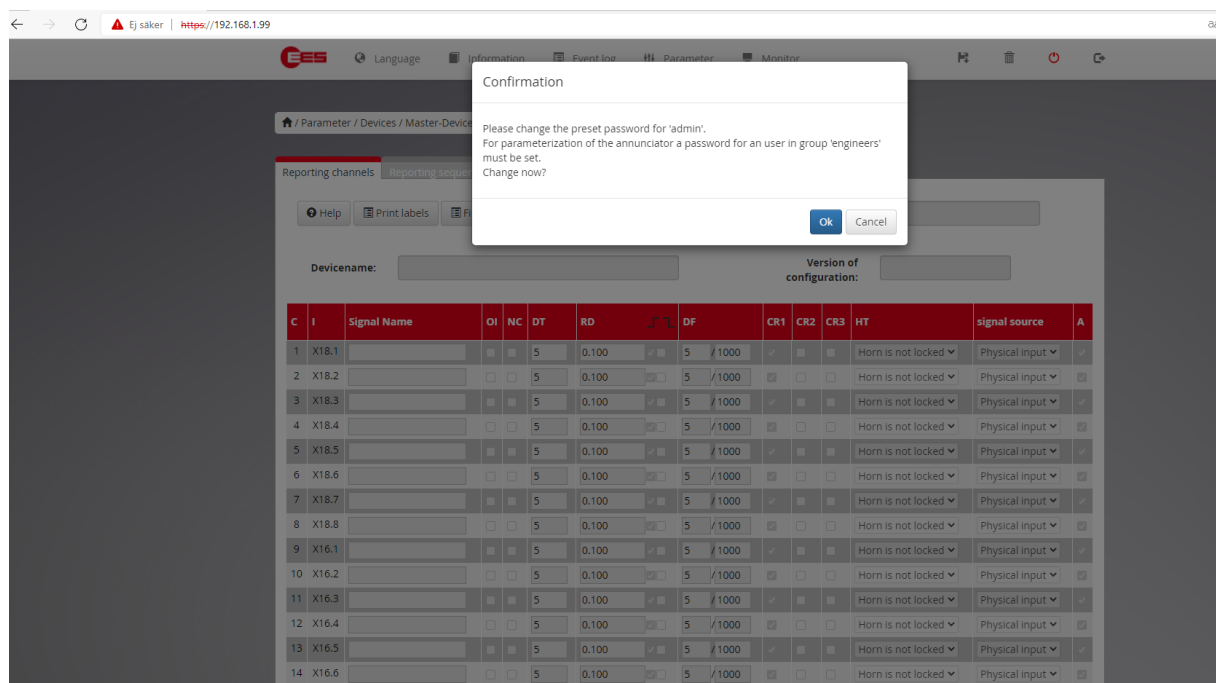
Lösenord: wd312ba87



The image shows the login interface for the EES Annunciator USM/WAP. At the top is the EES logo. Below it, the text "EES Annunciator USM/WAP Login" is displayed. There are two input fields: "User" with the value "admin" and "Password" with the value "wd312ba87". A "Login" button is located at the bottom of the form.

Efter inloggning:

Kan lösenordet nu på *admin* och *engineer* ändras till önskad.



The screenshot shows the EES web interface after login. A "Confirmation" dialog box is open, asking the user to change the preset password for 'admin' and set a password for the 'engineers' group. The background shows a configuration page with a table of parameters.

C	I	Signal Name	OI	NC	DT	RD	DF	CR1	CR2	CR3	HT	signal source	A
1	X18.1				5	0.100	5 / 1000				Horn is not locked	Physical input	
2	X18.2				5	0.100	5 / 1000				Horn is not locked	Physical input	
3	X18.3				5	0.100	5 / 1000				Horn is not locked	Physical input	
4	X18.4				5	0.100	5 / 1000				Horn is not locked	Physical input	
5	X18.5				5	0.100	5 / 1000				Horn is not locked	Physical input	
6	X18.6				5	0.100	5 / 1000				Horn is not locked	Physical input	
7	X18.7				5	0.100	5 / 1000				Horn is not locked	Physical input	
8	X18.8				5	0.100	5 / 1000				Horn is not locked	Physical input	
9	X16.1				5	0.100	5 / 1000				Horn is not locked	Physical input	
10	X16.2				5	0.100	5 / 1000				Horn is not locked	Physical input	
11	X16.3				5	0.100	5 / 1000				Horn is not locked	Physical input	
12	X16.4				5	0.100	5 / 1000				Horn is not locked	Physical input	
13	X16.5				5	0.100	5 / 1000				Horn is not locked	Physical input	
14	X16.6				5	0.100	5 / 1000				Horn is not locked	Physical input	

Se bild nedan för behörighetsnivåer för respektive användare

The screenshot shows a web interface for user management. At the top, there's a breadcrumb 'Parameter / System' and a user dropdown 'admin (admin)'. Below is a navigation bar with tabs: Time, Network, User management (active), Device errors, Serial, Security, Firmware, Licences, Font, and Parameter editor. A 'Help' button is on the left. The main section is titled 'Users' and contains a table with columns: Name (Login), Full name, Password, Group, Disabled, and Delete. There are three rows: 'admin' (password: preset, group: admins), 'user' (password: not set, group: users), and 'engineer' (password: not set, group: engineer). Each row has a 'Change' button and a 'Delete' button. Below the table is a '+ Add user' button. The next section is titled 'User groups' and contains a table with columns: Name, Assigned access levels (with sub-columns: User, Engineer, Admin, Operator), and Delete. There are four rows: 'admins' (all access levels checked), 'users' (User access level checked), 'engineers' (User and Engineer access levels checked), and 'operators' (User and Operator access levels checked). Each row has a 'Delete' button. Below the table is a '+ Add group' button. The bottom section is titled 'Password policy'.

Name (Login)	Full name	Password	Group	Disabled	Delete
admin	admin	preset	admins	☐	
user	user	not set	users	☐	
engineer	engineer	not set	engineer	☐	

+ Add user

Name	Assigned access levels				Delete
	User	Engineer	Admin	Operator	
admins	☒	☒	☒	☒	
users	☒	☐	☐	☐	
engineers	☒	☒	☐	☐	
operators	☒	☐	☐	☒	

+ Add group

Password policy

Tips!

Om det inte går att göra inställningar i mjukvaran kan det vara bra att ändra behörighetsnivåerna för respektive användare. Detta görs genom att bocka av rutorna (se bild ovan). Ge administratören fulla rättigheter för att alla konfigurationer ska bli tillgängliga. För att inställningarna för behörighetsnivå ska tillämpas: Accept confirmation → Logga ut → Logga in.

2.2 Aktivera IEC 61850 "Brandväggsparmetrar"

Olika brandväggar blockeras/aktiveras utifrån önskemål.

Behörighetsnivå: Admin

Gå till *Parameter* → *System* → *Security*

Spara på *Accept Configuration*



Brandväggsparametrar aktiverade vid leverans:

Parameter / System admin (admin) *

Time Network User management Device errors Serial **Security** Firmware Licences Font Parameter editor

Help

Firewall

Firewall enabled: ☐ disabled ☒ enabled

Rules for inbound connections

Protocol	Remote IP	Local port	Allow
HTTPS	any IP	TCP 443	☒
HTTP (*)	any IP	TCP 80	☒
SSH/SFTP	any IP	TCP 22	☒
NTP (Server)	Connection disabled		☐
IEC 61850	Connection disabled		☐
Ping	any IP	ICMP	☒
ICMPv6	any IP	ICMPv6	☐
SNMP	Connection disabled		☐
Modbus TCP	Connection disabled		☒
IEC 60870-5-104 Server Link 1	Connection disabled		☒
IEC 60870-5-104 Server Link 2	Connection disabled		☒
IEC 60870-5-104 Server Link 3	Connection disabled		☒
IEC 60870-5-104 Server Link 4	Connection disabled		☒

* Allow unencrypted HTTP access: ☐

Exempel efter ändring:

Parameter / System admin (admin) *

Time Network User management Device errors Serial **Security** Firmware Licences Font Parameter editor

Help

Firewall

Firewall enabled: ☐ disabled ☒ enabled

Rules for inbound connections

Protocol	Remote IP	Local port	Allow
HTTPS	any IP	TCP 443	☒
HTTP (*)	any IP	TCP 80	☒
SSH/SFTP	any IP	TCP 22	☒
NTP (Server)	Connection disabled		☒
IEC 61850	Connection disabled		☒
Ping	any IP	ICMP	☒
ICMPv6	any IP	ICMPv6	☐
SNMP	Connection disabled		☐
Modbus TCP	Connection disabled		☒
IEC 60870-5-104 Server Link 1	Connection disabled		☒
IEC 60870-5-104 Server Link 2	Connection disabled		☒
IEC 60870-5-104 Server Link 3	Connection disabled		☒
IEC 60870-5-104 Server Link 4	Connection disabled		☒

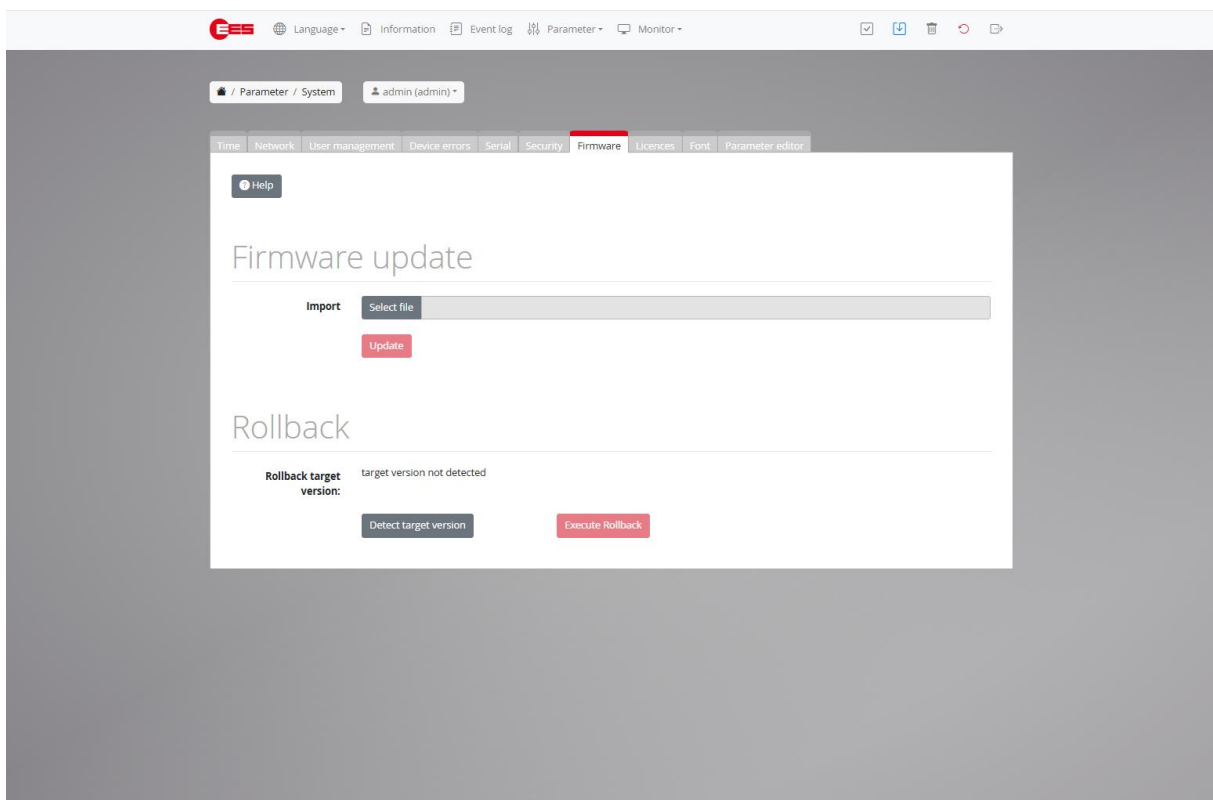
* Allow unencrypted HTTP access: ☐

2.3 Uppdatera Firmware

Firmwareuppdateringar är möjlig från 4.0.1 och framåt. För äldre generationer → kontakta Tillquist!

Behörighetsnivå: *Admin*

Hämta firmware: <https://www.tillquist.com/kraftautomation/larmpaneler/larmpaneler-usm>



Confirmation

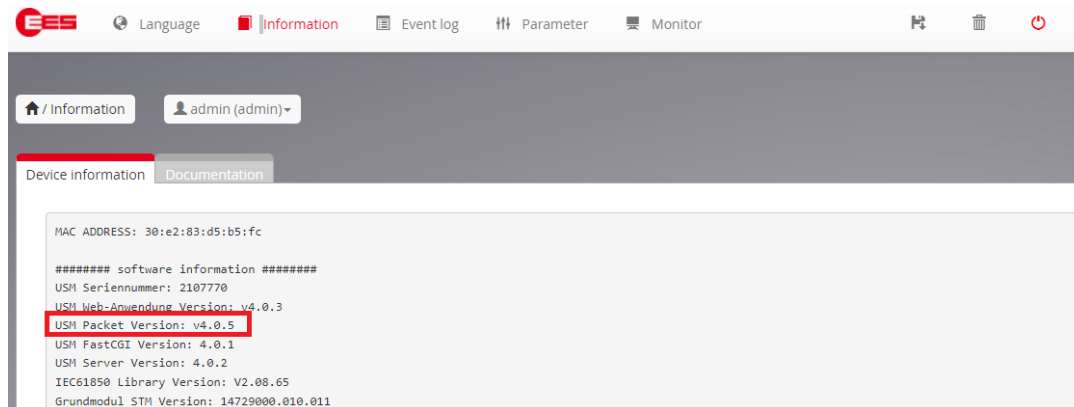
Should the selected software package be installed.

This process will take some time and cannot be interrupted. The device must not be disconnected from the power supply.

After the installation is complete, the device will restart.



Efter att enheten har startats om gå till: *Information* → *Device information* och verifiera att enheten är uppdaterad, Se bild nedan.



2.4 Eventloggning

USM:en version nyare 4.0 har möjlighet att logga händelser. USM har minne för 100 000 händelser med rullande överskrivning. Dvs. När minnet är fullt skrivs det över och börjar med händelse 1 och framåt.

Behörighetsnivå: Engineer

Bild nedan visar vad som aktiveras vid leverans (grundinställningar):

Event logging

inactive: ☐

active: ☒

Event Log licence: **available**

Event log level warning at : of 100 000 Events

Configure logging

Decide which categories of events shall be logged in the event log of the device.

Alarm events

Alarm coming, going, acknowledged, reset, Horn acknowledged

☐

Annunciator state events

Watchdog relay state, IEC link state, Configuration Events

☐

Protocol events

IEC 60870-104 client states, IEC 61850 Errors

☐

Analog errors

Input range status errors, 4...20 mA wire break

☐

System events

Power up, down, Time synchronisation, Ethernet state, Event log state

☒

Security events

Logins, password changes, file system integrity, firmware updates, firewall configuration

☒

Bild nedan, exempel på val av aktivering:

The screenshot shows a web interface for configuring event logging. At the top, there's a navigation bar with 'Event log' and 'admin (admin)'. Below this, there are tabs for 'Display events', 'General configuration' (which is active), and 'Syslog'. A 'Help' button is visible on the left. The main heading is 'Event logging'. Below it, there are two radio buttons for 'inactive' and 'active', with 'active' selected. The 'Event Log licence' is shown as 'available'. There is a text input field for 'Event log level warning at' with the value '90000' and a note 'of 100 000 Events'. The next section is 'Configure logging', with a sub-heading 'Decide which categories of events shall be logged in the event log of the device.' Below this, there are six categories of events, each with a description and a checkbox:

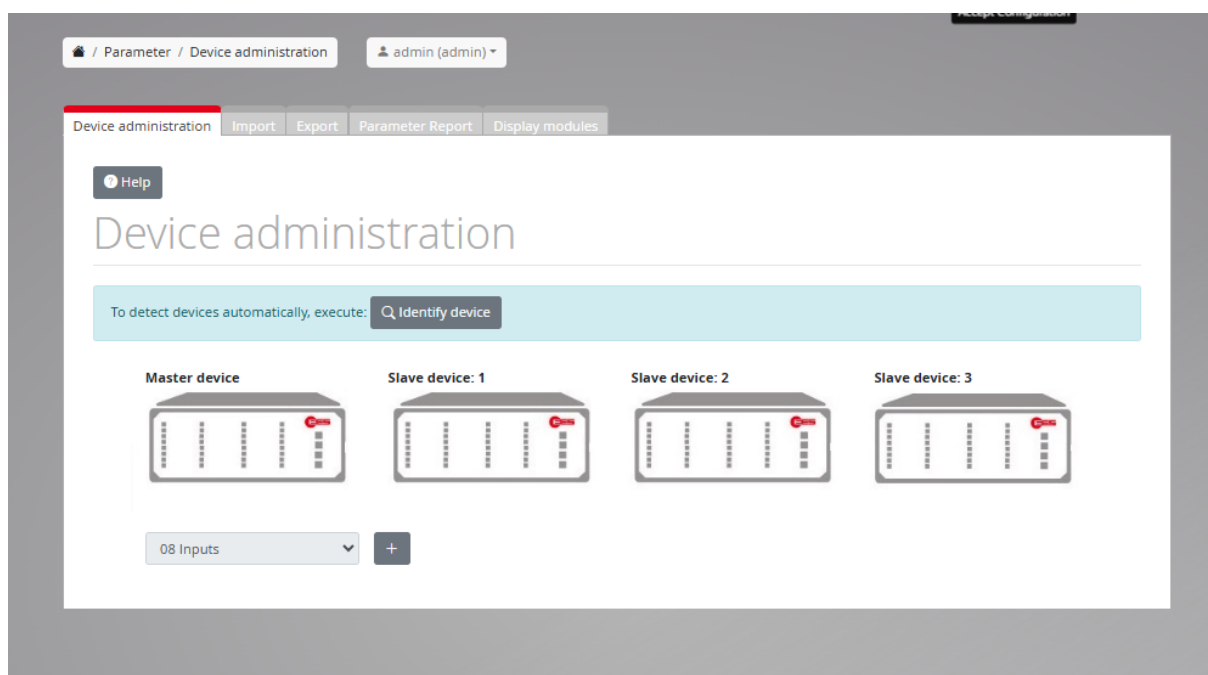
- Alarm events**: Alarm comming, going, acknowledged, reset, Horn acknowledged. ☒
- Annunciator state events**: Watchdog relay state, IEC link state, Configuration Events. ☒
- Protocol events**: IEC 60870-104 client states, IEC 61850 Errors. ☒
- Analog errors**: Input range status errors, 4..20 mA wire break. ☐
- System events**: Power up, down, Time synchronisation, Ethernet state, Event log state. ☒
- Security events**: Logins, password changes, file system integrity, firmware updates, firewall configuration. ☒

2.5 Bygg ut systemet (Lägg till slavenheter)

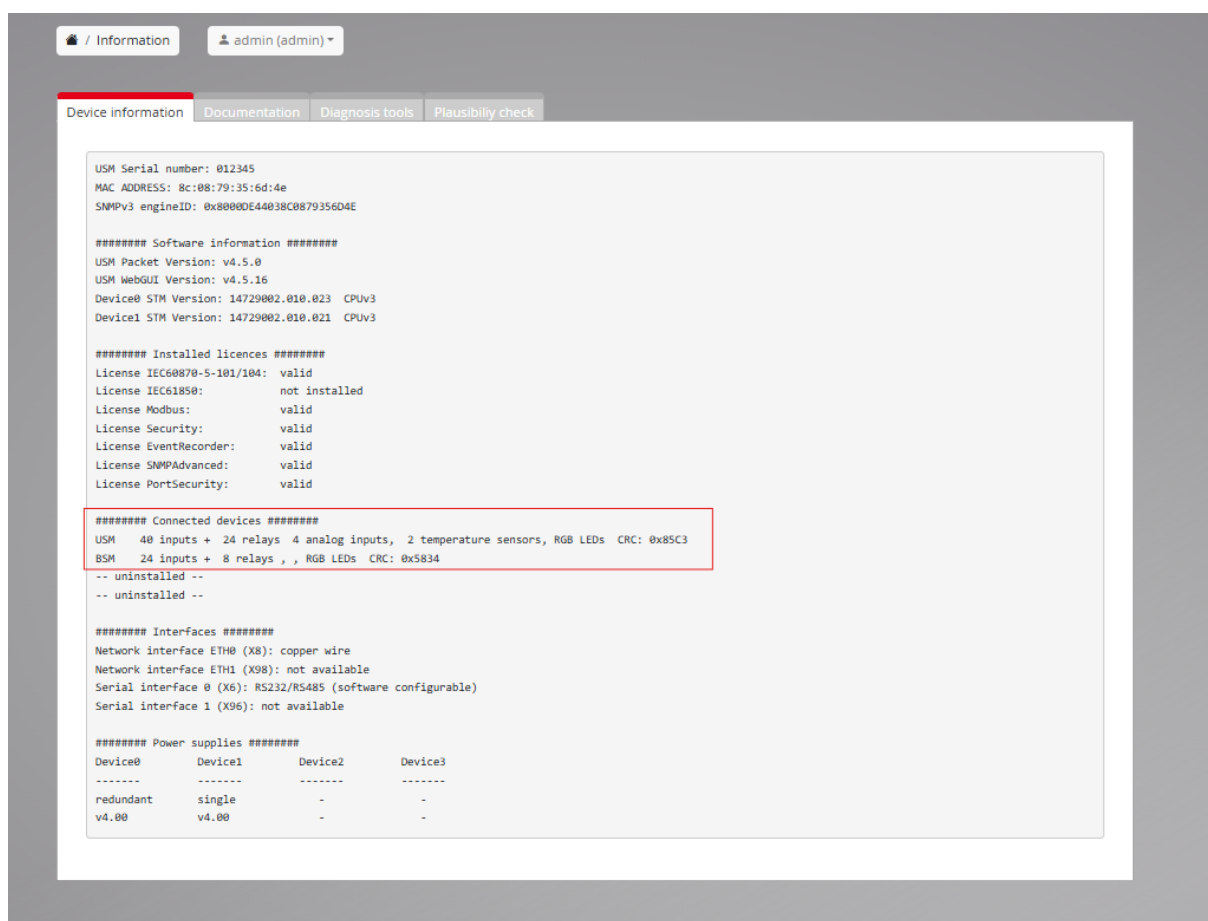
För att lägga till slavenheter (BSM) till en masterenhet (USM) i mjukvaran:

Behörighetsnivå: Engineer

(se bild nedan) *Parameter* → *Device administration* och lägg till önskad slavenhet. Tryck *Identify device*, då hittas slavenheten/slavenheterna automatiskt. Givet att enheterna anslutna enligt [1.1 Kablage och terminering](#) och DIP-Switcharna är rätt inställda enligt [1.2 Inställningar Master och Slav \(Kaskadkopplat system\)](#).



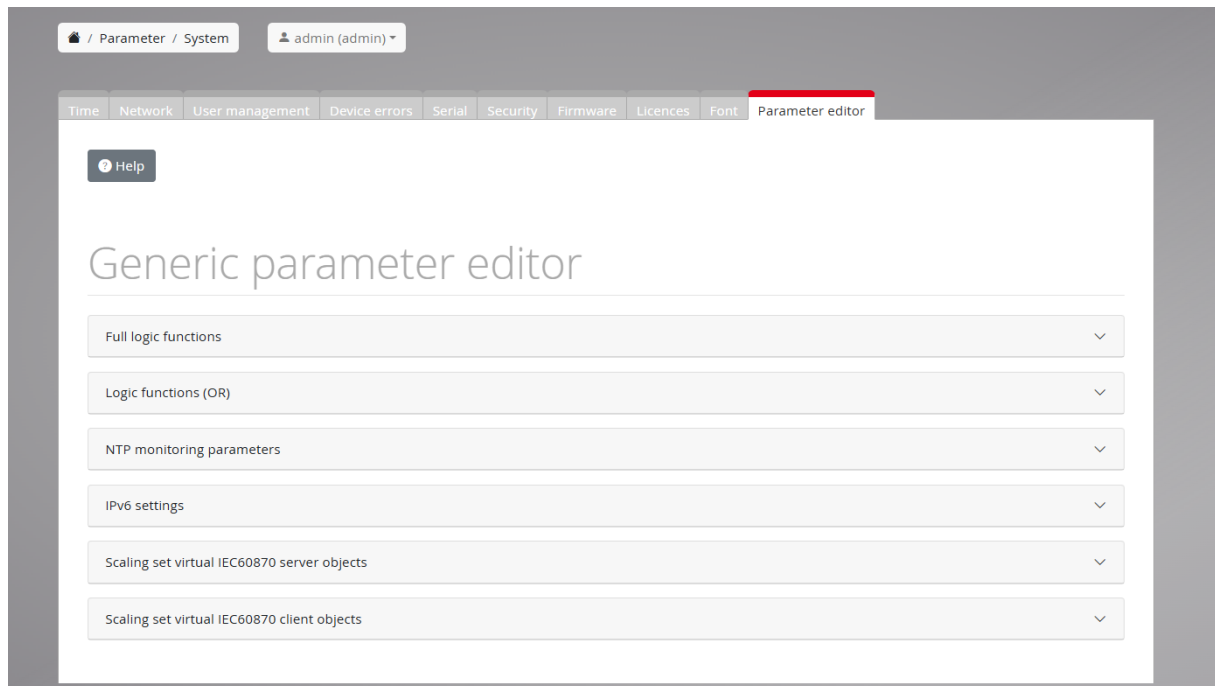
För att verifiera att rätt enheter är anslutna, gå in under *Device info*: Där visas de anslutna samtliga enheter i systemet (Se röda markeringen nedan).



2.6 Logiska funktioner (ex skapa fler grupplarm)

Det finns integrerad logikfunktionalitet i enheten. Den universella parametereditorn kan användas för att skapa formler enligt IEC 61131-3 ST-syntax. Ingångar och virtuella kanaler kan kopplas samman i booleska uttryck med operatorerna **AND**, **OR**, **NOT** samt parenteser.

För att komma åt och ställa in de logiska funktionerna, gå till: *Parameter* → *System* → *Parameter editor*.



Med hjälp av de logiska funktionerna kan man valfritt ställa in fler grupplarm om behovet finns (utöver de 3 standardgrupplarmen).

Logiska funktioner, tex grupplarm konfigureras på 2 olika sätt:

- *Full logic functions*
- *Logic functions (OR)*

2.6.1 Full logic functions

Funktionerna adresseras enligt:

- **"%IX"**: Källan till den logiska funktionssignalen.
- **"%QX"**: Mottagaren till den logiska funktionssignalen.
- **"b"** typ av referenskälla, tex: (b = 0 styr de fysiska ingångarna) (b = 11, styr reläutgångar på enheten)
- **"d"** i adressen ska ersättas med motsvarande enhetsnummer (**0 = Master, 1 = Slav 1, 2 = Slav 2, 3 = Slav 3**).
- **"n"** ska ersättas med kanalnumret, tex: ingång 35 → n = 35 osv.

Detta sätts ihop i en kodsträng på följande sätt: %IXb.d.n

Tabell med beskrivning av varje nummer återfinns på engelska under knappen

Under rubriken: "11.3.1 Full logic functions"

När logiska funktionerna har definierats i *Parameter editor* behöver även *signal source* på mottagarsidan ändras i *Reporting channels*. Det görs genom: *Parameter* → "enhet" → kolumnen *Signal source* → *Logic*. Detta för att vad för typ av signalkälla kanalen ska följa.

The screenshot shows the 'Reporting channels' configuration page. At the top, there are tabs for 'Reporting channels', 'Buttons & Function Inputs', 'Relays', 'Repeat relays', and 'LED-color selection'. Below the tabs, there are buttons for 'Help', 'Print labels', and 'Fill with default labels'. There are also input fields for 'Name of configuration:', 'Devicename:', and 'Version of configuration:'. The main part of the page is a table with columns: C, I, Signal Name, OI, NC, DT, RD, a waveform icon, DF, CR1, CR2, CR3, HT, signal source, and A. The table contains four rows of configuration data.

C	I	Signal Name	OI	NC	DT	RD		DF	CR1	CR2	CR3	HT	signal source	A
1	X14.1	Test	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked	Logic	☒
2	X14.2	Report 2X14.2	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked	Physical input	☒
3	X14.3	Report 3X14.3	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked	Physical input	☒
4	X14.4	Report 4X14.4	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked	Physical input	☒

Exempel 1 (Gruppera ingång):

- Ingång 1 aktiveras på slavenheten när ingång 17 eller ingång 18 aktiveras på masterenheten
 $\%QX0.1.1 := \%IX0.0.17 \text{ OR } \%IX0.0.18$ (Se bild nedan).
(OBS: Grupperad ingång aktiveras direkt, dvs tar ej hänsyn till eventuella tidsfördröjningar på ingång 17 eller ingång 18)

Parameter editor

The screenshot shows the 'Parameter editor' page. At the top, there are tabs for 'Time', 'Network', 'User management', 'Device errors', 'Serial', 'Security', 'Firmware', 'Licences', 'Font', and 'Parameter editor'. Below the tabs, there is a 'Help' button. The main part of the page is titled 'Generic parameter editor'. Below the title, there is a section for 'Full logic functions' which contains a table with columns: Index, Key, Data type, Parameter value, and Delete. The table contains one row of configuration data.

Index	Key	Data type	Parameter value	Delete
0	formula	Str	$\%QX0.1.1 := \%IX0.0.17 \text{ OR } \%IX0.0.18$	

Below the table, there is a '+Add entry' button.

Reporting channels

/ Parameter / Devices / Slave-Device 1 admin (admin) ▾

Reporting channels Buttons & Function inputs Relays Repeat relays LED-color selection

Help Print labels Fill with default labels

Name of configuration:

Devicename:

Version of configuration:

C	I	Signal Name	OI	NC	DT	RD	DF	CR1	CR2	CR3	HT	signal source	A		
1	X14.1	Gruppera ingång	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Logic	☒
2	X14.2	Report 2X14.2	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
3	X14.3	Report 3X14.3	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
4	X14.4	Report 4X14.4	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
5	X14.5	Report 5X14.5	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
6	X14.6	Report 6X14.6	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
7	X14.7	Report 7X14.7	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒
8	X14.8	Report 8X14.8	☐	☐	5	0.100	☒	☐	5	1000	☒	☐	Horn is not locked	Physical input	☒

Exempel 2 (Gruppera reläutgång):

- Reläutgång 1 aktiveras på slavenheten när ingång 17 eller ingång 18 på masterenheten
 $\%QX2.1.9 := \%IX2.0.17 \text{ OR } \%IX2.0.18$ (se bild nedan)

Parameter editor

/ Parameter / System admin (admin) ▾

Time Network User management Device errors Serial Security Firmware Licences Font Parameter editor

Help

Generic parameter editor

Full logic functions

Index	Key	Data type	Parameter value	Delete
0	formula	Str	$\%QX2.1.9 := \%IX2.0.17 \text{ OR } \%IX2.0.18$	Delete

+ Add entry

Reläutgången som aktiveras styrs nu "mjukt" och måste aktiveras i enheten det görs (se bild nedan):

Parameter → Devices → Slave-Device 1 → Repeat relays

/ Parameter / Devices / Slave-Device 1
admin (admin)

Reporting channels
Buttons & Function inputs
Relays
Repeat relays
LED-color selection

Help

Channel	Contact	Inputs	Relay is active	Inverted	Output parallel	Interface IEC	wipe duration
1	X34.1	1	☒	☐	☐	☒	500 ms
2	X34.2	2	☒	☐	☐	☐	500 ms
3	X34.3	3	☒	☐	☐	☐	500 ms
4	X34.4	4	☒	☐	☐	☐	500 ms
5	X34.5	5	☒	☐	☐	☐	500 ms
6	X34.6	6	☒	☐	☐	☐	500 ms
7	X34.7	7	☒	☐	☐	☐	500 ms
8	X34.8	8	☒	☐	☐	☐	500 ms

Tillägg:

Önskas samma tidsfördröjning för grupplarmsignalen på samtliga enheter:
%QX0.1.1 := %IX2.0.17 OR %IX2.0.18

I detta fall: LED 1 tänds på slavenheten när ingång 17 eller 18 aktiveras.

Se konfiguration nedan:

Generic parameter editor

Full logic functions ^

Index	Key	Data type	Parameter value	Delete
0	formula	Str	%QX0.1.1 := %IX2.0.17 OR %IX2.0.18	

+ Add entry

Nedan ingångar är nu grupperad till ingång 1 i slavenheten. Ingång 1 i slavenheten aktiveras med samma tidsfördröjning som angivits för respektive ingång på masterenheten, 17 eller 18. (Se bild nedan)

17	X14.1	Tidsf. Ingång 17	☐	☐	5	5	☒	☐	5	/	1000	☒	☐	☐	Horn is not locked	Physical input	☒
18	X14.2	Tidsf. Ingång 18	☐	☐	5	3	☒	☐	5	/	1000	☒	☐	☐	Horn is not locked	Physical input	☒

2.6.2 Logic functions (OR)

Den här parametergruppen kan enkel **OR-logik** konfigureras. Tidigare var denna funktion endast tillgänglig via Excel-parametrisering. Det är möjligt att använda upp till 16 logiska formler.

En logisk formel är uppbyggd enligt följande:

Första värdet anger rapporteringskanalsnummer (baserat på 1) som ska användas som "signalutgång". Separat med vertikala streck "|" listas de kanaler som ska ingå i den logiska **OR-funktionen**.

Enligt:

Gruppings nr. | Ingångs nr. | Ingångs nr |.....

Den rapporteringskanal som ska användas för att visa resultatet måste vara angiven med signalkällan "Logic" som i ovanstående fall.

Se nedanstående exempel:

1 Exempel på OR-logisk funktion där. I exemplet nedan ska kanalerna 1 och 2 på mastern OR-kopplas till kanal 8 på mastern:

The screenshot shows a web interface for configuring logic functions. At the top, there's a breadcrumb "Parameter / System" and a user dropdown "admin (admin)". Below is a navigation bar with tabs: Time, Network, User management, Device errors, Serial, Security, Firmware, Licences, Font, and Parameter editor (which is active). A "Help" button is on the left. The main heading is "Generic parameter editor". Below it, a dropdown menu shows "Full logic functions" expanded to "Logic functions (OR)". A table lists 16 logic function entries, each with an index, key, data type, and parameter value.

Index	Key	Data type	Parameter value
0	formula	LogicString	8 1 2
1	formula	LogicString	0
2	formula	LogicString	0
3	formula	LogicString	0
4	formula	LogicString	0
5	formula	LogicString	0
6	formula	LogicString	0
7	formula	LogicString	0
8	formula	LogicString	0
9	formula	LogicString	0
10	formula	LogicString	0
11	formula	LogicString	0
12	formula	LogicString	0
13	formula	LogicString	0
14	formula	LogicString	0
15	formula	LogicString	0

Reporting channels

/ Parameter / Devices / Slave-Device 1

admin (admin) ▾

Reporting channelsButtons & Function inputsRelaysRepeat relaysLED-color selection

HelpPrint labelsFill with default labels

Name of configuration:

Devicename:

Version of configuration:

C	I	Signal Name	OI	NC	DT	RD		DF	CR1	CR2	CR3	HT	signal source	A
1	X14.1	Gruppera ingång	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Logic ▾	☒
2	X14.2	Report 2X14.2	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
3	X14.3	Report 3X14.3	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
4	X14.4	Report 4X14.4	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
5	X14.5	Report 5X14.5	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
6	X14.6	Report 6X14.6	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
7	X14.7	Report 7X14.7	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒
8	X14.8	Report 8X14.8	☐	☐	5	0.100	☒	5 / 1000	☒	☐	☐	Horn is not locked ▾	Physical input ▾	☒

3. Parametrering

3.1 Skapa CID-filer 61850

Behörighetsnivå: Engineer

Steg 1) Välj vilken Edition av IEC 61850 ska skapas.

Bocka i delarna som önskas ingå i protokollet, viktigt att även ta med slavenheterna!

Se nedan exempel med standard *direct normal security*:

Parameter / Protocol / IEC 61850

admin (admin)

General settings

Server/GOOSE Publisher

GOOSE Subscriber

Nameeditor

Object parameters

Help

Export ICD-File

Protocol settings

Edition

Edition 2.1 (2007 revision B)

Control Model

direct normal security

Select available GGIOs

Device number	0	1
Input count	40	24
Output count	24	8
Include device in CID file	☒	☒
Dx_Input ⇅	☒ GGIO1	☒ GGIO11
Dx_Input delayed ⇅	☒ GGIO2	☒ GGIO12
Dx_Alarm unacknowledged ⇅	☒ GGIO3	☒ GGIO13
Dx_Alarm ⇅	☒ GGIO4	☒ GGIO14
Dx_Input double report ⇅	☒ GGIO100	☒ GGIO101
Dx_Function output ⇅	☒ GGIO6	☒ GGIO16
Dx_Output read ⇅	☒ GGIO7	☒ GGIO17
Dx_Function input ⇅	☒ GGIO8	☒ GGIO18
C0_Collective report ⇅	☒ GGIO71	
C0_Horn ⇅	☒ GGIO72	
C0_Status ⇅	☒ GGIO73	
C0_Error ⇅	☒ GGIO74	
Dx_Analog input ⇅	☒ GGIO120	☐ GGIO121
Dx_Input set ⇅	☒ GGIO40	☒ GGIO41
Dx_Function output_set ⇅	☒ GGIO50	☒ GGIO51
Dx_Relay command ⇅	☒ GGIO60	☒ GGIO61
Dx_Output double command ⇅	☒ GGIO110	☒ GGIO111
C0_Commands ⇅	☒ GGIO80	

3.2 Nameeditor

I *Nameeditor* ändras nätverksnamnen – inga nya objekt kan läggas till eller tas bort.
Här kan namn för *Subnetwork*, *IED* och respektive *dataobjekt* justeras i systemets struktur.

När alla namn är uppdaterade sparas konfigurationen med *Accept configuration*.

The screenshot shows the 'Nameeditor' tab in the IEC61850 configuration tool. The breadcrumb navigation at the top reads '/ Parameter / Protocol / IEC 61850' and the user is 'admin (admin)'. The 'Accept Configuration' button is in the top right corner. The main title is 'IEC61850 Nameeditor'. Below the title, there are four input fields: 'SubNetworkName' with the value 'SubNetwork1', 'apName' with 'P1', 'IEDName' with 'EESUSM1', and 'LDeviceInst' with 'LDevice1_Goran'. At the bottom, there is a 'DataObjects' section with an upward arrow icon.

3.3 Server/GOOSE publisher

För varje enhet (USM och eventuella BSM-slavar) kan objektnamn redigeras separat, t.ex. D0–D3 motsvarande enhet 0–3 (enhet 0 är masterenhet, enhet 1,2,3 är eventuella slavenheter)

The screenshot shows the 'Server/GOOSE Publisher' tab. The breadcrumb navigation is '/ Parameter / Protocol / IEC 61850' and the user is 'admin (admin)'. The 'Accept Configuration' button is in the top right corner. The main title is 'IEC61850 Server / GOOSE Publisher'. Below the title, there are three sections: 'DataObjects', 'Reports', and 'Datasets'. The 'DataObjects' section contains a list of 20 objects, each with a plus icon and a trash icon. The 'Reports' section has a plus icon. The 'Datasets' section has a plus icon. The 'GOOSE control blocks' section has a plus icon.

Ändringarna görs direkt i textfälten bredvid respektive parameter.

3.3.1 Exportera ICD filer

Server Publisher används för att verifiera dataset och GOOSE-parametrar.

Varje enhet (USM, BSM slavar) visas som en egen rad:

Tex(se bild nedan):

USM → LDevice1: Dataset1

Slav 1 → LDevice1: Dataset2

Dataset 3 = felkoder

Kontrollera att respektive GOOSE control block pekar mot rätt dataset.

Objekt kan omordnas med *drag & drop* eller öppnas med dubbelklick för ändring av attribut eller kanal-tilldelning.

1 Datasets für IEC61850 Server

Parameter / Protocol / IEC 61850

admin (admin)

General settings

Server/GOOSE Publisher

GOOSE Subscriber

Nameeditor

Object parameters

Help

Export ICD-File

IEC61850 Server / GOOSE Publisher

DataObjects

+ C0_Physical_Health

+ D0_Input (GGIO1)

+ D1_Input (GGIO11)

+ D0_Input delayed (GGIO2)

+ D1_Input delayed (GGIO12)

+ D0_Alarm unacknowledged (GGIO3)

+ D1_Alarm unacknowledged (GGIO13)

+ D0_Alarm (GGIO4)

+ D1_Alarm (GGIO14)

+ D0_Function output (GGIO6)

+ D1_Function output (GGIO16)

+ D0_Output read (GGIO7)

+ D1_Output read (GGIO17)

+ D0_Function input (GGIO8)

+ D1_Function input (GGIO18)

+ C0_Collective report (GGIO71)

+ C0_Horn (GGIO72)

+ C0_Status (GGIO73)

+ C0_Error (GGIO74)

+ D0_Input double report (GGIO100)

+ D1_Input double report (GGIO101)

+ D0_Analog input (GGIO120)

Reports

+ LDevice1:Report1

+ LDevice1:Report2

GOOSE control blocks

Datasets

Datasets

+ LDevice1:Dataset1

+ LDevice1:Dataset2

USM (Master)

BSM (Slav)

Parameter / Protocol / IEC 61850

admin (admin)

General settings

Server/GOOSE Publisher

GOOSE Subscriber

Nameeditor

Object parameters

Help

Export ICD-File

IEC61850 Server / GOOSE Publisher

DataObjects

+ C0_Physical_Health

+ D0_Input (GGIO1)

+ D1_Input (GGIO11)

+ D0_Input delayed (GGIO2)

+ D1_Input delayed (GGIO12)

+ D0_Alarm unacknowledged (GGIO3)

+ D1_Alarm unacknowledged (GGIO13)

+ D0_Alarm (GGIO4)

+ D1_Alarm (GGIO14)

+ D0_Function output (GGIO6)

+ D1_Function output (GGIO16)

+ D0_Output read (GGIO7)

+ D1_Output read (GGIO17)

+ D0_Function input (GGIO8)

+ D1_Function input (GGIO18)

Reports

+ LDevice1:Report1

name

=

Report1

Report

bufTime

=

100

buffered

=

true

confRev

=

2

datSet

=

Dataset1

intgPd

=

1000

Trigger

Options

ReportsEnabled

Datasets

+ LDevice1:Dataset1

name

=

Dataset1

C0_PhyHealth

{stVal, q}

LDevice1:InDly_GGIO2_SPCS01

D0_1_InDly_

{stVal, q}

LDevice1:InDly_GGIO2_SPCS02

D0_2_InDly_

{stVal, q}

LDevice1:InDly_GGIO2_SPCS03

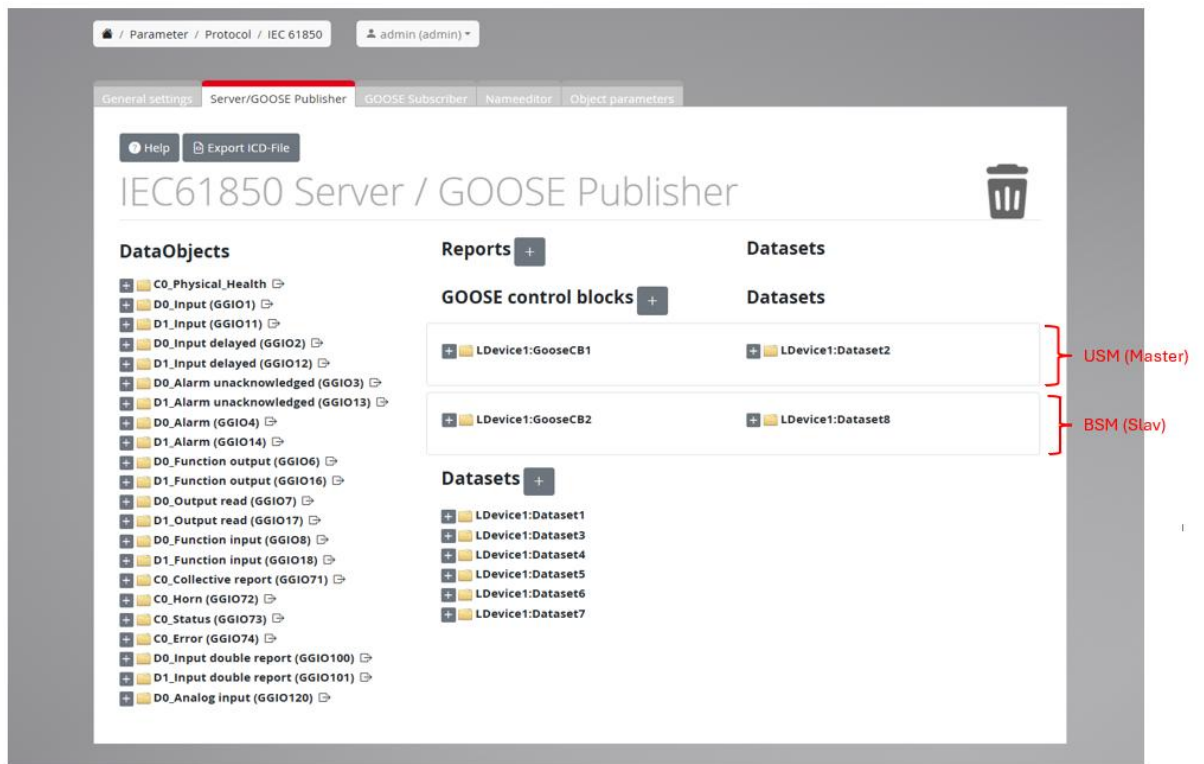
D0_3_InDly_

{stVal, q}

LDevice1:InDly_GGIO2_SPCS04

D0_4_InDly_

2 Datasets för GOOSE kommunikation



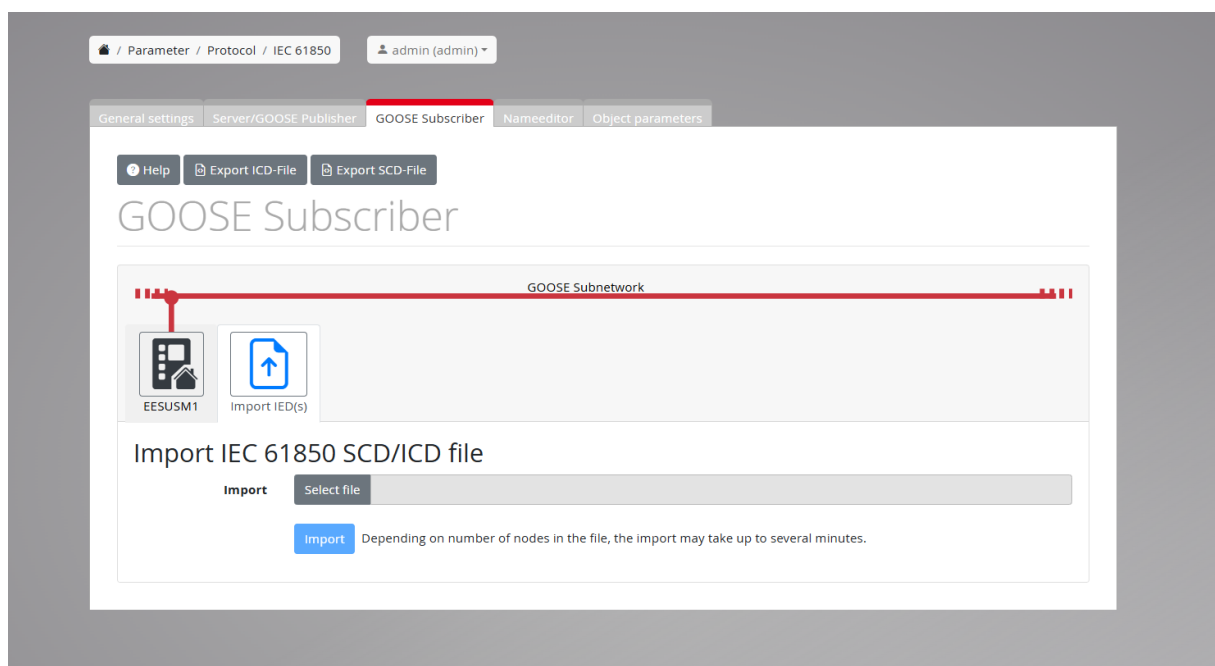
3.3.2 Importera IED-filer

Ytterligare IED:er importeras via *Import IED(s)* med ICD/SCD-fil och bekräftas därefter.

Radering sker via *Delete IED* eller *Delete candidates*.

Den lokala USM-enheten kan inte tas bort.

Avsluta genom att trycka *Accept configuration* i höger meny.



Tips: Säkerställ konsekventa IED- och dataset-namn innan export av CID-fil.

3.4 Ändra IP adress

För att ändra IP-adress på enheten(Se bild nedan):

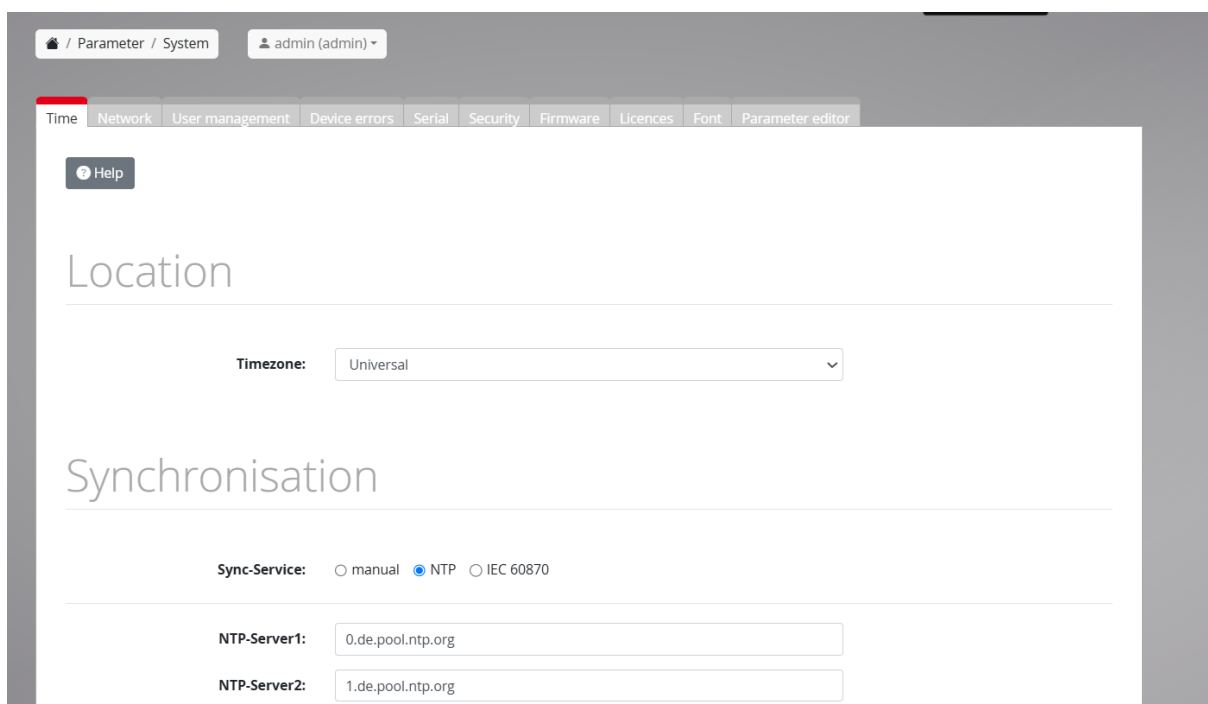
Parameter → *System* → *Network*

The screenshot shows a web interface for configuring network settings. At the top, there is a breadcrumb trail: *Parameter* / *System*. To the right of the breadcrumb is a user profile dropdown showing 'admin (admin)'. Below the breadcrumb is a horizontal menu with tabs: *Time*, *Network* (highlighted in red), *User management*, *Device errors*, *Serial*, *Security*, *Firmware*, *Licences*, *Font*, and *Parameter editor*. A 'Help' button is located on the left side of the main content area. The main content area is titled 'Network ETH0 (X8)'. It contains several configuration fields: 'IP-Address' with a text input containing '192.168.1.99', 'Subnetmask' with a text input containing '255.255.255.0', 'IP-Gateway' with a radio button set to 'enabled' and a text input containing '0.0.0.0', 'IEC61850 interface' with a radio button set to 'default', and 'MTU size' with a radio button set to 'default' and a 'manual' option with a text input containing '1500'. At the bottom of the main content area is a section titled 'DNS-Server' with two radio buttons: 'DNS inactive' (selected) and 'DNS active'.

3.5 Tidssynkronisering/NTP

För att ange NTP (Se bild nedan):

Parameter → *System* → *Time* → Ställ in rätt NTP adress



The screenshot shows a web interface for configuring system parameters. At the top, there is a breadcrumb trail: **/ Parameter / System**. To the right of the breadcrumb is a user profile dropdown showing **admin (admin)**. Below the breadcrumb is a horizontal menu with tabs: **Time**, **Network**, **User management**, **Device errors**, **Serial**, **Security**, **Firmware**, **Licences**, **Font**, and **Parameter editor**. The **Time** tab is currently selected. On the left side of the main content area, there is a **Help** button. The main content area is divided into two sections: **Location** and **Synchronisation**. In the **Location** section, there is a **Timezone:** label followed by a dropdown menu showing **Universal**. In the **Synchronisation** section, there is a **Sync-Service:** label followed by three radio buttons: **manual**, **NTP** (which is selected), and **IEC 60870**. Below this, there are two input fields: **NTP-Server1:** with the value **0.de.pool.ntp.org** and **NTP-Server2:** with the value **1.de.pool.ntp.org**.

4 Felkoder

3.13.2 Error list

The error numbers listed in the following table correspond to the red flashing sequence of the "Operating status" annunciator light of the USM.

Example:

Error 68	- Connection to the NTP server disrupted
Flashing sequence of the annunciator light	- long, long, long, long, long, long, long short, short, short, short, short, short, short, short break

The following table lists the error codes of the USM.

Error number	Error	Remark
1	Collection errors	This error is also triggered if any error occurs in the fault annunciator.
11	Parameter Initialization error	If the error occurs again after restarting the device, the device must be sent to EES for inspection.
12	Internal communication error	
13	Overflow alarm buffer	After the occurrence of an alarm surge, intermediate states of alarms may have been lost. The final states are valid.
14	Relay card faulty	If the error occurs again after restarting the device, the device must be sent to EES for inspection.
15	Communication in the fault alarm cascade disrupted	This error can occur in fault alarm cascades. It is displayed if the connection between the USM and at least one configured slave (BSM) is interrupted. Please check the configuration of the slave addresses on the BSM and the Connection cable.
17	Primary voltage U_{B1} missing	Faults in fault annunciators with redundant power supply
18	Secondary voltage U_{B2} missing	
19	Configuration inconsistent	The configuration that has been saved does not match the device (e.g. USM 08 and USM 16).
31	IEC 61850 license error	The 61850 license does not match the device. Has the license been installed in the correct device? Contact customer service.
32	CID file is missing	Import CID file
33	XML configuration file missing	Restore factory settings via web server, then carry out or import parameterization again. Contact customer service if the error persists.
34	XML import incorrect	Import correct file or restore factory settings via web server.
35	CID file incorrect	The imported CID file is not correct. Import a correct file.
41	Extension address incorrect	In cascaded systems The slave generates the error if it is set to address "0". is set.

Table 3.3-1: Error codes of the USM part 1

Error number	Error	Remark
42	Extension address multiple	In cascaded systems - Master generates the error if a slave at address "0" is set - Slave generates the error if another slave with the same address sends. There are two slave devices with the same address.
48	Wire break 4 - 20 mA sensor	If the measuring mode is set to 4 - 20 mA for an analog input, this error is displayed in the event of a wire break. A wire break is detected if the current is less than 3.6 mA.
63	IEC 104 Client connection	A configured IEC server cannot be reached by the client or does not send any data.
64	No Ethernet connection ETH0 (X8)	Ethernet connection faulty - Check the Ethernet cable on the USM and the remote station (switch).
65	No Ethernet connection ETH1 (X98)	
67	IEC104 Client GA not complete	The IEC server can be reached by the client, the general query but returns incomplete data. - Check the configuration in the server.
68	NTP connection	Connection to the NTP server disrupted The error is generated if neither of the two parameterizable NTP servers can be reached within 10 minutes. To make commissioning easier, this error is signaled after 10 s after the voltage has been switched on or a changed parameterization has been accepted.
71	Primary voltage UB1 missing	Power supply error in slave 1
72	Secondary voltage UB2 missing	
73	Primary voltage UB1 missing	Power supply error in slave 2
74	Secondary voltage UB2 missing	
75	Primary voltage UB1 missing	Power supply error in slave 3
76	Secondary voltage UB2 missing	
160 - 191	Connection error to the respective IEC 104 server (link 1 - 32)	If the USM is operated as a client, the following can be selected in the "Parameters/Protocols/IEC160870-5-101/104" links to a maximum of 32 servers can be parameterized. An error alarm is provided for each of these links.

Table 3.3-2: Error codes of the USM Part 2