TSEC 3000

ESPA Installation and configuration

(version 1.02)

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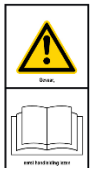


Notice, read this manual prior to installation.

Notice, in the event of disposal, hand it in at the designated place, do not place it in the waste

If the TSEC 3000 is powered from an AC / DC adapter, a SELV type Power supply with double insulation construction should be used.

In case of a battery powered supply or an inadequately fused power supply, a 315 mA fuse should be included in the power line.

Only use the antenna supplied, do not use an antenna with amplification.

Clean the product with a dry cloth, do not use a damp cloth.
Separate packaging: paper and cardboard with paper waste, others with residual waste.
Transport and storage: see technical specifications chapter 12 of the TSEC 3000 manual.

For returns and repairs, please contact Telesignal.

1 General information

The TSEC 3000 is an IP – LTE-M/GPRS alarm transmitter equipped with multiple transmission paths. The basic versions has a LAN-WAN ethernet port for open and closed networks. An optional GSM module offers a backup or primary transmission using LTE-M or GPRS mobile networks. Alarms are triggered over the standard analogue guarded inputs or the optional dial capture port for SIA and Contact-ID PSTN alarm panels. The TSEC 3000 is available for 90-260 VAC power supplies (C versions) and for 12-28 VDC power supplies (E versions). The ESPA version has an additional RS232 ESPA 4.4.4 port to connect directly to a fire panel. This manual describes the installation and configuration of the ESPA expander for the TSEC 3000 series.

1.1 Product indication

The TSEC 3000E (-GP) 12-28 VDC basic version with ethernet port is also available with the factory installed GSM, ESPA and-or Dial capture modules:

TSEC3000E	12V-28 VDC Ethernet
-G	GSM LTE-M/GPRS module
-P	Dial capture module
-GP	GSM LTE-M/GPRS & Dial capture module
..ESPA	Above versions with additional RS232 ESPA

The TSEC 3000C (-GP) 90-260 VAC basic version with ethernet port is equipped with an integrated AC power supply, temperature controlled battery charger and programmable 18W AUX DC power output. The TSEC 3000 C is also available with the factory installed GSM, ESPA and-or Dial capture modules:

TSEC3000C	90-260 VAC Ethernet
-G	GSM LTE-M/GPRS module
-P	Dial capture module
-GP	GSM LTE-M/GPRS & Dial capture module
..ESPA	Above versions with additional RS232 ESPA

1.2 ESPA versions

The 12-28 VDC ESPA versions are available as a PCB and in a metal wall mount enclosure. The plastic enclosure is not suitable for the TSEC 3000 with ESPA port. The 90-260 VAC version is only available in a metal wall mount enclosure and is suitable for the additional ESPA port. All ESPA versions are delivered with a conversion board with screw terminals for easy installation of the ESPA wiring.

2 ESPA connection

The ESPA port is based on the 4.4.4 protocol. The activation of an ESPA alarm is configurable for received "Call address" also known as the pager number or pager group and for the start text of the "Display message" also known as the text message. The TSEC 3000 checks every ESPA message for the programmed activation triggers. If a correct trigger is detected the TSEC 3000 converts this into a reportable alarm format like SIA DC09 for the alarm transmission to the monitoring centre. Per "call Address" and "Display message" a SIA alarm type can be programmed to separate f.i. smoke, manual and sprinkler alarms. See chapter 5.4 for detailed configuration information.

The serial connection for the RS232 port is configurable for the common baud rates and data settings. See chapter 5.1 for detailed information about the serial settings.

2.1 Direct alarm using EN54-21 inputs

The ESPA generated alarms should be used as additional detailed alarm information. For use according to EN54-21 regulation always connect an analogue A1-A8 contact input to transmit general fire alarms to the monitoring centre.

2.2 *Fallback at ESPA failure and generic alarm restore !*

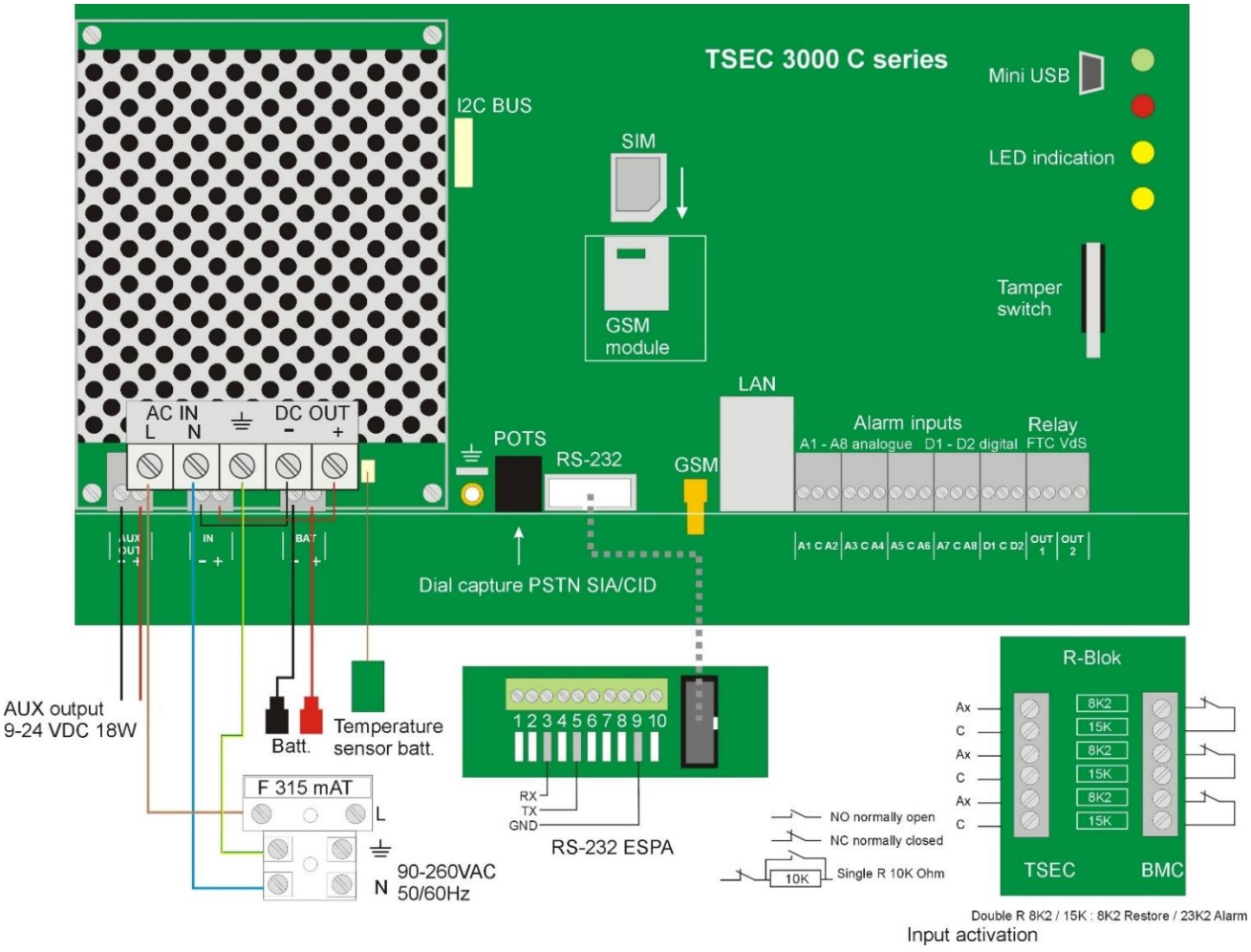
The ESPA fire panel should also activate a relay output at a fire alarm that is connected to input D1 or D2. After activation of this input, the TSEC 3000 waits for 30 seconds if a valid fire alarm is detected on the ESPA port. If not the TSEC 3000 transmits a fire fallback alarm (FA) to the monitoring centre. At restore of this input the TSEC 3000 always reports a generic fire restore (FR) message, even when no activation was reported. This generic restore is necessary for the monitoring centre to restore all ESPA generated fire alarms that were sent previous to the restore. Normally a fire alarm for a specific zone is restored by reporting a fire restore message for that zone. ESPA messages only send the alarm but not the restore. To make sure that a new ESPA alarm, that was already reported in the past, will trigger a new alarm at the monitoring centre it is important that the old alarm is restored.

2.3 *ESPA heartbeat*

The communication between the fire panel and the TSEC 3000 is continuously monitored by heartbeat messages. If the heartbeat fails the TSEC 3000 sends a SIA ET 3015 report. At restore the SIA ER 3015 is send. The maximum timeout for the heartbeat is set in the System programming sheet, see chapter 5.3.

3 Connections and terminals

In this chapter all relevant connections and terminals for the ESPA configuration are explained. See the TSEC 3000 ParamIt+ V1.08 or higher manual for the complete documentation about connections and configuration.



This figure shows all connections of the TSEC 3000 C series, the relevant ESPA connections for the E series are equal to the C series.

EN54-21 fire alarm activation:
Analogue alarm input A1 to A8. Set programming to double resistor guarded in combination with the R-Blok or two resistors if the distance between the fire panel and the TSEC 3000 exceeds 1 meter. Use E30 cable specification.

Fallback activation:
Digital input D1 or D2, configure SIA alarm FA to this input. Set to NO or NC according to the fire panel relay output.

Per two inputs one common is available. All commons are interconnected.

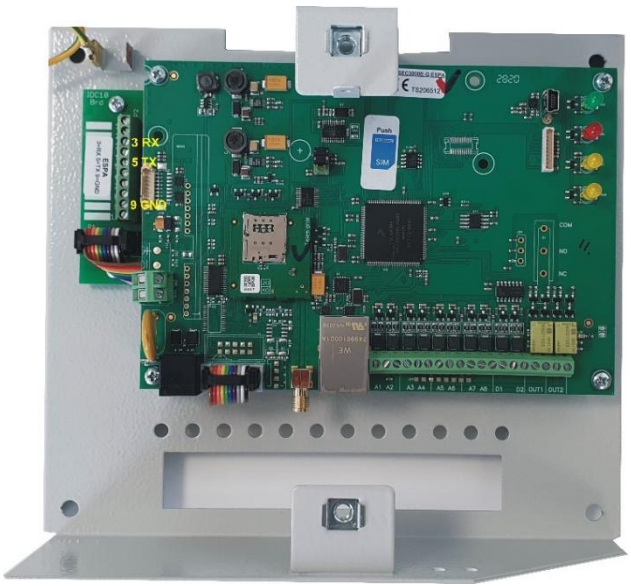
The screw terminal is suited for 0,2 ~1,5 mm2 wiring, maximum torque 0,4 Nm

3.1 ESPA RS232 TSEC

The ESPA RS232 port is supplied with a nine or ten pole screw terminal. Only three connections are used:

10 pole:
3 = RX
5 = TX
9=GND

9 pole:
SUB-D:
2 = RX
3 = TX
5 = GND



4 LED indication

The TSEC 3000 is equipped with four status LED's:

Green	ON: power OK, TSEC 3000 is stand-by (operational) FLASHING fast: TSEC 3000 reboots in progress FLASHING slow: active tamper on input, expander card or power failure
Red	ON: alarm transmission in progress FLASHING slow: transmission failed, retry timer for transmission attempts active FLASHING fast: 10 seconds: alarm acknowledged by monitoring site
Yellow C	ON: dial capture port active, FLASHING: ESPA failure
Yellow !	FLASHING short ON, long OFF: Ethernet failure FLASHING long ON, short OFF: LTE-M/GPRS failure ON: Ethernet and LTE-M/GPRS failure

5 ParamIt+ configuration

All parameters for the TSEC 3000 are easily configured with the *ParamIt+* program tool. *ParamIt+* is the second generation of the universal windows USB program for configuration and diagnostics of the Telesignal TSEC 2000 and TSEC 3000 series transmitters. *ParamIt+* is free available for download on our website, the web-installer takes care of an easy installation and setup

Start *Param-It+* by double clicking the icon:

ParamIt+

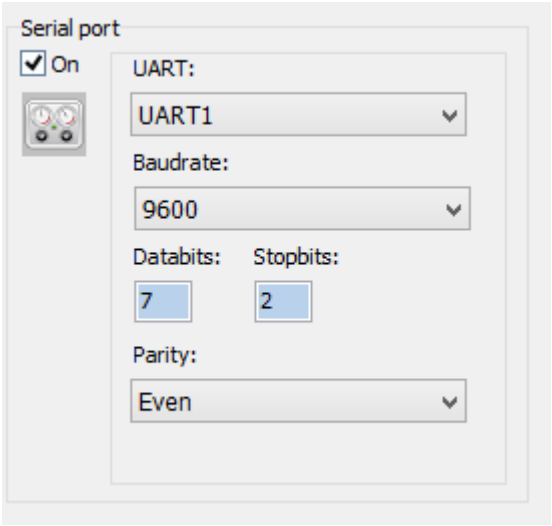
In this manual only the specific ESPA settings are described. See the TSEC 3000 ParamIt+ V1.08 or higher manual for the complete documentation about ParamIt+ configuration.

5.1 Tab Modules

The module tab contains the hardware settings of the TSEC 3000. The availability of a hardware module depends on the TSEC version. For the ESPA versions the Serial port is added.

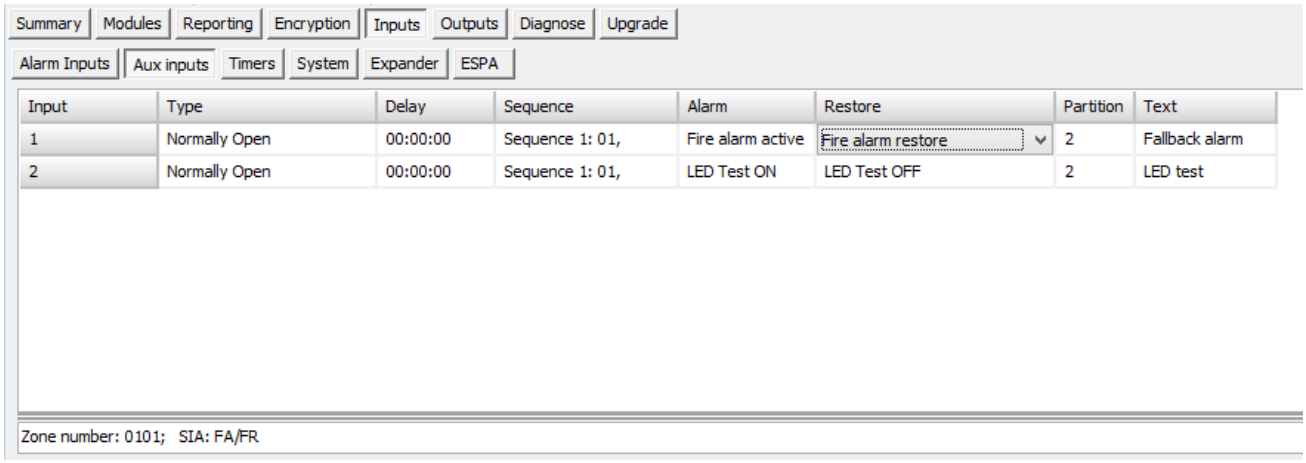
Activate the serial port by ticking the On box.

Select UART1
Set the serial port according to the fire panel ESPA specification:
Baudrate: 300 ~115200
Databits: 7 or 8
Stopbits: 1 or 2
Parity: None, Even or Odd



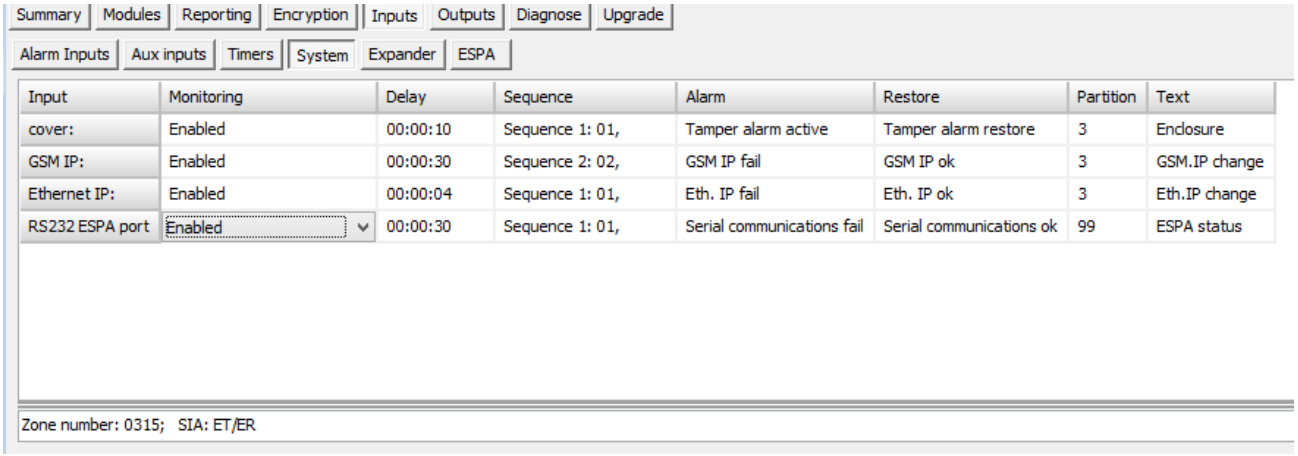
5.2 Tab Inputs > AUX inputs: fallback alarm

Always activate and connect the fallback alarm by configuring a SIA FA alarm and FR restore on digital AUX input 1 or 2. Connect a generic fire alarm relay output of the fire panel to this input. This output should restore if all ESPA fire alarms are restored. See chapter 2.2 for detailed information.



5.3 Tab Inputs > System : ESPA heartbeat monitoring

In the System Tab the configuration for the cover switch (C versions) and the local transmission (GSM and Ethernet) paths monitoring are listed. For the ESPA versions the input RS232 ESPA port is available.



- Input:
  - RS232 ESPA port
- Monitoring, dropbox options for activation of the monitoring:
  - Disabled, no monitoring
  - Enabled, monitoring active
- Delay, setting in hours:minutes:seconds. Maximum heartbeat timeout. If no heartbeat is received from the fire panel within the maximum timeout, the TSEC 3000 sends a ET3015 failure report. After restoral of the heartbeat, the TSEC 3000 sends a ER3015 report, also after the timer expires.
- Sequence, dropbox for selection of the sequence for the system reports as configured in the Reporting tab sheet. If Clear is selected no reports are sent but the LED indication at failure is still present.
- Alarm, dropbox voor selection of the SIA alarm type sent at failure of the system event. The corresponding SIA, CID or VdS 2465 code is shown in the line below the inputs.
  Fixed code:
  - ET3015 serial communications fail
- Restore, dropbox voor selection of the SIA restore type sent at restore of the system event. The corresponding SIA, CID or VdS 2465 code is shown in the line below the inputs.
  Fixed code:
  - ER3015 serial communications OK
- Partition, entry for partition (area) number for the power source.
- Text, configurable text field for a maximum of 16 characters. The text is sent at every alarm and restore message if supported by the protocol. Enter only characters A-Z a-z and 0-9, **no** comma's or international characters like ü, ö, ß etc.

5.4 Tab Inputs > ESPA :

In this tab the ESPA triggers and reports are configured. Most fire panels use standard trigger sets. The TSEC 3000 ESPA offers a flexible configuration of the triggers and therefore easy to configure for all fire panels with an ESPA 4.4.4 serial port. Triggers are available for Call address and Display message, see ESPA 4.4.4 documentation chapter 4.3. In the column Type the trigger type is set:

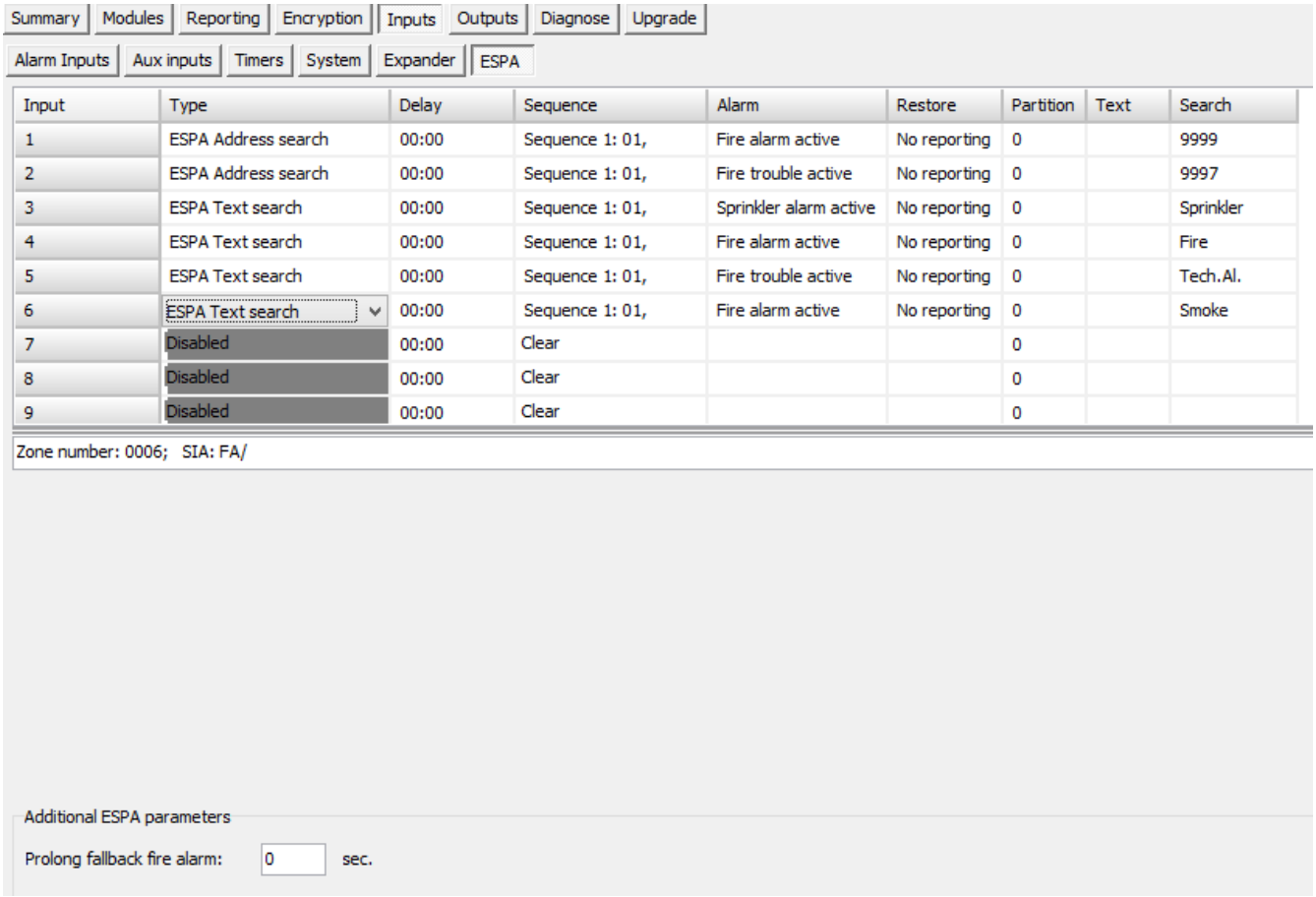
ESPA Address search, corresponding address in the Call address field will trigger the alarm.
ESPA Text search, corresponding starting text followed by a space in the Display message field will trigger the alarm.

4.3 RECORDS

The contents and meaning of each record are defined in the following table. Note that data may have more characters, for example, to indicate a type or subdivision in the data. In most cases the character '0' is reserved for future expansion e.g. '1' is not the same as '01' or '001' etc.

Record type	Data Identifier	Data	Meaning
Call address	'1'	max 16 Characters	Address of the pager or a group of pagers
Display message	'2'	max 128 Characters	The message to be displayed

ESPA 4.4.4 chapter 4.3



Example configuration, a maximum of 10 separate triggers are configurable.

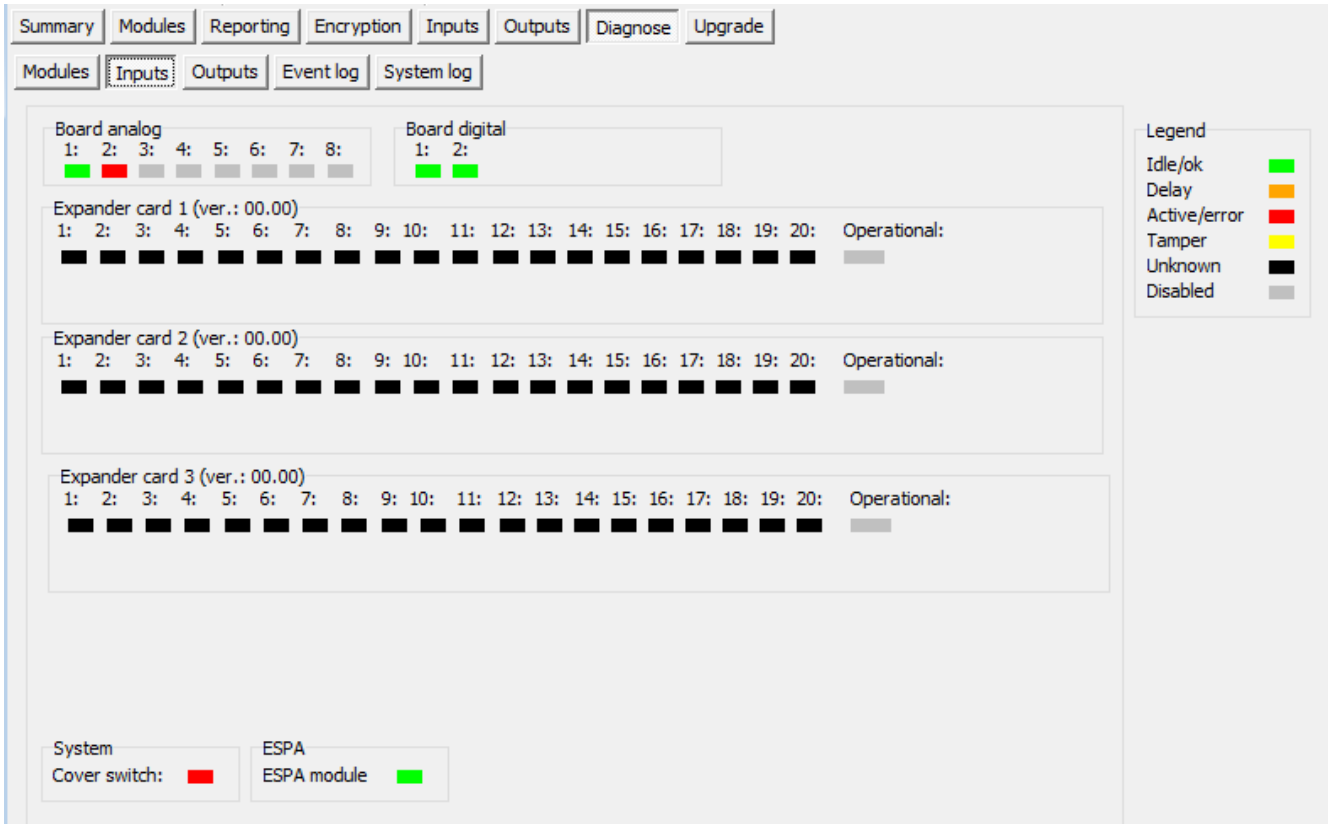
SIA	Trigger	Type	Report
FA:	9999	Call address	Fire Alarm
FT:	9997	Call address	Fire trouble
SA:	Sprinkler	Display message	Sprinkler Alarm
FA:	Fire	Display message	Fire Alarm
FT:	Tech.Al.	Display message	Fire trouble
FA:	Smoke	Display message	Fire Alarm

Set the delay to 00:00
Set the Restore column to No reporting. ESPA doesn't send restore messages.
Select the desired sequence for the reporting.

Additional ESPA parameters
Some fire panels activate the generic fire alarm relay output after the ESPA message is broadcasted. This will result in a fallback alarm reporting because the TSEC 3000 checks after activation of the fallback input if an ESPA fire alarm message is received. The Prolong fallback fire alarm allows a delay up to 60 seconds for the generic fire alarm relay to become active after the ESPA fire alarm was broadcasted.

5.5 Tab Diagnose > Inputs: ESPA status

The status of the ESPA connection is added on the bottom of the screen.



ESPA module: Green: communication OK
Red: communication failure

5.6 Tab Diagnose > System log: ESPA analysis

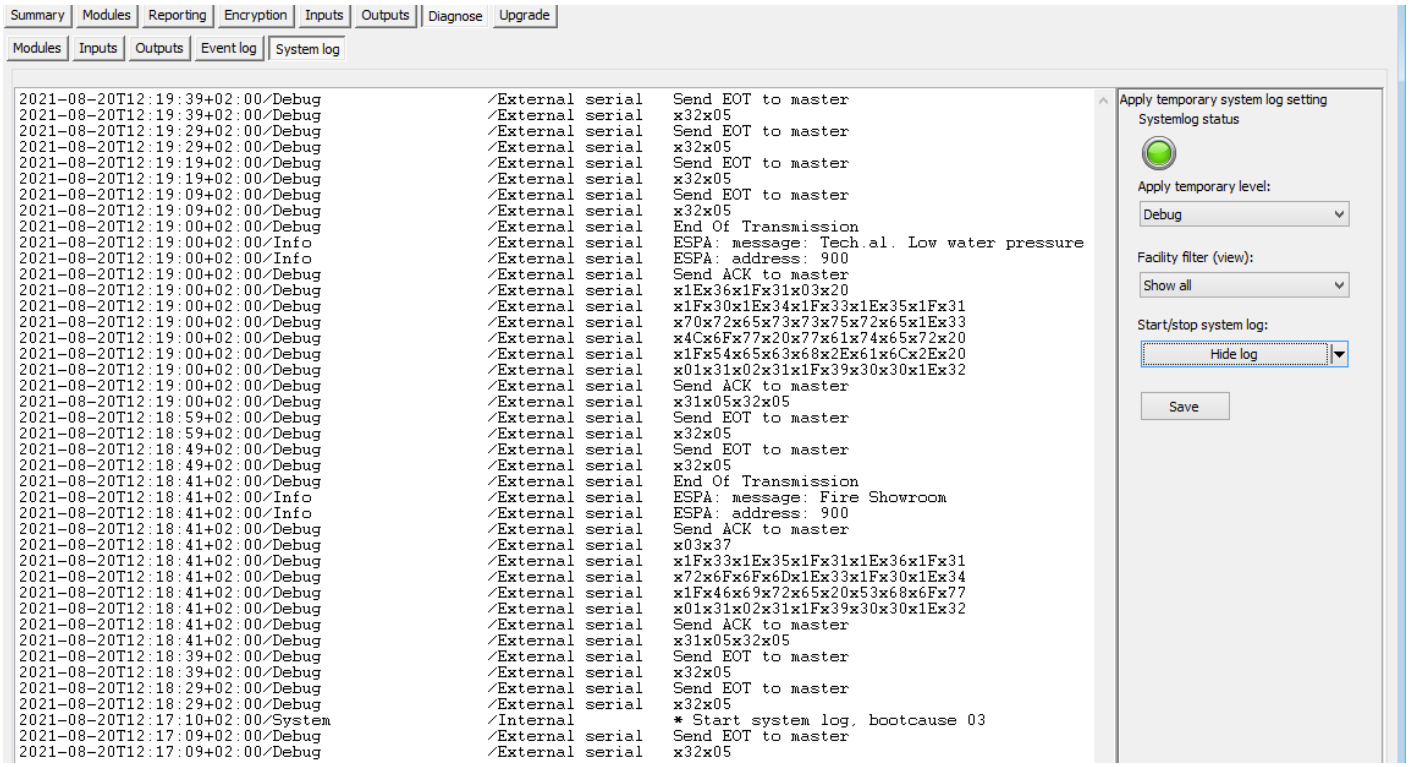
The system log shows the realtime ESPA communication. This is a powerful tool to analyse the ESPA data that is send by the fire panel. This will help to configure the triggers.

The left column shows the UTC date and time of occurrence followed by the selected monitoring level. Set the level to Debug for optimal information.
The /External serial indicates that the message was received by the ESPA port.

Heartbeat data:

X32x05	heartbeat send from the fire panel
Send EOT to master	reply from TSEC 3000

In the example below the heartbeat interval is set to 10 seconds.



Alarm data:
The alarm data is showed in hex asci and the translation. In the example above are two alarms:

ESPA: address: 900
ESPA: message: Fire Showroom

ESPA: address: 900
ESPA: message: Tech.al. Low water pressure

Both use the same Call address 900 but are sent separately because the trigger was set to Text Search

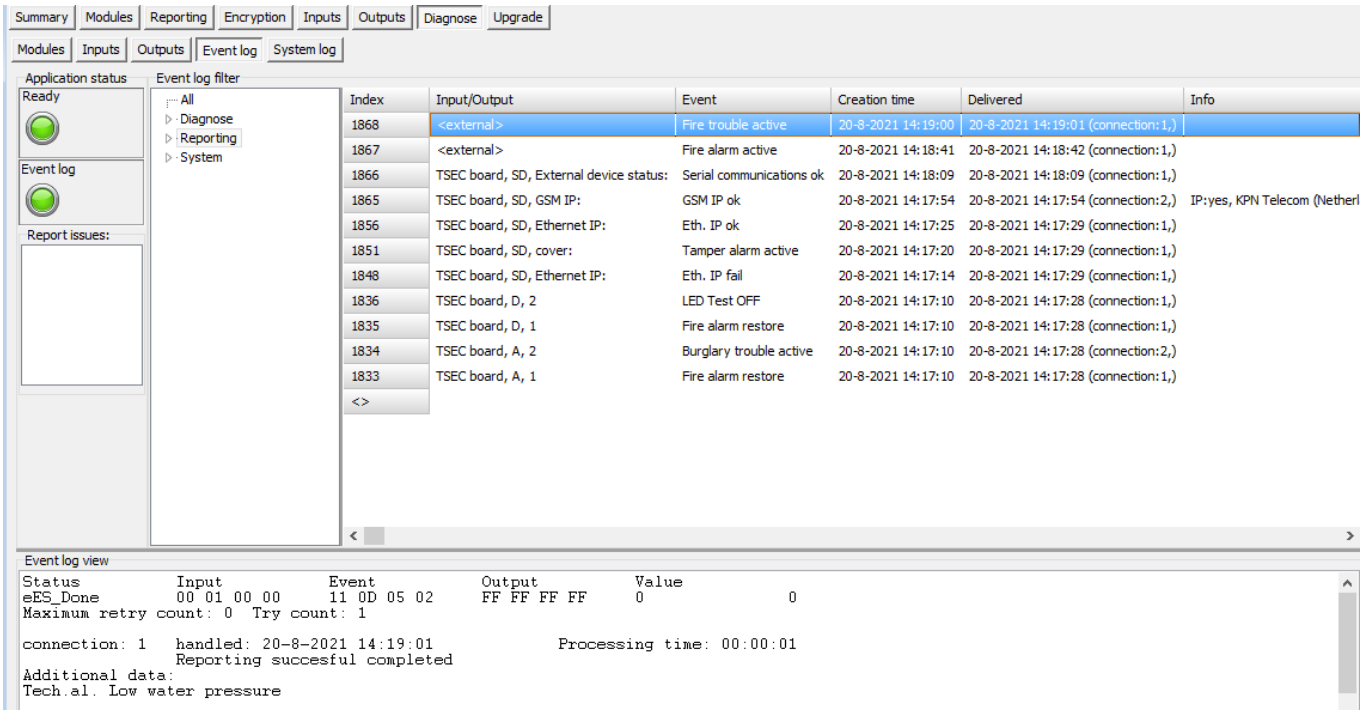
Remark: The character set conforms to the international alphabet number 5 (CCITT V3 & ISO 646, see Appendix A of the ESPA 4.4.4 document.) International characters with umlaut and sharp s like ü, ä, ö, ß are not allowed. This can result in an incorrect translation or trigger failure.

5.7 Tab Diagnose > Event log: ESPA reporting

The Event log shows the triggered events and the reporting status.

On the top half of the screen the chronological events are listed with an index number. The ESPA events are indicated as <external>.
The Event column shows the reported SIA alarm type.
The Creation time column shows the date and time the message was received on the ESPA port.
The delivered column shows the date and time the report was acknowledged by the receiver of the monitoring centre.

A selected row is highlighted and the details are shown on the bottom part of the screen. In the example below the ESPA fire trouble message Low water pressure.



6 Tested ESPA fire panels

At the moment (08-201) the TSEC 3000 ESPA is compatible with the fire panels listed below. Check our website for updates on the compatible ESPA list. The Telesignal R&D department can analyse and implement deviant versions of the ESPA format, contact us for more information.

Compatible ESPA fire panels (status 08-2021)

- ESSER ESPA SEI V2
- Hertek Penta
- Siemens FS20
- Novar IFAM ADP 4000
- Dräger IFAM ADP 4000
- LST
- Protec Protocol Converter
- NSC Solution F1 en F2
- Notifier
- Argina GMC+

7 Support

For technical information and support contact our support desk at + 31 (0)318-521111
Open on working days from 08:30 until 17:00. Remote support is available with Teamviewer and Anydesk. An Anydesk session can be started by clicking the icon below.