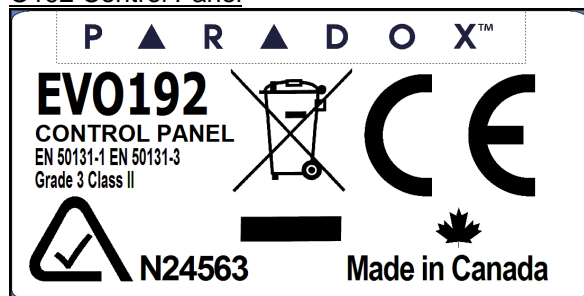
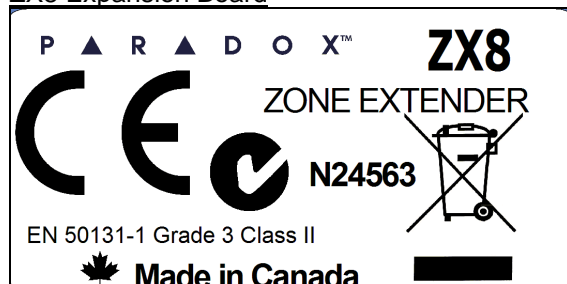
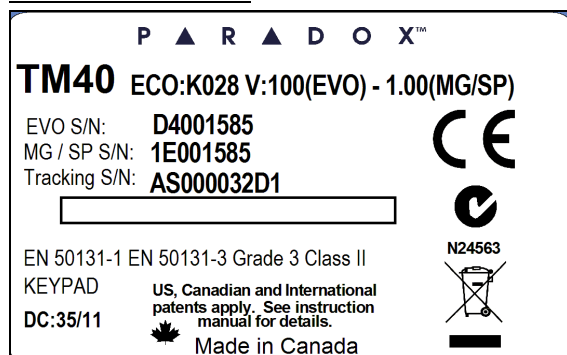
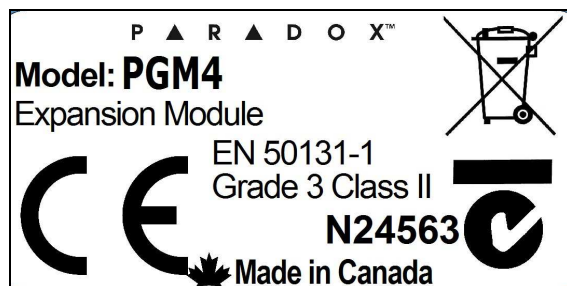


<b>Noncompliant TEST REPORT</b> <b>EN 50131-3</b> <b>Alarm systems – Intrusion and hold-up systems</b> <b>Part 3: Control and indicating equipment</b>		
Report Reference No.....	100484764MIN-012	
Compiled by (+ signature).....	Chris Rash	<i>Signature on file</i>
Approved by (+ signature) .....	Brian Kleiber	<i>Signature on file</i>
Date of issue .....	2012-March-5	
Revised by (+ signature) .....	Randy Libersky	<i>Randy Libersky</i>
Revision approved by (+ signature) ..:	Chris Rash	<i>Chris Rash</i>
Date of revision .....	2013-April-18	
<b>CB Testing Laboratory</b> .....	Intertek Testing Services NA, Inc.	
Address .....	7250 Hudson Blvd, Suite 100 Oakdale, MN 55128 USA	
Testing location/procedure .....	CBTL <input checked="" type="checkbox"/>	SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Address .....	As above	
<b>Applicant's name</b> .....	Paradox Security Systems Ltd.	
Address .....	6 Milton Street PO Box F-42498 Freeport, Bahamas	
<b>Test specification:</b>		
Standard .....	EN 50131-3: 2009	
Test procedure .....	Test report format	
Lab accreditation .....	Tested in accordance with A2LA accreditation to IEC/ISO 17025:2005, Certificate number 1427.01	
<b>Test Report Form No.</b> .....	EN50131_3A	
TRF Originator .....	Intertek Testing Services NA, Inc	
Master TRF .....	Dated 2010-06	
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<b>Test item description</b> .....	Digiplex EVO High Security and Access System	
Trade Mark .....	Paradox	
Manufacturer .....	Paradox Security Systems Ltd.	

Model/Type reference .....	EVO192, ZX8, TM40, RTX3, PGM4, TM50
Ratings.....	EVO192: AC Power: 16Vac, 40VA, 50-60Hz Battery: 12Vdc, 7Ah minimum
	ZX8: Input Voltage: 12 to 16Vdc Current Consumption: 20mA No. of outputs: One 50mA PGM
	TM40: Power Input: 9 to 16Vdc, 100mA
	EVO 192 board: TRP40/16/18 Transformer: Input Voltage: 230 Vac, 50 Hz, Output Voltage: 16 Vac, 2.2A and 18 Vac, 2.0A
	PGM4: 13mA, 150mA max
	RTX3: 12 Vdc, powered from EVO192
	TM50: 9 to 16Vdc, Standby: 100mA, Alarm: 200mA

**Copy of marking plate:**O192 Control PanelZX8 Expansion BoardTM40 Touch ScreenPGM4 Expansion module

RTX3 Expansion moduleTM50 Touch Screen

**Summary of Testing**

<u>EN 50131-3 Section</u>	<u>Test Description</u>	<u>Result</u>
11.3	Reduced functional test	Pass
11.4.1	Functional tests: Processing of intruder alarm signals or messages	Pass
11.4.2	Functional tests: Processing of hold-up signals or messages	Pass
11.4.3	Functional tests: Processing of tamper signals or messages	Pass
11.4.4	Functional tests: Processing of fault signals or messages	Pass
11.5	Access level	Pass
11.6	Authorization requirements	Pass
11.7.1	Operational tests: Setting procedures	Pass
11.7.2	Operational tests: Prevention of setting and overriding of prevention of setting procedures	Pass
11.7.4	Operational tests: Unsetting procedures	Pass
11.7.7	Operational tests: Test functions	Pass
11.7.10	Availability of indications	Pass
11.8.2	Tamper security tests: Tamper protection	Pass
11.8.3	Tamper security tests: Tamper detection - Access to the inside of the housing	Pass
11.8.4	Tamper security tests: Tamper security tests: Tamper detection - Removal from mounting	Pass
11.10	Testing of I&HAS timing performance	Pass
11.11	Testing for interconnections	Pass
11.12	Event log	Pass
11.14	Environmental and EMC tests	Pass
Project G100803903MIN		
11.14	Environmental and EMC tests	Pass

<b>Test item particulars</b> .....	
Classification of installation and use ..... : Security grade 3, Environmental class II	
Supply Connection ..... : EVO192: AC Power: 16Vac, 40VA, 50-60Hz	
..... : (ZX8 and TM40 receive power from EVO192	
..... : Control panel) TRP40/16/Transformer: 230Vac, 50 Hz	
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object ..... : N/A	
- test object does meet the requirement..... : P(Pass)	
- test object does not meet the requirement..... : F(Fail)	
<b>Testing</b> .....	
Date of receipt of test item ..... : 2011-Jul-15	
Date (s) of performance of tests ..... : 2011-Aug-16 to 2011-Sep-14, 2011-Dec-21 to 2011-Dec-28, 2012-Jan-16 40 2012-Jan-20	
<b>Part Number/Description</b>	<b>Serial Number</b>
EVO192	05014401
EVO192	050143E3
EVO192	0501211C
EVO192	0501121D
EVO192	05012100
ZX8	34930B08
ZX8	34930B05
ZX8	34930B04
ZX8	34930B07
TM40	D40019DF
TM40	D4000303
TM40	D4000301
TM40	D40030A
TM40	D400019D7
TM40	D420040D
Project G100803903MIN	
PGM4 – Relay Board	09400BCA1
EVO192 Panel	05024E77
TM50 Keypad	AT00000E97

**General remarks:**

The test results presented in this report relate only to the object tested.

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"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Following abbreviations are used:

- APS: Alternative Power Source;
- CIE: Control and Indicating Equipment;
- EPS: External Power Source;
- IAS: Intruder Alarm System;
- PPS: Prime Power Source;
- PS : Power Supply;
- PU : Power Unit;
- SD : Storage Device.

**General product information:**

The DigiPlex EVO System is an advanced technology security system consisting of the EVO192 Control Panel including the control board, ZX8 8-Zone Expansion Module, and the TM40 Touch Interface Module.

The DigiPlex EVO192 Control panel has 8 on-board zone inputs (16 with zone doubling) that is expandable to 192 zones via the 4-wire combus. The digital combus provides constant power, supervision, and two-way communication between the control panel and all its modules. The control board contains 5 on-board solid-state PGM outputs. It will support 254 expansion bus modules. It also contains the following: 999 user codes, 8 partitions, 2048 events buffered, 1 supervised bell output, auxiliary output, and telephone line. The zones can be configured as an entry delay, follow, instant, 24 hr. buzzer, 24 hr. burglary, 24 hr. hold-up, 24 hr. Gas, 24 hr. water, 24 hr. freeze, delayed 24 hr. fire, standard 24 hr. fire, and stay delay.

The PGM4 expansion module provides 4 programmable outputs to the EVO192 systems. The PGM4 automatically detects the system to which it is connected to and adjusts its internal communication parameters accordingly

The EVO192 can also be configured with a Dialer for alarm transmission purposes. See Intertek reports 100803903MIN-011 and 100803903MIN-012 for the Dialer specifications and test data.

The EVO192 may be configured with an RTX3 Expansion module. This is a 2-way, 32 zone wireless expansion module which can support wireless hardware such as motion detectors, remote controls, etc. The RTX3 is powered from, and communicates to the EVO192 through a wired connection.

The TM50 Touch interface Module may also be used with the EVO192. For evaluation to EN 50131-3, see report 100803903MIN-002

**Revision 2013-February-14 (G100803903MIN):**

Added EVO 192 power supply (see Intertek report #100798960MIN-001) and expansion module board model PGM4. Updated clause 8.11. Added additional table 11.14.

**Revision 01-March-2013 (G101035025MIN):**

Added Dialer to report, added reference to Dialer reports 100803903MIN-011 and 100803903MIN-012. Updated clause 8.6, 11.14 and Table 11.14.

Added RTX3 to report. Added reference to report 100546807MIN-002 to Table 11.8.2, 11.8.3 and 11.14.

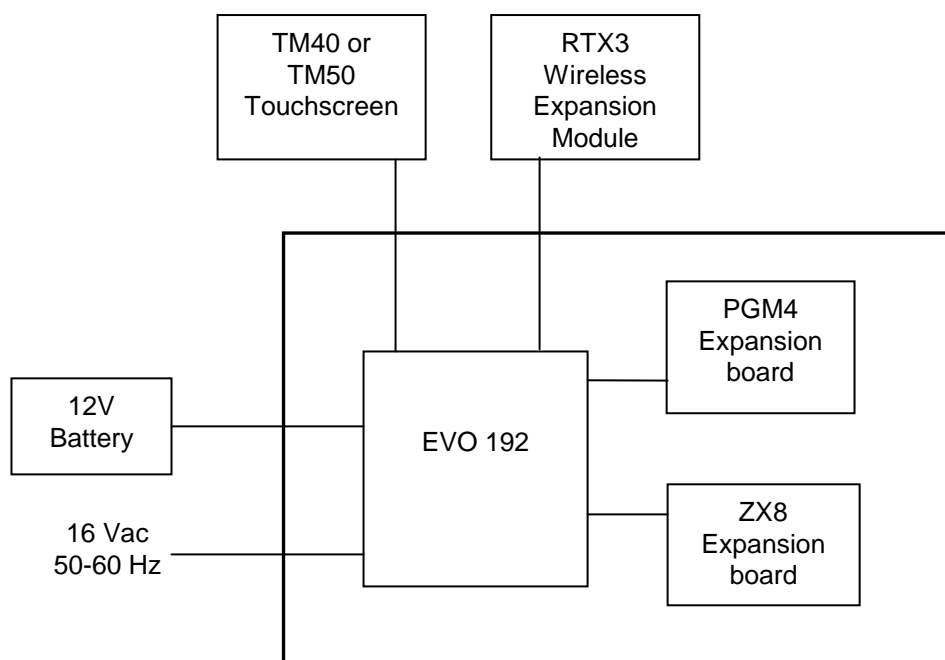
Added test data to table 11.8.2 and 11.8.3. Added photos of RTX3. Updated clause 6, 7.1, 9.2, 11. Added TM50 to report

Revision 17-April-2013

Added reference to Dialer reports 100803903MIN-011 to clause 11.1.4

Revision 18-April-2013

Added note "(See ATS report #100803903MIN-011 and 100803903MIN-012)" to Tables 11.3, 11.4, 11.4.1, 11.4.2, 11.4.3, 11.6, 11.12

**Block Diagram:**



EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
<b>4</b>	<b>Equipment Attributes</b>		
<b>4.1</b>	<b>General</b>		
	Compliance with this standard shall be demonstrated by assessment of clause 4 through clause 10 and the application of the tests of clause 11	See clause 4 through clause 10 and the application of the tests of clause 11 for compliance	N/A
<b>4.2</b>	<b>Functionality</b>		
	Functions additional to the mandatory functions specified in this standard may be included in the I&HAS providing they do not influence the correct operation of the mandatory functions.	Other functions do not influence the operation.	P
	Where provided, these additional functions shall not affect compliance with the requirements of this standard, except as permitted by EN 50131-1:2006, 8.3.13	Other functions do not affect compliance.	P
	It is permitted for the CIE to include functionality for special purposes that would render the I&HAS non-compliance with EN 50131-1. The manufacturer's documentation shall include a warning to this effect.	No such functionality found	N/A
<b>5</b>	<b>CIE construction</b>		
	Provision shall be made to allow adequate fixing of the housing to the mounting surface.		P
	Use of equipment not part of the I&HAS may be used to carry out ACE functions (example: computer, PDA) if the conditions specified in Annex C are met.	Such equipment was not provided.	N/A
<b>6</b>	<b>Security grade</b>		
	The CIE and ACE shall be declared to comply with one of the four security grades and shall meet all the requirements of that grade	Security Grade 3 was declared. RTX3 Security Grade 2 – Entire I&HAS system is Security grade 2 when configured with the RTX3	P
<b>7</b>	<b>Environmental performance</b>		
<b>7.1</b>	<b>Requirements</b>		
	CIE and ACE shall be suitable for use in at least one of the environmental classes defined in EN 50131-1.	The following components were classified as environmental class II: EVO192, ZX8, TM40, RTX3	Pass

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	When the requirements of the four environmental classes are inadequate, due to the extreme conditions experienced in certain geographic locations, special national conditions are given in EN 50131-1:2006, Annex A	No national conditions were evaluated	N/A
<b>7.2</b>	<b>Environmental and EMC tests</b>		
	EN 50130-4 specifies EMC susceptibility tests relevant to I&HAS components. The operating conditions for these tests are specified in Table 32 of this standard.	See the following Nemko reports: 90256-1TRFEMC, 90256-2TRFEMC, 88429-6TRFEMC	P
	EN 50130-5 describes the environmental test methods relevant to I&HAS components. The tests applicable are specified in Table 32 of this standard.		Pass

<b>8</b>	<b>Functional requirements</b>		
<b>8.1</b>	<b>Inputs</b>		
	Depending on the grade of the CIE and ACE, means shall be provided to receive signals or messages from detectors, hold-up trigger devices and information from user input devices as specified in the following subclauses.	Provided	P
8.1.1	Intruder detection		
	The CIE shall provide the means to receive signals or messages from intruder detectors.	EVO192 Control Panel receives signals from the Intrusion detectors. Intrusion detectors were not provided. Validation is pending.	-
8.1.2	Hold-up device		
	When a CIE provides a hold-up facilities, means shall be provided to receive signals or messages from hold-up devices.	Hold-up can be activated from the EVO192 Control Panel.	P
8.1.3	Tamper		
	The CIE shall provide the means to receive tamper signals or messages		P
8.1.4	Fault		
	Dependant on the grade, CIE shall include means to recognize the fault conditions as specified in EN 50131-1:2006, Table 1 and in addition those faults shown in Table 1	See also EN 50131-1, clause 8.1.4	P
8.1.5	User input		

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The CIE shall provide the means to receive information from user input devices (example: a keypad or switch)	TM40 Touch Screen provided	P
8.1.6	Masking		
	The CIE shall provide the means to receive masking signals or messages, according to grade.	Motion detectors were not evaluated. Masking is required for security grade 3.	-
	The CIE shall process masking signals or messages when the system is set and optionally when unset.	Motion detectors were not evaluated. Masking is required for security grade 3.	-
8.1.7	Movement detector range reduction		
	The CIE shall provide the means used to receive reduction of range signals or messages, according to grade.	Motion detectors were not evaluated. Masking is required for security grade 3.	-
8.1.8	Non-I&HAS inputs		
	When a CIE receives signals or messages or other information not necessary to meet the requirements of this standard (example: monitoring of non-I&HAS equipment), this shall not affect the ability of the CIE to meet the requirements of this standard.	No Non-I&HAS equipment evaluated.	N/A
8.2	<b>Outputs</b>		
	The CIE may need to provide output signals or messages to interface with other I&HAS components, as required by relevant component standards. The installation documentation shall identify which configurations are available.	Installation manual provided for each component	P
	Output signals or messages may additionally be provided to interface to equipment outside of the I&HAS (example: lighting)	No such output signals found	N/A
8.3	<b>Operation</b>		
	The CIE shall provide means necessary to enable authorized users the functions of the CIE. Access to these functions shall be restricted by access levels and corresponding authorizations according to 8.3.1 and 8.3.2 (example: by using a keypad or lock)	Touch Screen provided	P
8.3.1	Access levels		P

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Access to the functions of a CIE shall be restricted according to the requirements of EN 50131-1:2006, Table 2 the access levels necessary to operate those functions shall be specified by the manufacturer. Access levels for any non-security functions shall be specified in the manufacturer's documentation.	Access meets Table 2 in EN 50131-1.	P
	Access at level 3 shall be authorized by access level 2 such that: a) access remains authorized until manually removed. or b) access requires authorization for each occasion it is used.	See Section 8.3.1 in ITS report 100484764MIN-011.	P
	Access at level 4 shall be authorized by access level 2 and 3 for each occasion it is used.	Level 4 can only be completed at the Paradox facility. Cannot access level 4 on site	N/A
	If level 3 access is granted without level 2 authorization, as permitted by EN 50131-1:2006, 8.3.1, the internal warning device shall be time limited, either to a fixed time quoted by the manufacturer or until silenced by the level 3 user.	See Section 8.3.1 in ITS report 100484764MIN-011. The siren sounds twice when access to level 3 is gained	P
8.3.2	Authorization		
	Access to the functions of a CIE (as defined) at levels 2, 3 and 4 shall be restricted as required by EN 50131-1:2006, 8.3.2. Authorization is not required for access at level 1.	See also ITS report 100484764MIN-011	P
	Authorization shall be validated by the CIE		P
8.3.2.1	Use of a mechanical key		
	Where mechanical keys are used, the manufacturer shall supply sufficient information to establish the number of combinations available	Mechanical keys were not found.	N/A
8.3.2.2	Use of logical keys		
	Where logical keys are used, the manufacturer shall supply sufficient information to establish the number of combinations available.	PIN codes are used	P
	Additionally the following apply to specific types of logical key. This does not restrict use of other types.		P
8.3.2.2.1	Use of PIN codes		

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Where PIN codes are used, the number of combinations not available shall be identified by the manufacturer and shall be disallowed from calculation of codes available	Provided in documentation	P
	Means shall be provided to prevent reading of authorization codes	An asterisk, *, is shown on the display	P
	Entry of a code shall be completed within 60s. If the entry code is not completed in that time, it shall be treated as invalid in the context of 8.3.2.4		P
8.3.2.2.2	Digital keys		
	Where a user can complete the setting or unsetting procedure from a location more than 1 m from the CIE or ACE, digital keys used to I&HAS of grades 3 and 4 shall include means to prevent acceptance of keys copied from intercepted data (example: rolling codes)	No digital keys	N/A
	Where the operation can be performed other than at the point of exit from the premises, means shall be provided to make the “prevention of setting” and “completion of setting” indications available to the user (example: on the key)	No digital keys	N/A
	Self-powered digital keys shall monitor device charge as required by EN 50131-6:2008, 4.2.2 and report battery low condition to the CIE (via ACE where applicable) each time the device is used for setting or unsetting.	No digital keys	N/A
	This report shall be made on each event for a minimum of 25 such events, over a period not exceeding 1 month and shall result in an indication and event log entry (including the identity of the relevant user) each time the condition is reported.	No digital keys	N/A
	When a low battery condition is identified at the time of setting, the I&HAS shall not set until the low battery indication has been manually acknowledged and the CIE or ACE. This acknowledgement shall be logged at the grade 2 and above.	No digital keys	N/A
8.3.2.2.3	Biometric keys		
	Where biometric means are used for authorization, the recognition coding structure shall provide a minimum number of combinations as shown in Table 2. Each recognition information presented to the system shall be compared with this structure. The false acceptance and false rejection rates shall not exceed the values shown in table 2.	No biometric keys	N/A

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	If the FAR and FFR are adjustable, the means of adjustment shall permit identification of the parameters of ensure compliance with the above grades. This information shall be included in the manufacturer's documentation.	No biometric keys	N/A
8.3.2.3	Use of methods of authorization in combination		
	Two or more devices or technologies may be used by one or more individuals to authorize level 2 or level 3 access to a CIE (example: use of PIN codes plus digital key)	Two or more methods were not used.	N/A
	The combination of operations shall be verified by the CIE	Two or more methods were not used.	N/A
	The maximum time between completion of one operation and the initiation of the next shall be restricted by grade according to table 3	Two or more methods were not used.	N/A
8.3.2.4	Detection of repeated invalid authorization attempts		
	Depending on the grade, when a CIE uses logical keys to restrict access or when the CIE has the means to identify individual mechanical keys, means shall be provided to detect and record repeated attempts to gain access not recognized as valid by the CIE, as specified in table 4	The keypad is disables after 5 invalid entries	P
	When required by table 4, the user input device(s) at which the invalid attempts are made shall be disabled for a minimum of 90s. Other user input devices may also be disabled.	Disabled for 15 minutes.	P
	Tamper shall not be activated when less than 3 invalid attempts are detected.	5 invalid attempts are needed	P
	The CIE may treat repeated use of the same invalid logical key as a single attempt.	Each invalid attempt is registered as an invalid entry	P
8.3.3	Setting procedures		
	CIE shall provide means for a user to set the I&HAS or part thereof in accordance with EN 50131-1:2006, 8.3.3 and 8.3.4	PIN code is used	P
	The CIE may provide means to set automatically at pre-determined times. When means are provided to set at pre-determined periods, the CIE shall generate at least one indication before commencing setting. Details of the pre-setting indication(s) shall be included in manufacturer's documentation.	A means to set automatically at pre-determined times were not found.	N/A

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	If setting at grade 1 is implemented as permitted by EN50131-1:2006, 8.3.4, means shall be provided to cancel the setting procedure before it is completed. This shall not permit cancelling the setting procedure if started by other means.	Cannot set at grade 1	N/A
8.3.3.1	Prevention of setting and overriding of prevention of setting		
	The CIE shall provide means to prevent the setting of the system in accordance with EN 50131-1:2006, 8.3.5 and may provide means to override such prevention of setting in accordance with EN 50131-1:2006, 8.3.6	See also ITS report 100484764MIN-011	P
	Where the prevention of setting condition arises after the exit procedure has commenced, there shall be means to warn the user that setting has been prevented (example: audible alert indication)	The TM40 indicates Armed Stay and not Armed	P
	When setting is time dependant, means may be provided to override conditions preventing setting automatically.	Provided	P
	The overriding of prevention of setting conditions shall be logged as specified in 8.10	All events are in the event log.	P
8.3.3.2	Exit route facility		
	Provision of an exit route facility is optional	An exit delay period is given to allow exit at any door.	P
	When an exit route facility is provided, the CIE shall be provided with the means to select the defined alarm point(s) to be included in the exit route facility.	No specific exit route required.	N/A
	The CIE may provide the means to indicate that the exit procedure has commenced, in accordance with EN 50131-1:2006 8.3.4 and Table 9	TM40 indicates exit delay and beeps.	P
8.3.3.3	Failure to set		
	Means shall be provided to indicate and/or notify when the CIE fails to set, following the initiation of setting procedure.	A situation where the CIE fails to set was not found.	N/A
8.3.3.4	Set state		
	The CIE shall provide time limited means to indicate that the system has set (in accordance with EN 50131-1:2006, 8.3.7)	TM40 indicates that the system is armed indefinitely.	P
	Means shall be provided to comply with at least one of the requirements specified in EN 50131-1:2006, 8.3.7 whilst the I&HAS is in the set state.	See also ITS report 100484764MIN-011	P
8.3.4	Unsetting procedure		

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The CIE shall provide means for a user to unset the I&HAS or part thereof in accordance with EN 50131-1:2006, 8.3.3 and 8.3.8	Can unset using the TM40 touchscreen	P
	The CIE may provide means to unset at pre-determined times. When this is done, the automatic unsetting action shall not cancel an existing requirements of EN 50131-1:2006, 8.3.8	Automatic unsetting at pre-determined times was not found.	N/A
	The procedure for unsetting with associated indications, including the optional use of an entry route, shall be in accordance with the requirements of EN 50131-1:2006, 8.3.8	See also ITS report 100484764MIN-011	P
8.3.5	Restore function		
	The CIE shall provide means to restore conditions as defined in EN 50131-1:2006, 8.3.9	See also ITS report 100484764MIN-011	P
8.3.6	Inhibit function		
	Inhibit functions may be applied to individual alarm, tamper, fault or hold-up points, as defined in EN 50131-1:2006, 8.3.10	No inhibit functions found	N/A
	When the CIE is next set or unset, inhibit conditions shall be cancelled		N/A
	Where inhibit functions are provided, the manufacturer shall include details in documentation.		N/A
8.3.6.1	Automatic inhibit function		
	Inhibit may be performed automatically, except for hold-up functions.	No inhibit functions found	N/A
	Where this facility is provided, the manufacturer's documentation shall specify the number of occurrences of each type of event in a given set or unset period before the inhibit is applied.		N/A
8.3.7	Isolate operation		
	Isolate functions may be applied to individual alarm, tamper, fault or hold-up points, access to these means shall be restricted according to EN 50131-1:2006, 8.3.11	No isolate functions found	N/A
8.3.8	Verification of I&HAS functions		
	The CIE shall include means for a user, at access level 2, to carry out a function test of intrusion detectors and hold-up device(s), provided such tests do not render the device inoperable. Additionally, the CIE may include means to test WD or other components.	A Walk Test is provided	P



EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Tamper functionality is not the object of this test: the CIE shall continue to process tamper signals or messages as described in EN 50131-1:2006, 8.4.3 during such a test	A Walk Test was not conducted since intrusion detectors and motion detectors were not provided. Unable to determine tamper functionality.	-
	At grade 4, the CIE shall make provision for remote initiation of self-tests of system components, as required by the relevant component standards.	Security grade 3	N/A
8.3.9	Alarm point soak test mode		
	The CIE may include a soak test function. When this is provided, alarm signals or messages from one or more alarm points under test shall continue to be recorded in the event log.	No soak function found	N/A
	The manufacturer's documentation shall specify the criteria for automatic removal of the soak test attribute and the time period for which it is applied (if not programmable). Access to initiate and manually restore the soak test function shall be restricted to access level 3 in all grades.		N/A
	Indication that components are being soak tested shall be available to users at access levels 2 and 3 and the condition shall be indicated to a user when setting the system.		N/A
8.3.10	Other functions		
	In addition to normal functions described in this specification, the CIE may provide additional functions. A list shall be provided in the manufacturer's documentation.	All functions described in documentation	P
8.4	<b>Processing</b>		
	The CIE shall include the means necessary to provide input signals or messages and generate the output signals or messages indications and notifications as required by EN 50131-1:2006, 8.4	See ITS report 100484764MIN-011 Appendix A Table 7	P
8.4.1	Processing of input signals or messages		
	Intruder, hold-up, tamper and fault signals or messages shall be processed to provide the notifications required by EN 50131-1:2006, 8.4 and Table 7	See ITS report 100484764MIN-011 Appendix A Table 7	P
	Dependent upon grade, masking and reduction of range of movement detector events shall similarly be processed according to EN 50131-1:2006, 8.4.3 or 8.4.4 and Table 7. The manufacturer's instructions shall state how masking and reduction of range signals or messages are processed.	Masking is required for security grade 3. Reduction of range is optional for security grade 3. Masking was not evaluated since motion detectors were not provided.	-

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
8.4.1.1	Alarm inputs		
	<p>Intrusion alarm signals or messages shall be processed:</p> <p>a) individually to generate one or more intruder alarm conditions or</p> <p>b) an alarm condition may be generated by the logical combination of signals or messages within a defined time window from the same alarm point or from logically grouped alarm points</p>	Messages generated individually	P
8.4.1.2	Priorities		
	The CIE default priority of signal or message processing shall be described in the manufacturer's documentation. In the event of multiple signals or messages being present simultaneously, all these signals or messages shall be processed and at least one of the highest priority signals or messages shall be notified as required by 8.6.	Messages generated chronologically.	N/A
	NOTE Multiple signals or messages from a Single detector may be prioritised by that detector in accordance with the recommendation of the detector standard.	Messages generated chronologically.	N/A
8.4.2	Processing of user inputs		
	When facilities are provided for a user to input commands other than at the CIE or ACE, processing shall verify that the selected functions are authorized according to 8.3.2.	Only CIE and ACE found	N/A
8.4.3	Monitoring of CIE processing		
	In CIE with programme controlled data processing, means shall be provided to monitor the processing function and provide an appropriate signal, in accordance with Table 5.	See also clause 11.7.9	P
	A processing monitoring function shall be provided (EXAMPLE: Watchdog), which shall detect a complete failure of the processing function within 10 s and attempt to restart the processing.	Detects within 5 seconds	P
	If successful, the CIE shall resume operation in its previous operating mode (EXAMPLE: set, or unset) and this event shall be logged and indicated.		P
	<p>A dedicated output signal shall be provided which shall change state within 30 s of the processing failure being detected, unless the CIE has already resumed its previous operating mode after restart.</p> <p>Once activated, the output shall remain until the CIE has resumed its previous operating mode.</p>		P

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Clause	Requirement – Test	Result - Remark	Verdict
	NOTE If cannot restart, I&HAS remains inactive.	System restarts	P
<b>8.5</b>	<b>Indication</b>		
8.5.1	General		
	Indications shall be provided and displayed in accordance with the requirements of EN 50131-1: 2006, 8.5.1, 8.5.2 and 8.5.3.	See ITS report 100484764MIN-011 Appendix A Table 8.	P
	The manufacturer shall document how a level 2, 3 or 4 user can cancel displayed information which is not permitted to be displayed at access level 1.	Provided in documentation	P
	NOTE This may be performed by an automatic timed operation.	Not found.	P
	The indications shown in Table 6 are additional to those shown in EN 50131-1:2006, Table 8.	See ITS report 100484764MIN-011 Appendix A Table 8.	P
	When indicators share common means of annunciation, a pending indication shall be provided when further information is available for display (EXAMPLE: a liquid crystal display).	TM40 provide a down and up arrow for pending indications	P
	Means shall be provided to control an alert indication for users at access level 1 to indicate that information is available to other access levels (EXAMPLE: audible indicator or flashing visual indicator).	Provided	P
	When an event activates more than one indication, at least one indication shall remain until the cause is restored.	Provided	P
	NOTE 1 The pending and alert indications are described in EN 50131-1.	Informational	-
	NOTE 2 If a mimic panel is used, the indications may be available with no restriction to provide a tool for security management.  In this case, according with the specific need of the installation, general access to the mimic panel should be restricted  (EXAMPLE: inside security room, inside key locked cabinet).	Informational	-
	NOTE 3 Display of information whilst in a test mode is NOT considered to be an indication in the context of EN 50131-1:2006, Tables 8 and 9.	Informational	-

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Clause	Requirement – Test	Result - Remark	Verdict
	Masking and range reduction shall be indicated in the same way as intrusion or fault conditions, depending upon how they are processed. Depending upon how these conditions are reported by the detector, it may not be possible to differentiate between them at the CIE (see detector standards).	Masking and range reduction were not evaluated since Motion Detectors were not provided. Masking is required for security grade 3. Range reduction is optional in security grade 3.	-
8.5.1.1	Alarm, tamper and fault indications		
	Alarm, tamper and fault indications shall require to be cancelled (acknowledgement) by a user according to the requirements of EN 50131-1:2006, 8.5.3.	See also ITS report 100484764MIN-011	P
8.5.1.2	Other conditions		
	Conditions other than alarm, tamper and fault shall be indicated during setting and unsetting and when required by a user.	Provided	P
8.5.2	Visual Indicators		
	Where colours are used to differentiate the alarms, then the requirements of EN 60073 shall apply.	Colours not used	N/A
8.5.3	Priority of indications		
	When indicators share common means of annunciation, indications shall be prioritised in accordance with the manufacturer's specifications.	Messages generated chronologically.	N/A
8.6	<b>Notification outputs</b>		
	The CIE shall provide one or more output signals or messages to fulfill the requirements described in EN 50131-1:2006, 8.6. The CIE documentation shall state which option(s) can be fulfilled.	If configured with the Dialer option, see Dialer reports 100803903MIN-011 and 100803903MIN-012  Self powered warning devices used and meet the requirements.	P
	Additionally, if means is provided to gain level 3 access without level 2 authorisation (as permitted by EN 50131-1:2006, 8.3.1), means shall be provided to remotely notify "level 3 access" at security grades 2 and 3.	Siren squawks twice when access to level 3 is obtained	P
	Where the CIE provides output signals or messages for SPT and WDs, means may be provided to delay or suppress the operation of WDs as described in EN 50131-1:2006, 8.6.	Silent hold-up will not activate the warning devices	P

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Clause	Requirement – Test	Result - Remark	Verdict
	Means shall be provided to delay notification of an EPS fault for a maximum of 1 h. This notification shall be cancelled if the EPS fault has been restored within the delay period.	Provided	P
8.6.1	Other notification		
	The CIE may provide other notification output signals or messages. Operation of such shall not affect any requirements of this standard.	Other functions do not affect any requirements of this standard	P
<b>8.7</b>	<b>Tamper security (detection/protection)</b>		
	All connections to the CIE shall be contained within the CIE housing(s) and all connections to the ACE shall be contained within the ACE housing(s). The CIE and ACE housing(s) shall be provided with the means to prevent access to internal elements to minimize the risk of tampering, according to the grade of the CIE.		P
	For the purposes of tamper protection and detection requirements, ACE are categorised as:		—
	Type A: Access to internal elements resulting from damage to the housing could not enable the status of any part of the I&HAS to be changed or prevent the initiation of mandatory notification (EXAMPLE: potted device);	Not type A	N/A
	Type B: Access to internal elements resulting from damage to the housing could enable the status of any part of the I&HAS to be changed or prevent the initiation of mandatory notification (EXAMPLE: ACE includes connections for detectors).	All components are type B	P
8.7.1	Tamper protection		
	The construction of the CIE and ACE housing(s) shall meet the tamper protection requirements of EN 50131-1 and the impact requirements for the appropriate grade according to Table 7. IK impact ratings are detailed in EN 62262.	Appendix A Section 11.8.2	P
	This requirement permits the housing to be damaged, provided that a tamper alarm shall be generated before unauthorised access to internal elements is possible (except for Type A devices).	Tamper alarm is generated before access to internal elements	P
	Where the CIE is distributed within the housing of other components of the I&HAS, then the tamper protection of such housings shall comply with this standard.	EVO192 Control Panel contains tamper protection	P
	Means of access to internal elements of a CIE or ACE shall be robust and mechanically secured.	EVO192 Control Panel is key secured shut. TM40 requires a screw driver.	P

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Clause	Requirement – Test	Result - Remark	Verdict
	In grades 1 and 2 this requirement does not include indicators or operating controls (EXAMPLE: pushbuttons, keypads, LCD or graphic screens); in grades 3 and 4 such indicators and operating controls are included, where these can be accessed by a level 1 user.	Provided	P
8.7.2	Tamper detection		
	Whether the CIE/ACE is self-contained within its own housing(s) or is distributed within the housing(s) of other components of the I&HAS, a tamper signal or message shall be generated according to the requirements specified in Table 8 before access can be gained to override the detection.		P
8.7.2.1	Access to the inside of housing		
	Opening the CIE/ACE Type B housing by normal means shall generate a tamper signal or message.	See Appendix A Section 11.8.3 for test results	P
	The housing shall not permit the introduction of tools of dimensions as specified in Table 9 to defeat the tamper detection before it has operated.		P
	This requirement is not applicable to Type A devices.	Not type A	N/A
	In grades 1 and 2 this requirement does not include insertion of the tool via indicators or operating controls (EXAMPLES: push-buttons, keypads, LCD or graphic screens) or other apertures; in grades 3 and 4 such indicators, operating controls and any other apertures accessible to a level 1 user are included.	See Appendix A Section 11.8.3 for test results Security grade 3	P
8.7.2.2	Removal from mounting		
	Attempts to remove the CIE/ACE Type B from its mounting surface for a distance greater than that defined in Table 10 shall generate a tamper signal or message according to Table 8.	See Appendix A Section 11.8.4 for test results	P
	It should not be possible to defeat the removal from mounting detection by sliding a 25 x 1 x > 300 mm blade or by use of pliers (of thickness 5 mm and reach 150 mm) between the mounting surface and the CIE/ACE.		P
8.7.2.3	Penetration of the housing		

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Clause	Requirement – Test	Result - Remark	Verdict
	When mounted according to the manufacturer's instructions, it shall not be possible to penetrate the housing of the CIE/ACF Type B through any of its accessible faces with a metal tool creating a hole of 4 mm or greater diameter without generating a tamper signal or message.	EVO192, ZX8, and TM40 are not outside the secured premises.	N/A
8.7.3	Monitoring of substitution		
	Grade 4 CIE shall provide means to monitor substitution of I&HAS components as required by EN 50131-1: 2006, 8.7.3 and 8.7.4.	Not grade 4	N/A
8.8	<b>Interconnections</b>		
	The CIE shall include means to verify that the interconnection function is operating normally as described in EN 50131-1: 2006, 8.8 (including subclauses).	See also ITS report 100484764MIN-011	P
	The CIE shall include physical and logical interface for interconnections. The manufacturer's documentation shall specify the type of the interconnection supported, as shown in Annex A.	Wire free connection used	N/A
8.9	<b>Timing</b>		
	Signals and messages shall be processed as specified in EN 50131-1: 2006, 8.9 (including subclauses).	See ITS report 100484764MIN-011 for test results.	P
	Timings shall be applied to masking and reduction of range conditions according to whether they are processed as fault or intrusion events.	Motion Detectors were not provided. Masking is required for security grade 3 and could not be evaluated. Reduction of range optional for security grade 3. Not evaluated	-
8.10	<b>Event Recording</b>		
	Event recording shall be in accordance with EN 50131-1: 2006, 8.10.	See ITS report 100484764MIN-011 for test results.	P
	The CIE shall include means to record the events as specified in Table 22 of EN 50131-1: 2006 and, in addition, those conditions shown in Table 11.	See ITS report 100484764MIN-011 for test results.	P
8.10.1	Event recording at the CIE		
	When events are recorded at the CIE each new event shall be recorded during the processing time permitted by EN 50131-1: 2006, 8.9.2.		P

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Recording of the events listed as mandatory in Table 11 and in EN 50131-1:2006, Table 22 shall not be affected, nor overwritten by the recording of events listed as "optional" (EXAMPLE: separate event logs) where this will reduce the number of recorded events below the minimum required by EN 50131-1: 2006, Table 21.	Optional events will not reduce the number of recorded events below the minimum required.	P
	Logging of additional events, outside the scope of EN 50131-1 is permitted, but shall not over-ride events specified by EN 50131-1:2006, Table 22 where this will reduce the number of recorded events below the minimum required by EN 50131-1:2006, Table 21.	Other events are logged and do not reduce the number of recorded events required.	P
	The time recorded with a logged event shall include, as a minimum, hours and minutes, the date shall include as a minimum the day and month.	Month, day, hours and minutes	P
	Where the storage time requirement of EN 50131-1:2006, Table 21 is met by the provision of a memory support battery, the CIE manufacturer shall specify the interval between battery changes.	No memory support battery	N/A
	In CIE for grades 3 and 4, a facility shall be provided to permanently record the event log.	User manual has a statement on permanent record.	P
8.10.2	Event recording at the ARC or other remote location		
	When event recording is provided at the ARC or other remote location, the CIE shall provide means to indicate that the transmission of events to the remote location has been unsuccessful.	See ATS report #100803903MIN-012	P-
	When events cannot be transferred, in security grade 1, a fault condition shall be generated. In security grades 2, 3 and 4, events that have failed to be transmitted shall be transferred to a suitable I&HAS component for storage until transfer is possible. The requirements for this temporary memory shall be in accordance with the requirements of EN 50131-1 :2006, Table 21.	See ATS report #100803903MIN-012	P
8.11	<b>Power Supply</b>		
	The CIE may be powered by an integrated PS or by a separate PS. In either case the requirements of EN 50131-1: 2006, 9.2, EN 50131-6 and this standard shall be complied with.	(See EVO power supply board report# 100798960MIN-001)	P
	The PS shall be capable of supporting the CIE in all conditions including when recharging storage devices within the required periods.	(See EVO power supply board report# 100798960MIN-001)	P



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Clause	Requirement – Test	Result - Remark	Verdict
	The manufacturer's documentation shall define the current consumption of the CIE and of the ACE.	(See EVO power supply board report# 100798960MIN-001)	P
9	Product documentation		
9.1	<b>Installation and maintenance</b>		
	Information specified by EN 50131-1 :2006, 14.2 shall be provided, along with the following:	See ITS report 100484764MIN-011	P
	a) operating temperature and humidity range;	Provided in documentation	P
	b) weights and dimensions;	Provided in documentation	P
	c) fixing details;	Provided in documentation	P
	d) installation, commissioning and maintenance instructions, including terminal identifications;	Provided in documentation	P
	e) type of interconnections (refer to 8.8);	Provided in documentation	P
	f) details of methods of setting and unsetting possible (see 11.7.1 to 11.7.3 and Tables 23 to 26);	Provided in documentation	P
	g) where there are serviceable parts (EXAMPLE: fuses) their type and value;	No serviceable parts found	N/A
	h) power supply requirement if no integrated PS;	Provided	P
	i) where PS is integrated, the information required by EN 50131-6:2008, Clause 6;	No integrated PS	N/A
	j) the maximum number of each type of ACE and expansion device;	Provided in documentation	P
	k) the current consumption of the CIE and each type of ACE and expansion device, with and without an alarm condition;	Provided in documentation	P
	l) the maximum current rating of each electrical output;	PGM Programmable output ratings provided in documentation	P
	m) programmable functions provided;	Provided in documentation	P
	n) how indications are made inaccessible to level 1 users when level 2, 3 or 4 user is no longer accessing the information (see 8.5.1);	Provided in documentation	P
	o) masking/reduction of range signals/messages processed as "fault" or "masking" events (see 8.4.1, 8.5.1 and Table 11);	Movement detectors not evalutated	-
	p) prioritisation of signal and message processing and indications (see 8.4.1.2, 8.5.3);	Provided in documentation	P
	q) the minimum number of variations of PIN codes, logical keys, biometric keys and/or mechanical keys for each user (see 8.3);	The number of variations of PIN codes provided in the installation guide.	P

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Clause	Requirement – Test	Result - Remark	Verdict
	r) method of time-limiting internal WD for level 3 access without level 2 authorisation (see 8.3.1);	The siren sounds twice when access to level 3 is gained	P
	s) the number and details of disallowed PIN codes (see 8.3.2.2.1);	Provided in documentation	P
	t) details of any biometric authorization methods used (see 8.3.2.2.3);	No biometric authorization methods	N/A
	u) the method used to determine the number of combinations of PIN codes, logical keys, biometric keys and/or mechanical keys (see 11.6);	Provided in documentation	P
	v) number of invalid code entries before user interface is disabled (see 8.3.2.4);	Provided in documentation	P
	w) details of means for temporary authorization for user access (see 8.3.2);	No such temporary authorization found.	N/A
	x) if automatic setting at pre-determined times provided, details of pre-setting indication and any automatic over-ride of prevention of set (see 8.3.3,8.3.3.1);	Automatic setting at pre-determined times was not found.	N/A
	y) details of conditions provided for the set state (see 8.3.3.4);	Provided in documentation	P
	z) notification output signals or messages provided (see 8.6);	Provided in documentation	P
	aa) other output configurations to interface with I&HAS components (see 8.2);	Provided in documentation	P
	bb) criteria for automatic removal of "soak test" attribute (see 8.3.9);	Soak test was not found.	N/A
	cc) number of events resulting in automatic inhibit (see 8.3.6.1);	No inhibit found	N/A
	dd) if ACE is Type A or Type B (see 8.7) and whether portable or moveable (see 11.14);	ACE is type C	N/A
	ee) component data for non-volatile memory components (see Table 30, step 6);	EEPROM memory provided	P
	ff) life of memory support battery (see 8.10.1);	Provided in documentation	P
	gg) optional functions provided (see 4.1);	Provided in documentation	P
	hh) additional functions provided (see 4.2, 8.1.8);	Provided in documentation	P
	ii) access levels required to access such additional functions provided;		P
	jj) details of any programmable facility that would render an I&HAS non-compliant with EN 50131-1:2006, 8.3.13 or compliant at a lower security grade, with instruction on consequent removal of compliance labeling (see 4.2 and 8.3.10).	No such condition	N/A

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Clause	Requirement – Test	Result - Remark	Verdict
<b>9.2</b>	<b>Operating Instructions</b>		
	The following information shall be provided:		P
	a) operating instructions for all security and non security functions available to the user;	Provided in documentation RTX3 manual: RTX3-EI10, dated 05/2010	P
	b) standard(s) to which compliance is claimed for product;	Provided in documentation	P
	c) security grade to which the CIE and ACE comply;	Provided in documentation	P
	d) environmental class;	Provided in documentation	P
	e) the minimum number of variations of logical and/or mechanical keys for each user;	Provided in documentation	P
	f) the number and details of disallowed codes;	Provided in documentation	P
	g) user programmable functions provided;	Provided in documentation	P
	h) where there are user serviceable parts (EXAMPLE: fuses), their type and value.	User serviceable parts were not found.	N/A
<b>10</b>	<b>Marking and labeling</b>		
	The CIE and ACE shall be marked as required by EN 50131-1, along with other information required by EU regulatory Directives.	See also ITS Report 100484764MIN-011	P
<b>11</b>	<b>Tests</b>		
	Where products are to be tested for compliance with this standard, the requirements of Clause 11 shall be applied.	Informational	N/A
	Security grades 1 to 4 shall be in accordance with the descriptions in EN 50131-1.	Security grade 3	P
	In the event of an additional component being developed for use with equipment already tested or of that equipment being revised, a revised test plan should be agreed with the test house.	RTX3 originally tested in reports 100546807MIN-001 and 100546807MIN-002	P
11.1	Test Conditions		
11.1.1	Laboratory conditions and tolerance		
	Testing conditions shall be in accordance with EN 60068-1 :1994,5.3.1, as follows:		—
	- temperature: 15°C to 35 °C - relative humidity: 25 % to 75 % - air pressure: 86 kPa to 106 kPa		P
11.1.2	Mounting		

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Clause	Requirement – Test	Result - Remark	Verdict
	Except where shown otherwise, the CIE/ACE shall be mounted in accordance with the manufacturer's installation instructions. For environmental testing, the EUT shall be mounted in its correct operational orientation. The material used for the mounting surface shall not 'influence the test results.	Mounted as intended	P
	Any additional equipment necessary to carry out the tests (EXAMPLE: simulation of detectors or warning devices) shall be supplied by the manufacturer by agreement with the test house.	No additional equipment needed	N/A
	All input signals/messages (EXAMPLE: directly wired detector inputs or bus line) shall be correctly terminated according to the manufacturer's instructions.	All components wired according to the manufacturer's instructions.	P
11.1.3	CIE test configuration		
	For functional testing, a CIE with representative configuration shall be supplied, as follows:		—
	a) the CIE shall include at least one of each type of ACE and 10 % (but at least one) of each type of expansion device or networked CIE component for which the manufacturer requires the testing;	System included at least one of each component. No expansion devices are used in this system.	P
	b) the manufacturer shall provide equipment to the test house with alarm point inputs connected as defined below and programmed to meet the requirements of this standard:		—
	- each peripheral component capable of accepting inputs from alarm points shall have 10 % (but at least 2) of each type of input connected to alarm points;	No such components provided.	N/A
	- for wire-free equipment, at least 8 wire-free alarm points shall be tested;	Wire-free equipment was not evaluated	N/A
	- if either of the above determinations result in a number greater than the capacity of the device, all inputs shall be connected;	Not greater than capacity	N/A
	- where several "bus" inputs are provided or a mix of wired and wire-free inputs may be connected, the alarm points shall be distributed to check all buses and all types of interconnections;	No such inputs	N/A
	- there may be several types of peripheral system components capable of accepting input connections. In this case, all such types of peripheral shall be checked;	No such components	N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	c) the remainder of the I&HAS configuration may be simulated (EXAMPLE: switches to simulate detectors, LEDs to simulate WDs);	No simulated configuration used	N/A
	d) the event log may be pre-filled by the manufacturer before the test.	Event log filled during testing	N/A
	The EPS and any APS shall be connected according to the manufacturer's instructions.	Connected as intended.	P
	Where a real time clock is used in conjunction with an event log, the clock shall be set to the local time.	Set properly	P
	The manufacturer shall provide a declaration that the maximum system configuration for the CIE has been fully tested in-house.	Provided	P
	A reduced system configuration may be provided for environmental and EMC testing.	System provided	P
11.1.4	Power supply		
	Where power for the CIE is provided by PS Type A or B, the reduced functional test shall be carried out with the EPS at nominal value and with the APS at a level of at least 80 % of full capacity and connected according to the manufacturer's instructions. For a CIE requiring a type C PS, the SD shall be at a level of at least at 80 % of full capacity.	(See EVO power supply board report# 100798960MIN-001)	P
11.1.5	Event log checks		
	Test procedures specify checking of event logs at the step to which the check is relevant. It may not be practical to perform the check at this step (EXAMPLE: if CIE must be in unset condition to view log events). Thus all log event checks for a test may be performed together as a final step.	Informational	—
	At least one check should verify that the time specified in 8.10.1 is met.	Provided	P
11.1.6	Documentation		
11.1.6.1	Product		
	The product documentation (as required in Clause 9) shall be provided with the CIE.	See Section 9 for compliance	N/A
11.1.6.2	Simulator test device		
	If additional equipment (EXAMPLE: a simulator or a programmable device) is supplied by the manufacturer, connection drawings, operational description and instructions for use shall be supplied.	No such equipment used	N/A

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
<b>11.2</b>	<b>Test procedures</b>		
	All tests described in Clause 11 shall be carried out.	Informational	—
11.2.1	Tolerances		
	Where signals/messages are applied for a specified time, this shall be subject to a tolerance of -0 %, +5 %.	Informational	—
	The pass-fail criteria are given in each test.		P
11.2.2	Wire-free devices		
	Wire-free devices shall be subjected to the additional tests required by EN 50131-5-3.	Wire-free devices were not evaluated	N/A
<b>11.3</b>	<b>Reduced functional test</b>		
	For specified tests, (EXAMPLE: environmental tests), it may not be possible or desirable to carry out a full functional test; in these cases a reduced functional test shall be carried out in accordance with Table 12.	Reduced functional tests were carried out	P
<b>11.4</b>	<b>Functional tests</b>		
11.4.1	Processing intruder alarm signals or messages		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.1.1, 8.3.5, 8.4.1, 8.4.1.2, 8.5, 8.6, 8.9 and 8.10:	See Appendix A Table 13 for test results	P
	1) receive and process an intruder signal or message, within the processing timing requirements of this specification, when the CIE is in the set and the unset conditions;		P
	2) provide indication(s) and notification(s);		P
	3) correctly record the event(s) in the event log;		P
	4) restore in accordance with 8.3.5.		P
	b) Principle		
	The test consists of applying an intrusion signal/message as specified in 8.9 to an intruder input and monitoring that the input has been processed within the required time period and that the correct indication and notification(s) occur, see Table 13.		P
11.4.2	Processing of hold-up signals or messages		
	a) Object of the test		

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Clause	Requirement – Test	Result - Remark	Verdict
	To demonstrate the ability of the CIE including Hold-Up function to comply with 8.1.2, 8.3.S, 8.4.1, 8.S, 8.6, 8.9, 8.10 and to:	See Appendix A Table 14 for test results	P
	1) receive and process a hold-up signal or message, within the processing timing requirements of this specification, when the CIE is in the set and the unset conditions;		P
	2) provide indication(s) and notification(s);		P
	3) correctly record the event(s) in the event log;		P
	4) restore in accordance with 8.3.5.		P
	b) Principle		
	The test consists of applying a hold-up signal as specified in 8.9 or a hold-up message compatible to the CIE to a hold-up input when the system is in a variety of conditions shown in Table 14. The system shall be monitored to ensure that the input has been processed within the required time period and that the correct indication(s), notification(s) and event recording occur.		P
11.4.3	Processing of tamper signals or messages		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.1.3, 8.3.5, 8.4.1, 8.5, 8.6, 8.9, 8.10 and to:	See Appendix A Table 15 for test results	P
	1) receive and process a tamper signal or message, within the processing timing requirements of this specification, when the CIE is in the set and the unset conditions;		P
	2) provide indication(s) and notification(s);		P
	3) correctly record the event(s) in the event log;		P
	4) restore in accordance with 8.3.5.		P
	b) Principle		
	The test consists of applying a tamper signal as specified in 8.9 or a tamper message compatible with the CIE, to a tamper input when the system is in a variety of conditions shown in Table 15. The system shall be monitored to ensure that the input has been processed within the required time period and that the correct indication(s), notification(s) and event recording occur.		P
11.4.4	Processing of fault signals or messages		

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Clause	Requirement – Test	Result - Remark	Verdict
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.1.4, 8.3.5, 8.4.1, 8.5, 8.6, 8.9 and 8.10 to receive, process, log and notify a fault signal or message, within the requirements of this specification. The tests shall be performed with the CIE in set and unset modes to ensure that detection of faults satisfies all relevant requirements.	See Appendix A Table 16 for test results	P
	b) Principle		
	To demonstrate the ability of the CIE to:		P
	1) receive and process a fault signal or message, within the processing timing requirements of this specification, when the CIE is in the set and the unset conditions;		P
	2) provide indication(s) and notification(s);		P
	3) correctly record the event(s) in the event log;		P
	4) restore in accordance with 8.3.5.		P
	The test consists of applying fault conditions as specified in 8.1.4, as shown in Table 16.		P
	The system shall be monitored to ensure that the input has been processed within the required time period and that the correct indication(s), notification(s) and event recording occur.		P
11.4.5	Processing masking signals or messages		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.1.6, 8.3.5, 8.5, 8.6, 8.9 and 8.10 to receive, process, log and notify a masking signal or message, within the requirements of this standard. The tests shall be performed with the CIE in set and unset modes to ensure that detection of faults satisfies all relevant requirements.	Motion detectors not evaluated	-
	b) Principle		
	1) Receive and process a masking signal or message as required by 8.1.6 and 8.10.		-
	2) Provide notification and indication(s).		-
	3) Correctly record the event(s) in the event log.		-
	The test consists of applying masking signals or messages as specified in 8.1.6 and verifying that the correct indication and notification(s) occur, see Table 17.		-



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Clause	Requirement – Test	Result - Remark	Verdict
11.4.6	Processing reduction of range signals or messages		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.1.7, 8.3.5, 8.5, 8.6, 8.9 and 8.10 to receive, process, log and notify a reduction of range signal or message, within the requirements of this standard. The tests shall be performed with the CIE in set and unset modes to ensure that detection of faults satisfies all relevant requirements.	Motion detectors not evaluated	-
	b) Principle		
	1) Receive and process a masking signal or message as required by 8.1.7 and 8.10.		-
	2) Provide notification and indication(s).		-
	3) Correctly record the event(s) in the event log.		-
	The test consists of applying reduction of range signals or messages as specified in 8.1.7 and verifying that the correct indication and notification(s) occur, see Table 18.		-
11.4.7	CIE Processing in the presence of non-I&HAS inputs		
	a) Object of the test		
	To demonstrate the ability of CIE that includes inputs for non-I&HAS purposes to comply with 8.1.8, 8.9 and 8.10; to receive and process an intruder, hold-up, tamper or fault signal or message within the processing timing requirements of this specification, when the CIE is in the set and the unset modes and one or more optional signals or messages are present.	No non-I&HAS inputs found	N/A
	b) Principle		
	The test consists of applying a mandatory signal or message, whilst a non-I&HAS signal or message is applied to another input of the CIE and monitoring that the mandatory signal or message has been processed within the required time period and that the correct indication and notification(s) occur. See Table 19.	No non-I&HAS inputs found	N/A
<b>11.5</b>	<b>Access level</b>		
11.5.1	Access to the functions and controls		
	a) Object of the test		

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Clause	Requirement – Test	Result - Remark	Verdict
	To demonstrate the ability of the CIE to comply with 8.1.5, 8.3.1, 8.3.3.1, 8.3.5, 8.3.6, 8.3.7, 8.3.9, 8.4.2 and 8.10 to provide up to four levels of access and verify the relevant access to the functions and controls.	See Appendix A Table 20 for test results	P
	b) Principle		
	The test consists of attempting to use the functions and the controls required by 8.1.5, 8.3.1, 8.3.3.1, 8.3.5, 8.3.6, 8.3.7, 8.3.9, 8.4.2 and 8.10, operating the CIE at each access level and verifying that access is granted for permitted functions and is denied for non-permitted functions (see Table 20).		P
<b>11.6</b>	<b>Authorization requirements</b>		
	Where a CIE is able to accept more than one method of authorization, the number of combinations shall, be checked individually for each method as per the following procedures, to ensure compliance if that method only is used on an I&HAS.	Only one method found	N/A
11.6.1	Mechanical key tests		
	a) Object of the test		
	To verify the mechanical key variations, as specified in EN 50131-1 :2006, Table 3, are met by the CIE and any associated ACE and that the requirements of 8.3.2 and 8.3.2.1 are met.	No mechanical keys used. See PIN code tests in Section 11.6.2.2.	N/A
	To verify the manufacturer's documentation complies with the requirements of Clause 9.		N/A
	b) Principle		
	Verify the range of combinations of mechanical keys is provided and that invalid mechanical keys are not accepted.		N/A
	c) Test conditions		
	The manufacturer shall provide the test-house with the following information:		N/A
	1) the number of key variations;		N/A
	2) the method used to determine the number of key variations.		N/A
	d) Test procedure		
	1) Attempt to change the state of the CIE using a valid key.		N/A
	2) Attempt to change the state of the CIE using a non valid key.		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	3) Examine the manufacturer's information regarding key construction and calculations.		N/A
	e) Measurement		
	1) Verify that the manufacturer's information and calculations are valid. Note the state of the CIE before and after use of valid key.		N/A
	2) Note the state of the CIE before and after attempted use of non-valid key.		N/A
	3) Record details of the invalid keys.		N/A
	f) Pass/fail criteria		
	1) The valid key changes the state of the CIE.		N/A
	2) The non-valid key does not change the state of the CIE.		N/A
	3) The manufacturer's supplied information and calculations verify that the number of combinations complies with EN 50131-1:2006, Table 3.		N/A
11.6.2	Logical key tests		
	Where no specific tests are provided for the type of logical key used, the principles of the "digital key" tests should be applied.	Informational	—
11.6.2.1	Digital key tests		
	a) Object of the test		
	To verify the number of logical key variations, as specified in EN 50131-1:2006, Table 3, are met by the CIE and any associated ACE and that the requirements of 8.3.2 and 8.3.2.2.2 are met.	See PIN code tests in Section 11.6.2.2	N/A
	To verify the manufacturer's documentation complies with the requirements of Clause 9.		N/A
	b) Principle		
	Verify the range of variations of digital keys are provided and that invalid digital keys are not accepted, also, where applicable, that copy rejection and power supply requirements are met.		N/A
	c) Test conditions		
	The manufacturer shall provide the test-house with the following information:		N/A
	1) the number of key variations;		N/A
	2) the method used to determine the number of key variations;		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	3) if the operational range of the digital key exceeds 1 m, the method of rejection of unauthorized copies.		N/A
	d) Test procedure		
	1) Attempt to change the state of the CIE using a valid key.		N/A
	2) Attempt to change the state of the CIE using a non valid key.		N/A
	3) Examine the manufacturer's information regarding key construction and calculations.		N/A
	4) Check the number of variations of the digital key.		N/A
	5) If the operational range exceeds 1 m, either the manufacturer shall provide the means to simulate a copied key or the manufacturer shall provide details of how the copy rejection operates.		N/A
	6) If self-powered, the manufacturer shall provide the means to simulate a key with low storage device charge, as required by EN 50131 6:2008, 7.7.4.1.		N/A
	e) Measurement		
	1) Verify that the manufacturer's information and calculations are valid.		N/A
	2) Note the state of the CIE before and after use of valid key.		N/A
	3) Note the state of the CIE before and after attempted use of non-valid key.		N/A
	4) Record details of the invalid digital keys.		N/A
	5) Record range of digital key.		N/A
	6) Record the system response to a copied key or evaluate the manufacturer's documented copy rejection technique.		N/A
	7) Record the system responses to a key with low voltage storage device.		N/A
	f) Pass/fail criteria		
	1) The valid digital key changes the state of the CIE.		N/A
	2) The non-valid digital key does not change the state of the CIE.		N/A
	3) The manufacturer's supplied information and calculations verify that the number of combinations complies with EN 50131-1:2006, Table 3.		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	4) If range exceeds 1 m, a copied key is rejected or the manufacturer's described copy protection technique meets the copy protection requirement.		N/A
	5) If self-powered, the requirements of 8.3.2.2.2 and EN 50131-6:2008, 7.7.4.1 for low battery reporting are met.		N/A
11.6.2.2	PIN code tests		
	a) Object of the test		
	To verify the number of combinations specified in EN 50131-1: 2006, Table 3 are met by the CIE and any associated ACE and that the requirements of 8.3.2 and 8.3.2.2.1 are met.	See Appendix A Table 21 for test results	P
	To verify the manufacturer's documentation complies with the requirements of Clause 9.		P
	b) Principle		
	Verify that the range of variations of PIN codes is provided and that invalid codes are not accepted.		P
	c) Test conditions		
	For the test purpose, the manufacturer shall provide to the test-house the following information:		P
	1) the number of disallowed codes;	Provided in documentation. No codes disallowed	P
	2) the method used to determine the number of variations.	000000-999999	P
	3) for each user, the minimum number of variations of logical key shall be indicated.	000000-999999	P
	d) Test procedure		
	1) Create samples of valid codes as described in the CIE documentation. The number of valid codes to be created shall be: 10 for grade 1; 20 for grade 2; 50 for grade 3; 100 for grade 4.		P
	2) Attempt to create an invalid code.		P
	3) Verify the validity of the manufacturer's calculations.		P
	e) Measurement		
	1) Record the valid codes.		P
	2) Record the invalid code.		P
	f) Pass/fail criteria		

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Clause	Requirement – Test	Result - Remark	Verdict
	1) All valid codes created in "d) 1)" above shall be accepted according to grade.		P
	2) Invalid codes shall not be accepted.		P
	3) Calculations shall be shown to be in accordance with code combinations shown in Table 2.	1,109,814 allowed PIN codes	P
11.6.2.3	Tests for authorization by biometric means		
	Relevant parts of the test procedure described for digital keys at 11.6.2.1 shall be applied.	Biometric means not used	N/A
	Additionally, the manufacturer shall provide information for the test house to evaluate compliance with the requirements of 8.3.2.2.3 (Table 2).		N/A
11.6.2.4	Tests for authorization by combinations of keys		
	Where combinations of keys are accepted, as specified in 8.3.2.4, each type must be evaluated as appropriate to the type of key. The timing requirements of Table 3 shall be met. The number of combinations of each type shall be multiplied to assess compliance with EN 50131-1:2006, Table 3.	No combinations used	N/A
11.6.3	Invalid authorization attempts		
	a) Object of the test		
	Verify that the detection and notification of attempted entry of invalid logical keys or (when the CIE has the means to distinguish such) mechanical keys complies with 8.3.2 and Table 3.	See Appendix A Table 21 for test results	P
	b) Principle		
	The test consists of entering a series of invalid logical or (if appropriate) mechanical keys and establishing that when the number of invalid attempts have been made as specified in Table 3 the user input device is disabled and/or a tamper signal or message is generated and recorded in the event log as specified. See Tables 21 and 22.		P
	When testing invalid PIN codes, at least one attempt shall take the form of a valid code entry not completed within 60 s.		P
11.7	<b>Operational tests</b>		
11.7.1	Setting procedures		
	a) Object of the test		
	Verify that all setting procedures are in accordance with 8.3.3, 8.3.3.2 and 8.3.3.3.	See Appendix A Table 23 for test results	P

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Clause	Requirement – Test	Result - Remark	Verdict
	b) Principle		
	The test consists of setting the CIE and verifying that these are in accordance with the requirements of this standard (see Table 23).		P
11.7.2	Prevention of setting and overriding of prevention of setting procedures		
	a) Object of the test		
	Verify that all procedures are in accordance with 8.3.3.1.	See Appendix A Table 24 for test results	P
	b) Principle		
	The test consists of attempting setting the CIE and verifying that the responses are in accordance with the requirements of this standard (see Table 24).		P
11.7.3	The set state		
	Prior to testing unsetting functions, ascertain from manufacturer's documentation which option(s) for the set state are provided (see 8.3.3.4).		P
	At least one of the options described in EN 50131-1:2006, 8.3.7 shall be provided, appropriate to security grade.	See also ITS report 100484764MIN-011	P
	Depending upon the option(s) provided, the relevant portion(s) of 11.7.4 shall be tested.		P
11.7.4	Unsetting procedures		
	a) Object of the test		
	Verify that all procedures are in accordance with the requirements of 8.3.4.	See Appendix A Table 25 for test results	P
	b) Principle		
	The test consists of unsetting the CIE using all the procedures provided as specified in the manufacturer's documentation and verification that these are in accordance with the requirements within this specification (see Table 25).		P
11.7.5	Setting and/or unsetting automatically at pre-determined times		
	If the CIE has the facility to set and/or unset automatically at pre-determined times, the following test shall apply:	Setting and/or unsetting automatically at pre-determined times was not found.	N/A
	a) Object of the test		
	Verify that all procedures are in accordance with 8.3.3, 8.3.3.1 and 8.3.4.		N/A
	b) Principle		

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Clause	Requirement – Test	Result - Remark	Verdict
	The test consists of attempting setting the CIE and verifying that the responses are in accordance with the requirements of this standard (see Table 26).		N/A
11.7.6	Inhibit and isolate functions		
	a) Object of the test		
	To verify that the operation of inhibit or isolate functions comply with the requirements of 8.3.6 and 8.3.7.	No inhibit or isolate functions found	N/A
	b) Principle		
	The test consists of operating inhibit and isolate modes to ensure correct functionality (see Table 27).		N/A
	c) Test conditions		
	Examine the manufacturer's documentation to confirm details of functionality.		N/A
	The test shall be run with the system initially in the unset condition.		N/A
11.7.7	Test functions		
	a) Object of the test		
	To verify the ability of the CIE to permit test functions to be carried out in accordance with the requirements of 8.3.8, 8.3.9 and 8.10.	See Appendix A Table 28 for test results	P
	b) Principle		
	The test consists of operating the test modes to ensure correct functionality (see Table 28).		P
	c) Test conditions		
	The test shall be run with the system initially in the unset condition.		P
11.7.8	Other functions		
	a) Object of the test		
	To demonstrate the ability of the CIE to function normally whilst a non-EN 50131-1 function is used, as required by 8.3.10.	No other functions found	N/A
	b) Principle		
	The test consists of operating an additional function during a normal CIE operation and verifying that compliance with this standard is not affected.		N/A



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Clause	Requirement – Test	Result - Remark	Verdict
	The manufacturer shall advise on what additional functions are provided and how these may be operated which I&HAS functions the additional function may interfere with.		N/A
	c) Test conditions		
	The CIE shall be in the condition appropriate to testing the I&HAS function identified.		N/A
	d) Test procedure		
	Operate the I&HAS and additional functions simultaneously (or within an agreed time).		N/A
	e) Measurement		
	Monitor the operation of the I&HAS function.		N/A
	f) Pass/fail criteria		
	The operation of the I&HAS function shall comply with the requirements of this standard.		N/A
11.7.9	Monitoring of CIE processing		
	a) Object of the test		
	To demonstrate the ability of the CIE with programme controlled serial data processing to comply with 8.4.3 to detect and react to processing faults.	See Appendix A Table 29 for test results	P
	b) Principle		
	The test consists of introducing a fault in the processing and monitoring that the correct indication(s) and notification(s) occur, see Table 29.		P
	The manufacturer shall advise on how a processing failure may be induced for test purposes.		P
11.7.10	Availability of Indications		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with the requirements of 8.5.1.	See Appendix A Table 30 for test results	P
	b) Principle		
	The test consists of introducing a condition requiring a mandatory indication and ensuring that the requirements of EN 50131-1: 2006, 8.5.2 and 8.5.3 are met, in accordance with Table 30.		P
11.8	<b>Tamper security tests</b>		

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
11.8.1	ACE Type A		
	Documentation provided by the manufacturer to justify a claim of "Type A" status for ACE shall be verified.	Not type A	N/A
11.8.2	Tamper protection		
	a) Principle		
	The principle of this test is to use Impact testing to verify that the CIE/ACE housing meets the tamper protection requirements of 8.7.1.		P
	b) Procedure		
	Subject the CIE/ACE housings to impact testing using the methodology of EN 50130-5, with equipment meeting the requirements of EN 60068-2-75:1997 at the severity levels specified in 8.7.1.		P
	c) Measurement		
	Assess the EUT as described in the reduced functional test in 11.3.		P
	d) Pass/fail criteria		
	The EUT shall meet the requirements of the reduced functional test before, during and after the test.		P
	The generation of signals or messages is permitted as a result of this test.		P
	There shall be no signs of mechanical damage that will permit access to internal elements of the CIE/ACE housing unless a tamper signal or message has been generated.		P
	There shall be no damage to the ACE housing that would permit the status of the I&HAS to be changed or prevent the CIE from initiating all mandatory notification responses.		P
11.8.3	Tamper detection - Access to the inside of the housing		
	a) Principle		
	The principle of this test is to verify that it is not possible to insert a tool into the CIE/ACE in its normal mounting position and defeat the operation of the tamper detection circuitry before a tamper signal or message is generated (see 8.7.2.1).	See Appendix A Table in Section 11.8.3	P
	b) Test Conditions		
	The CIE should be in unset condition.	Informational	—
	c) Mounting		

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Clause	Requirement – Test	Result - Remark	Verdict
	Mount the CIE/ACE according to the manufacturer's instructions with the housing securely closed.	Informational	—
	d) Procedure		
	Open the CIE/ACE housing by normal means and attempt to introduce a sabotage tool as specified in 8.7.2.1, into the EUT without causing physical damage before the tamper detection device operates.		P
	If the tool is successfully inserted, it should be manoeuvred to try to interfere with the tamper detection device. The wire test includes forming the wire as appropriate.		P
	Attempts shall be restricted to 5 min per tool (10 min for grade 4). If the test fails, it should be repeated and a further failure within 4 further attempts shall result in the overall test failing.		P
	e) Measurement		
	Record the generation of the tamper signal or message.	Tamper signals produced	P
	f) Pass/fail criteria		
	Opening the CIE/ACE by normal means shall only be possible by following the procedure defined by the manufacturer and shall generate a tamper signal or message.		P
	Either, the tamper detection device shall not have been defeated before the generation of a tamper signal or message,	Tamper signal produced	P
	Or visible damage has been caused in order to defeat the tamper detection device.	No damage	N/A
11.8.4	Tamper detection - Removal from mounting		
	a) Principle		
	The principle of this test consists of removing the CIE/ACE from its mounting surface and monitoring the EUT to determine whether a tamper signal or message is generated within the required time period when the maximum permitted distance (see 8.7.2.2) is exceeded.	See Appendix A Table in Section 11.8.4 for test results	P
	b) Test Conditions		
	The CIE should be in the unset condition.	Informational	—
	c) Mounting		

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Clause	Requirement – Test	Result - Remark	Verdict
	Position the EUT on a horizontal flat surface, taking into account any requirements specified by the manufacturer to operate the removal from mounting detection device.	Informational	—
	d) Procedure		
	Lift the EUT from the flat surface in a perpendicular direction to the mounting surface by a distance exceeding that specified in 8.7.2.2, whilst monitoring the tamper signal or message output.		P
	Attempt to slide a test blade as defined in 8.7.2.2 to defeat the removal from mounting detection before and during the above test.	Not able to defeat tamper	P
	Attempt to use pliers as specified in 8.7.2.2 to defeat the removal from mounting detection before and during the above test.	Not able to defeat tamper	P
	Attempts shall be restricted to 5 min per tool (10 min for grade 4). If the test fails, it should be repeated and a further failure within 4 further attempts shall result in the overall test failing.		P
	e) Measurement		
	Monitor the tamper signal or message output.		P
	Record whether it was possible to prevent the generation of a tamper signal or message using the test blade or pliers.	Not able to defeat tamper	P
	f) Pass/fail criteria		
	The tamper signal or message shall have been generated within 11 s of the UET exceeding the distance specified in 8.7.2.2.		P
	It shall not have been possible to prevent the generation of a tamper signal or message using the test blade or pliers.	Not able to defeat tamper	P
11.8.5	Tamper detection - Penetration of the housing		
	a) Principle		
	The principle of this test consists of drilling a hole in an accessible face of the housing and verifying that a tamper signal or message is generated (see 8.7.2.3).	EVO192, ZX8, and TM40 are inside the protected premises.	N/A
	b) Test Conditions		
	The I&HAS should be in the unset condition.		N/A
	c) Mounting		
	Mount the EUT according to the manufacturer's instructions with the housing securely closed.		N/A
	d) Procedure		

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Clause	Requirement – Test	Result - Remark	Verdict
	Drill a hole of 4 mm diameter in any accessible face of the EUT using a metal drill bit.		N/A
	e) Measurement		
	Monitor the tamper signal or message output.		N/A
	f) Pass/fail criteria		
	A tamper signal or message shall be generated when a hole of 4 mm is made in any accessible face of the housing.		N/A
<b>11.9</b>	<b>Substitution tests</b>		
11.9.1	Tests for monitoring of substitution of components		
	The manufacturer shall provide information from which it can be verified that the method of monitoring is compliant with the requirement of EN 50131-1:2006, 8.7.3.	Substitution tests optional in security grade 3.	N/A
11.9.2	Tests for monitoring of substitution - Timing requirements		
	The manufacturer shall provide information from which it can be verified that the method of monitoring is compliant with the timings requirement specified in EN 50131-1 :2006,8.7.4.		N/A
<b>11.10</b>	<b>Testing of I&amp;HAS timing performance</b>		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.9 and the timing requirement of EN 50131-1:2006, 8.8.1.	See Appendix A Table in Section 11.10 for test results	P
	b) Principle		
	The test consists of introducing a notifiable event and ensuring that this takes place within the time specified by EN 50131-1: 2006, 8.8.1 and 8.9.1.		P
	c) Procedure		
	With the system in set mode, trigger an intruder alarm event.		P
	d) Measurement		
	Record the time before the notification output(s) become live.		P
	e) Pass/fail criteria		
	The time from triggering the event until notification takes place shall not exceed 20 s.	EN 50131-1, clause 8.9.2 requires messages to be notified within 10 seconds.	P

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Clause	Requirement – Test	Result - Remark	Verdict
	For message structured systems: a) the manufacturer shall provide information to enable the time at which the message originated to be determined; b) the manufacturer shall provide evidence that this timing requirement can be maintained under the slowest possible communication conditions in an installed system.	Not this type of system	N/A
<b>11.11</b>	<b>Testing for interconnections</b>		
11.11.1	Monitoring of interconnections		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.8 and the timing requirement of EN 50131-1:2006, 8.8.3.	See ITS Report 100484764MIN-011 Appendix A Table 8.8 for test results	P
	b) Principle		
	The test consists of simulating the interconnection being disabled and monitoring the response.		P
	c) Procedure		
	Disable the interconnection (EXAMPLE: by short circuit).		P
	If the system uses non-specific interconnections, simulate another application taking permanent control of the interconnection.	No non-specific interconnections.	N/A
	d) Measurement		
	Record the system response and measure the time taken for the system to respond.		P
	e) Pass/fail criteria		
	In each case, the response shall comply with the requirements of EN 50131-1: 2006, 8.8.3.		P
11.11.2	Testing of monitoring of periodic communication		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.8 and the timing requirement of EN 50131-1: 2006, 8.8.4.1.	See ITS Report 100484764MIN-011 Appendix A Table 8.8 for test results	P
	b) Principle		
	The manufacturer shall provide means to, either:		—
	verify from documentation that the system response would comply with the requirements of EN 50131-1: 2006, Table 17, or	No such information in documentation.	N/A
	identify the point at which a periodic communication takes place in order to test as follows:		P
	c) Procedure		

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Clause	Requirement – Test	Result - Remark	Verdict
	With the system in set mode, apply a fault condition (EXAMPLE: short circuit) to the interconnect, immediately following the identified periodic communication.	See ITS Report 100484764MIN-011 Appendix A Table 8.8 for test results	P
	d) Measurement		
	Measure time for system to respond.		P
	e) Pass/fail criteria		
	System response defined by EN 50131-1: 2006, Table 20 must occur within the time specified by EN 50131-1: 2006, Table 17.	Meets requirements of table 17	P
11.11.3	Testing of verification during setting procedure		
	a) Object of the test		
	To demonstrate the ability of the CIE to comply with 8.8 and the timing requirement of EN 50131-1: 2006, 8.8.4.2.	See ITS Report 100484764MIN-011 Appendix A Table 8.8 for test results	P
	b) Principle		
	The manufacturer shall provide means to, either		—
	verify from documentation that the system response would comply with the requirements of EN 50131-1: 2006, Table 18, or	No such information in documentation.	N/A
	identify the point at which a periodic communication takes place in order to test as follows:		P
	c) Procedure		
	With the system in unset mode, apply a fault condition (example: short circuit) to the interconnect, immediately following the identified periodic communication for the period required by Table 18. Attempt to set the I&HAS.	See ITS Report 100484764MIN-011 Appendix A Table 8.8 for test results	P
	d) Measurement		
	Monitor the status of the I&HAS.		P
	e) Pass/fail criteria		
	The I&HAS shall not set.	The I&HAS will not set.	P
11.11.4	<b>Test for security of communication</b>		
	The manufacturer shall provide information from which compliance with the requirements of EN 50131-1: 2006, 8.8.5 can be verified.	Optional in security grade 3	N/A
11.12	<b>Event log</b>		
	a) Object of the test		

EN 50131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	To demonstrate the ability of the CIE to maintain an event log and keep an accurate clock in accordance with the requirements of 8.10.	See Appendix A Table 31 for test results	P
	b) Principle		
	The test consists of operating the CIE to ensure correct operation of the event log, whilst ensuring the long-term accuracy of the clock (see Table 31).	Informational	—
	c) Test condition		
	The test shall be run with the system initially in the unset condition.	Informational	—
<b>11.13</b>	<b>Marking and documentation</b>		
	a) Principle		
	The principle of this test is to verify that the marking of the CIE and the documentation supplied with the CIE meet the requirements of Clauses 9 and 10.	Informational	—
	b) Procedure		
	Examine the marking of the CIE and ACE.	See Section 10	P
	Examine the documentation supplied by the CIE manufacturer.	See Section 9	P
	c) Pass/fail criteria		
	The marking on the CIE and ACE shall meet the requirements of Clause 10 of this standard.	See Section 10	P
	The documentation shall meet the requirements of Clause 9 of this standard.	See Section 9	P
<b>11.14</b>	<b>Environmental and EMC tests</b>		
	The environmental classification is described in EN 50131-1. Relevant environmental tests carried out shall be in accordance with EN 50130-5.	(See appended table 11.14)	P
	The EMC susceptibility tests required for compliance with the EMC Directive are defined in EN 50130-4.		P
	Where the Reduced Functional Test is specified during the environmental and EMC conditioning, this shall be carried out as detailed in EN 50130-5.		P
	For operational tests, CIE and ACE shall not generate alarm, tamper, fault or other signals or messages or change from one mode to another, when subjected to the specified range of environmental and EMC conditions and shall continue to function normally.		P
	For endurance tests, the CIE and ACE shall pass the reduced functional test after being subjected to the specified range of environmental conditions.		P



## Appendix A – Test Records

**EN 50151-3 Section 11.3 – Reduced functional tests**

11.3 (Table 12): Reduced functional test				P
Step	Test Condition	Action	Measurement	P/F criteria
1	CIE Unset, Absence of “intruder, tamper, fault signals and messages”	Apply an intruder alarm signal or message for 401 ms	Record indications  <b>Result:</b> Zone 001 set as instant zone by selecting the following by using the installer code. Section [0101] Zone Parameter for Zone 001 set to (41) (*2*4****)  TM40: 1 open is displayed under the zones icon. Depressing the zones icon displays Zone 001 open.	Alarm condition and zone identification.  <b>Result:</b> Pass
2	As above + one intruder alarm input, not allocated as an entry route	Attempt to set the system	Record whether system sets  <b>Result:</b> TM40: Depress the Arm icon and enter user code 1234. Display indicates the following:  Cannot Arm System Zones Are Open Force Arm Bypass and Arm View Open Zone(s)  Depressing View Open Zone(s) icon displays Zone 001 open.	The system should be prevented from being set  <b>Result:</b> Pass – would not allow to set
3	As in 1 above	Set the system	Record indications  <b>Result:</b> TM40: Displays the following:  Exit Delay and counts down the time from 10 seconds.  Zone in Alarm Zone 001 3:52 Area 1	Indications for completion of setting, I&HAS Set/Unset  <b>Result:</b> Pass
4	CIE set	Apply an alarm signal or message as In 8.9	Monitor the notification output signals or messages and record results	Notification via self powered WD and remote powered WD. (See ATS report #100803903MIN-011 and 100803903MIN-012)

## Appendix A – Test Records

11.3 (Table 12): Reduced functional test				P
Step	Test Condition	Action	Measurement	P/F criteria
			<u><b>Result:</b></u> Set Zone 1 in alarm  TM40: Speaker sounds (not solid)  Bell terminal on EVO192 board switched from 0V to 12.3VDC.	<u><b>Result:</b></u> Pass
5	CIE in “set condition” and in “alarm” conditions	Manually unset the CIE	Record whether the system has changed its status to “unset” and that the notification output signals or messages are correct, check event log	Indications for completion of unsetting, I&HAS Set/Unset WD outputs shall silence, other notification output signals or messages may remain active until restored. Correct time and events sequence recorded.
			<u><b>Result:</b></u> Entered the user code to unset  TM40: Speaker stopped Display indicated the following:  Disarmed Alarm Memory under the info icon 1 open under zone(s) icon  Depressing the zones icon indicated Zone 001 open  Bell terminal on EVO192 board switched from 12.3VDC to 0V.	<u><b>Result:</b></u> Pass
6	CIE in “unset” conditions	Restore CIE	Record whether system returns to normal condition	Restore at access level 2 or 3
			<u><b>Result:</b></u> Changed the switch connected to Zone 1 from Alarm to clear.  System returned to normal condition.	<u><b>Result:</b></u> Pass

## Appendix A – Test Records

**EN 50151-3 Section 11.4.1 – Functional tests: Processing intruder alarm signals or messages**

To demonstrate the ability of the CIE to:

- 1) receive and process an intruder signal or message, within the processing timing requirements, when the CIE is in the set, and the unset conditions;
- 2) provide indication(s) and notification(s);
- 3) correctly record the event(s) in the event log;
- 4) restore in accordance with 8.3.5.

11.4.1 (Table 13): Processing intruder alarm signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
	GENERAL CONDITION The CIE is in the condition described in the steps below with all inputs and outputs in normal condition		Record the condition of the indications and notifications of the CIE, and any associated user input devices (EXAMPLE remote keypads). Time when signal /message applied.  Time when notification occurs	GENERAL CRITERIA Processing shall be in accordance with EN 50131-1:2006, Table 7 and 8.4.1  The indications and notifications shall be in accordance with EN 50131-1:2006, Tables 8, 9, and 10	—
1	C.I.E in “set mode”	Apply Intruder signal or message for 401 ms	TM40: System status arm is indicated  -Zone 1 alarm activated in less than 10s  - Internal siren was activated  - Zone 1 alarm logged in event log  -The identity of the alarm point was recorded  -(See ATS report #100803903MIN-011 and 100803903MIN-012)	As defined in EN 50131-1:2006, 8.9, notification shall occur within the time specified by EN 50131-1, 8.9.  The logging shall be in accordance with 8.10.	Pass

## Appendix A – Test Records

11.4.1 (Table 13): Processing intruder alarm signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
2	CIE in “set mode” (with alarm condition)	Unset the CIE	<p>-The system is again ready after the user is introducing the user code (level 2) for disarming.</p> <p>Internal siren stopped within 1 second.</p> <p>Event log recorded the system unsetting and alarmed zone identity</p>	Indications shall comply with 8.5	Pass
3	CIE in “unset mode”	Restore (EXAMPLE: by entering a correct PIN number into the keypad)	-After entering the correct user code (level 2) the system is restored	In accordance with 8.3.5	Pass
4	<p>CIE in “set mode”</p> <p>NOTE To verify that multiple signals or messages applied at the same alarm point, are recorded in the event log the number of times specified in EN 50131-1:2006, 8.10.</p>	<p>Apply the same intruder signal/message for 401ms once more than the maximum number of times specified in EN 50131-1:2006, 8.10.</p> <p>Afterwards repeat step 3.</p>	<p>TM40: Event log logged the number of alarms set in section [3114]</p> <p>See Note 1</p> <p>ATS &amp; ARC (See ATS report #100803903MIN-012)</p>	<p>The number of intruder alarms from the same source shall comply with EN 50131-1, 8.10</p> <p>At least 3 and not more than 10 intruder alarms from the same source shall be recorded</p>	Pass
5	<p>CIE in “unset mode”</p> <p>NOTE To verify that intruder signals or messages are not recorded in the event log</p>	<p>Apply the same intruder signal/message for 401ms 4 times.</p> <p>Afterwards, repeat step 3</p>	<p>-No logging in event log of alarms when CIE is unset mode.</p> <p>ATS &amp; ARC (See ATS report #100803903MIN-012)</p>	Intruder signals or messages are not recorded in the event log.	Pass

## Appendix A – Test Records

11.4.1 (Table 13): Processing intruder alarm signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
6	CIE in “set mode”.  NOTE To verify that if multiple signals applied, at least one is processed correctly.	Apply intruder signals or messages equivalent to 5% of the maximum alarm point capacity of the CIE or 5 (whichever is the greater) within 1 second.	TM40: displays the last 3 zone alarms detected. Depressing the down arrow displays the remaining 3 alarm zones.  All 6 zone alarms in event log.  ATS & ARC (See ATS report #100803903MIN-012).	At least one intruder signal or message shall be processed	Pass
7	CIE in “set mode” (with more than one alarm condition)	Unset the CIE	-The system is again ready after the user is introducing the user code for disarming, Internal siren stopped within 1 second. User level 2 required.  -Event log recorded the system unsetting and alarmed zone identity	Indications shall comply with 8.5.1.1.	Pass
8	CIE in “unset mode”	Restore all the conditions.	-The system is restored (“disarmed”) by entering the correct user code (level 2).	In accordance with 8.3.5 which refers to EN 50131-1:2006, 8.3.9.	Pass
Note 1: The Auto Zone Shutdown feature was enabled for all zones. The Auto Zone Shutdown of section [3114] has a default value of 010. Zone 1 was set up using (41) (1*****). Partition 1: [3114] was set to [004].					

## Appendix A – Test Records

**EN 50151-3 Section 11.4.2 – Functional tests: Processing of hold-up signals or messages**

To demonstrate the ability of the CIE to:

- 1) receive and process a hold-up signal or message, within the processing timing requirements, when the CIE is in the set, and the unset conditions;
- 2) provide indication(s) and notification(s);
- 3) correctly record the event(s) in the event log;
- 4) restore in accordance with 8.3.5.

11.4.2 (Table 14): Processing of hold-up signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
	<b>GENERAL CONDITION</b>  The CIE is in the condition described in the steps below with all inputs and outputs in normal condition.		Record the condition of the indications and notifications of the CIE, and any associated user input devices (EXAMPLE remote keypads).  Time when signal /message applied.  Time when notification occurs  Record the event log	<b>GENERAL CRITERIA</b> Processing shall be in accordance with EN 50131-1:2006, Table 7 and 8.4.1  The indications and notifications shall be in accordance with EN 50131-1:2006, Tables 8, 9, and 10	—

## Appendix A – Test Records

11.4.2 (Table 14): Processing of hold-up signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
1	CIE in “set mode”	Apply hold-up signal/ message for 401 ms	<p>TM40: “1 Open” under Zones icon. Info icon highlighted in red with “Was in alarm” under.</p> <ul style="list-style-type: none"> <li>- alarm activated in less than 2 seconds</li> <li>- Internal siren was not activated</li> <li>- alarm logged in event log</li> <li>-The identity of the alarm point was recorded</li> </ul> <p>(See ATS report #100803903MIN-001 and 100803903MIN-012)</p>	<p>As defined in 8.9, notification shall occur within the time specified by EN 50131-1, 8.9.</p> <p>(Shall be notified within 10 seconds)</p> <p>The logging shall be in accordance with 8.10.1</p>	Pass
2	CIE in “set mode” (with alarm condition)	Unset the CIE	<p>-The system is again ready after the user is introducing the user code (level 2) for disarming.</p> <p>TM40: Event log recorded the system unsetting and alarmed zone identity</p>	Indications shall comply with 8.5	Pass
3	CIE in “unset mode”	Restore	TM40: After entering the correct user code (level 2) the system is restored	In accordance with 8.3.5	Pass

## Appendix A – Test Records

11.4.2 (Table 14): Processing of hold-up signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
4	CIE in “set mode”  NOTE To verify that multiple signals or messages applied at the same hold-up alarm point, are recorded in the event log the number of times specified in EN 50131-1:2006, 8.10	Apply the same hold-up signal/message for 401ms once more than the maximum number of times specified in EN 50131-1:2006, 8.10.  Afterwards repeat step 3.	TM40: Event log logged the number of alarms set in section [3114]  See Note 1  ATS & ARC (See ATS report #100803903MIN-012).	The number of hold-up alarms from the same source shall comply with EN 50131-1:2006, 8.10.  The number of events recorded from any single source shall be limited to at least 3 and a maximum of 10 during any set or unset period.	Pass
5	CIE in “unset mode”  NOTE To verify that hold-up signals or messages are not recorded in the event log.	Apply the same hold-up signal/message for 401ms four times.  Afterwards, repeat step 3	TM40: Event log logged the number of alarms set in section [3114]  See Note 1  ATS & ARC (See ATS report #100803903MIN-012).	No recorded events	Pass
6	CIE in “set mode”.  NOTE To verify that if multiple signals or messages are applied, at least one is processed correctly.	Apply hold-up signals or messages equivalent to 5% of the maximum alarm point capacity of the CIE or 5 (whichever is the greater) within 1 second.	TM40: displays the last 3 hold-up zone alarms detected. Depressing the down arrow displays the remaining 3 hold-up zone alarms.  All 6 hold-up zone alarms in event log.  ATS & ARC (See ATS report #100803903MIN-012).	At least one hold-up signal or message shall be processed	Pass



## Appendix A – Test Records

11.4.2 (Table 14): Processing of hold-up signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
7	CIE in “set mode” (with more than one alarm condition)	Unset the CIE	-The system is again ready after the user is introducing the user code for disarming, User level 2 required.  -Event log recorded the system unsetting, alarmed zone identity, user name, date, and time	Indications shall comply with 8.5.1.1.	Pass
8	CIE in “unset mode”	Restore all the conditions.	-The system is restored (“disarmed”) by entering the correct user code (level 2).	In accordance with 8.3.5 which refers to EN 50131-1:2006, 8.3.9.	Pass
Note 1: The Auto Zone Shutdown feature was enabled for all zones. The Auto Zone Shutdown of section [3114] has a default value of 010. Zone 004 was tested. Zone 004 was set up using (71) (1***5***). Partition 1: [3114] was set to [004].					

## Appendix A – Test Records

**EN 50151-3 Section 11.4.3 – Functional tests: Processing of tamper signals or messages**

To demonstrate the ability of the CIE to:

- 1) receive and process a tamper signal or message, within the processing timing requirements, when the CIE is in the set, and the unset conditions;
- 2) provide indication(s) and notification(s);
- 3) correctly record the event(s) in the event log;
- 4) restore in accordance with 8.3.5.

11.4.3 (Table 15): Processing of tamper signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
	<p><b>GENERAL CONDITION</b></p> <p>The CIE is in the condition described in the steps below with all inputs and outputs in normal condition.</p> <p>When multiple methods to set and to unset the CIE are provided, then the test shall be carried out for each method.</p>		<p><b>GENERAL MEASUREMENT</b></p> <p>Record the condition of the indications and notifications of the CIE and any associated user input devices.</p> <p>Time when signal/message applied</p> <p>Time when notification Occurs</p> <p>Record the event log</p>	<p><b>GENERAL CRITERIA</b></p> <p>Processing shall be in accordance with EN 50131-1:2006, Table 7 and 8.4.1.</p> <p>The indications and notifications shall be in accordance with EN 50131-1:2006, Tables 8, 9 and 10.</p>	—
1	CIE in “set mode”	Apply tamper signal/message for 401ms	<p>TM40: Displays System Alarm Module Tamper 14:03.</p> <p>-tamper alarm activated in less than 2 seconds</p> <p>-Internal siren operated in less than 2 seconds</p> <p>- tamper alarm logged in event log</p> <p>- Event log recorded the system unsetting, user name, date, and time.</p> <p>(See ATS report #100803903MIN-001 and 100803903MIN-012)</p> <p>See Note 2</p>	<p>As defined in 8.9 notification shall occur within the time specified by EN 50131-1:2006, 8.9.</p> <p>(Shall be notified within 10 seconds)</p> <p>The logging shall be in accordance with 8.10.</p>	Pass

## Appendix A – Test Records

11.4.3 (Table 15): Processing of tamper signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
2	CIE in “set mode” (with tamper condition)	Unset the CIE	-Internal siren stopped within 10 s  -Event log recorded unset, user identity, date, and time.	Indications shall comply with 8.5.	Pass
3	CIE in “unset mode”	Restore	-System is not restored until user choose to restore by using the correct user password (level 2).  -Event log recorded the tamper and unsetting events.	In accordance with 8.3.5 which refers to EN 50101-1:2006, 8.3.9.	Pass
4	CIE in “set mode”  NOTE To verify that multiple tamper signals or messages from the same source are recorded in the event log the number of times specified in EN 50131-1:2006, 8.10.	Apply the same tamper signal for 401ms once more than the maximum number of times specified in EN 50131-1:2006, 8.10.  Afterwards repeat step 3.	TM40: Event log logged the number of alarms set in section [3114]  See Note 1  ATS & ARC (See ATS report #100803903MIN-012).	The number of tamper alarms from the same source shall comply with 50131-1: 2006, 8.10.  The number of events recorded from a single source shall be limited to at least 3 and a maximum of 10 during any set or unset period.	Pass
5	CIE in “unset mode”	Apply tamper signal for 401 ms	TM40: Displays Trouble under the info icon. Depressing the info icon displays Zone Tamper Zone 002  -Internal siren did not operate  - Zone 002 tamper logged in event log  ATS & ARC (See ATS report #100803903MIN-012).	As defined in 8.9 notification (grade dependent, see EN 50131-1:2006, Table 7) shall occur within the time specified by EN 50131-1:2006, 8.9.  The logging shall be in accordance with 8.10.	Pass

## Appendix A – Test Records

11.4.3 (Table 15): Processing of tamper signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
6	CIE in “unset mode”  NOTE To verify that multiple temper signals or messages from the same source are recorded in the event log the number of times specified in EN 50131-1:2006, 8.10.	Apply the same tamper signal/message for 401ms once more than the maximum number of times specified in EN 50131-1:2006, 8.10.  Afterwards repeat step 3.	TM40: Event log logged the number of alarms set in section [3114]  See Note 1  ATS & ARC (See ATS report #100803903MIN-012).	The number of tamper alarms from the same source shall comply with 50131-1: 2006, 8.10.  The number of events recorded from any single source shall be limited to at least 3 and a maximum of 10 during any set or unset period.	Pass
7	CIE in “set mode”.  NOTE to verify that if multiple tamper signals are applied, at least one is processed correctly.	Apply tamper signals or messages equivalent to 5% of the maximum alarm point capacity of the CIE or 5 (whichever is the greater) within 1 second.	TM40: displays the last 3 tamper zones detected. Depressing the down arrow displays the remaining 3 tamper zones.  All 6 tamper zone alarms in event log.  ATS & ARC (See ATS report #100803903MIN-012).	At least one tamper signal or message shall be processed in accordance with 8.4.1.3 and 8.9.	Pass
8	CIE in “set mode” (with more than one tamper alarm condition)	Unset the CIE	User Code (level 2) entered.  -Event log recorded and reported unset - tamper condition during unsetting recorded  -Alarm memory still present  - System unsetting by user acknowledgement	Indications shall comply with 8.5.1.1.	Pass

## Appendix A – Test Records

11.4.3 (Table 15): Processing of tamper signals or messages – Security Grade 3					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
9	CIE in “unset mode”	Restore all the conditions.	- User code (level 3) restored system	In accordance 8.3.5 which refers to EN 50131-1:2006, 8.3.9,  All tampers shall be restored by user access level 3 for Grade 3.	Pass
<p>Note 1: The Auto Zone Shutdown feature was enabled for all zones. The Auto Zone Shutdown of section [3114] has a default value of 010. Tamper was set as follows: Section [3033]: (**45*7*); Section [3034]: (***5*7*); Section [3035]: (123*5**8). The tamper switch for the EVO192 Control panel was connected to Z8 on the ZX8 8-Zone Expansion Board. The ZX8 was set as follows: [4003]: (34930B06), Section [001]: (1*****)</p> <p>Note 2: Tamper was set as follows: Section [3033]: (***45*7*); Section [3034]: (***5*7*); Section [3035]: (123*5**8). The tamper switch for the EVO192 Control panel was connected to Z8 on the ZX8 8-Zone Expansion Board. The ZX8 was set as follows: [4003]: (34930B06), Section [001]: (1*****)</p>					

## Appendix A – Test Records

**EN 50151-3 Section 11.4.4 – Functional tests: Processing of fault signals or messages**

To demonstrate the ability of the CIE to:

- 1) receive and process a fault signal or message, within the processing timing requirements, when the CIE is in the set, and the unset conditions;
- 2) provide indication(s) and notification(s);
- 3) correctly record the event(s) in the event log;
- 4) restore in accordance with 8.3.5.

11.4.4 (Table 16): Processing of fault signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
	GENERAL CONDITION  The CIE is in the condition described in the steps below with all inputs and outputs in normal condition.	An EPS fault signal or message should be applied only where specifically stated.	GENERAL MEASUREMENT -Record the condition of the indications and notifications of the CIE and any associated user input devices. -Time when signal/message applied -Time when notification Occurs -Record the event log	GENERAL CRITERIA Processing shall be in accordance with EN 50131-1:2006, Table 7 and 8.4.1.  The indications and notifications shall be in accordance with EN 50131-1:2006, Tables 8, 9 and 10.	—
1	CIE in “set mode”	Apply fault signal for 10.1 seconds.	1. AC Failure  Detected within 2 seconds.  TM40: “Info” icon is highlighted in yellow. “Troubles” is displayed on the screen. Depressing “Info” indicates AC Failure.  TM40: Event log recorded the AC Failure Trouble, AC Failure Trouble Restored, time, and date.  See Note 1	Notification shall occur within the same time specified by EN 50131-1:2006, 8.9.  (Shall be notified within 10 seconds)  The logging shall be in accordance with 8.10.	Pass
			2. Battery fault  TM40: Detected in 4 seconds.		Pass

## Appendix A – Test Records

11.4.4 (Table 16): Processing of fault signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
			<p>3. Disconnect Combus communication wire from ZX8 8-zone expansion board</p> <p>TM40: Detected in 28 seconds. : “Info” icon is highlighted in yellow. “Troubles” is displayed on the screen. Depressing “Info” indicates “Communication Bus” trouble</p> <p>TM40: Event log indicates bus fault, serial number, date, time, bus fault restored, serial number, date, time.</p>		Pass
			<p>4. Disconnect EOL on Bell terminal</p> <p>Detected within 2 seconds.</p> <p>TM40: “Info” icon is highlighted in yellow. “Troubles” is displayed on the screen. Depressing “Info” indicates “Bell missing”</p>		Pass
2	CIE in “set mode” (with fault condition)	Unset the CIE	Access Code Level 2 entered and system was unset (disarmed). Fault is displayed as trouble.	Indications shall comply with 8.5.	Pass
3	CIE in unset mode“	Restore	-Fault is restored by removing the fault condition. A User Code level 3 restores the system.	Indications shall be in accordance with 8.3.5 which refers to EN 50131-1:2006, 8.3.9.	Pass

## Appendix A – Test Records

11.4.4 (Table 16): Processing of fault signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
4	CIE in “set mode”	Apply same fault signal or message for 10.1 seconds once more than the maximum permitted by EN 50131-1: 2006, 8.10.  Afterwards,repeat step 3.	TM40: Event log logged the number of alarms set in section [3114]	The number of fault alarms recorded from the same source shall be specified in EN 50131-1:2006, 8.10.  The number of events recorded from a single source shall be limited to at least 3 and a maximum of 10 during any set or unset period.	Pass
5	CIE in “unset mode”	Apply fault signal or message for 10.1 seconds.	Verified: - AC loss - Battery fault - Interconnection fault - Bell Terminal EOL	Panel indications mandatory: -AC loss -Battery fault -Interconnection fault -Bell Missing Fault Siren not allowed	Pass
6	CIE in “unset mode”  NOTE To verify that repetitive fault signals or messages are recorded in the event log as required by EN 50131-1:2006, 8.10.	Apply same fault signal or message for 10.1 seconds once more that the maximum permitted by EN 50131-1:2006, 8.10  Afterwards repeat step 3	TM40: Event log logged the number of alarms set in section [3114]	The number of fault alarms recorded from the same source shall be as specified in EN 50131-1:2006, 8.10.  The number of events recorded from any single source shall be limited to at least three and a maximum of 10 during any set or unset period	Pass



## Appendix A – Test Records

11.4.4 (Table 16): Processing of fault signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
7	CIE in “set mode”. NOTE To verify that if repetitive fault signals or messages are applied, at least one is processed correctly.	Apply 5 faults signals or messages (or the maximum possible number the EUT can recognize if less than 5) within 1 second.	All 5 fault signals were processed.	At least one fault signal or message shall be processed in accordance with 8.4.1.2 and 8.9.	Pass
8	CIE in “set mode” (with more than one alarm condition)	Unset the CIE	-The faults are displayed	Indications shall comply with 8.5.	Pass
9	CIE in “unset mode”	Restore all conditions	-Fault is restored by removing the fault condition. A User Code level 3 restores the system.	In accordance with 8.3.5 which refers to EN50131-1:2006, 8.3.9.	Pass
10	CIE in “set mode”	Apply at least one of each intruder, hold-up, tamper, and fault signals or messages equivalent to 5% of the maximum alarm point capacity of the CIE or 5 (whichever is the greater) within 1 second.	-8 events signals were processed and logged at the correct time.	Notification should be in accordance with 8.4.1.  All the conditions shall be correctly identified and logged in the event log at the correct time.	Pass

## Appendix A – Test Records

11.4.4 (Table 16): Processing of fault signals or messages					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
11	CIE in “unset” mode. Enable EPS Fault notification delay required by 8.6	Apply “EPS fault” signal or message.	<p>Detected within 2 seconds.</p> <p>TM40: “Info” icon is highlighted in yellow. “Troubles” is displayed on the screen. Depressing the info icon displays AC Failure</p> <p>TM40: Event log recorded the AC Failure Trouble, AC Failure Trouble Restored, time, and date.</p> <p>See Note 1 except the delay and restore were set to 060 which is 1 hour.</p> <p>See Note 2</p>	Notification of the fault shall be delayed as required by 8.6.	Pass
12	As step 11, during delay period	Remove “EPS fault” signal or message.	AC Failure in event log after 1 hour of AC Power loss.	Notification shall be cancelled according to 8.6.	Pass
<p>Note 1: Power Failure Report Delay - Section [3058] was set to (001). The default is (030). The Power Failure Restore Report Delay – Section [3060] was set to (001). The default is (030).</p> <p>Note 2: ATS &amp; ARC (See ATS report #100803903MIN-012).</p>					

## Appendix A – Test Records

**EN 50151-3 Section 11.5 – Access level**

To demonstrate the ability of the CIE to provide up to four levels of access and verify the relevant access to the functions and controls

11.5.1 (Table 20): Access Level					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
1	The CIE and all necessary ACE mounted according to the manufacturer specifications.	At access level 1 attempt to operate all the functions and controls listed in 8.3.6, 8.3.7, and 8.3.9 and in EN 50131-1:2006, Tables 2, 5, 6, and 8 and 8.3.10.	Record whether access is permitted  Access permitted according to tables 2, 5, 6, 8 and 8.3.10	Access is in accordance with 8.3.9 and EN 50131-1:2006, Tables 2, 5, 6, and 8	Pass
2	As above	Repeat as above for access level 2	As above  Access permitted according to tables 2, 5, 6, 8 and 8.3.10	As above	Pass
3	As above	Repeat as above for access level 3	As above  Record whether level 2 authorization for level 3 access is "until manually removed" or "required for each occasion"  Authorization by level 2 user not required. See EN 50131-1 clause 8.3.1 b) 4)	As above	Pass
4	As above	Repeat as above for access level 4	Level 4 access is only permitted at the Paradox Facility.	As step 3	N/A
5	CIE unset	Enter level 3 access code or key	Monitor outputs  Installer code access (level 3) is permitted without authorization of level 2 by using beep indication of the internal WD of the CIE.	Notified by internal WD and (Grade 2 and 3) remotely	Pass

## Appendix A – Test Records

11.5.1 (Table 20): Access Level					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
6	Perform action defined by manufacturer to silence WD, or allow to time out, as applicable	—	Monitor outputs and status  Installer access (level 3) is permitted without authorization of level 2 by using beep indication of the internal WD. The beeps stopped by timeout.	WD silenced. Level 3 access obtained	Pass
7	CIE set	Repeat steps 5 and 6	Monitor outputs and status.  - No access to system by installer access level 3 while system is set	No response, remains at level 1 access.	Pass

## Appendix A – Test Records

**EN 50151-3 Section 11.6 – Authorization requirements**

11.6 (Table 21): Test for disabling user input device by invalid keys					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
	GENERAL: The CIE shall be configured with its inputs and outputs in their normal condition, allowing the CIE to be set and alarms to be generated from at least 1 alarm point.	GENERAL: The steps 2, 4, 5, 6, and 7 shall be repeated in the "UNSET" mode of the CIE.			—
1	CIE unset	Enter a valid key and attempt to set CIE	Record status of CIE.	CIE set	Pass
2	CIE set	Enter a series of invalid keys according to Table 1 to attempt to initially disable the user input device.	Record status of CIE, disabling of user input device, tamper conditions, and event log.  Wrong user code 5 times entered (requirement is 10 max)  Wrong user code entered 1 more time indicated an Area in Lockout.  TM40: Locked for 15 min and can't be unlocked by any means  Event log indicates Area 1 Tamper Lock Out, date, and time.  Invalid user code not entered within 60 seconds is treated as an invalid code.	CIE should not change state, the user input device shall be disabled, the generation of tamper conditions and event log shall be in accordance with Table 1.	Pass

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11.6 (Table 21): Test for disabling user input device by invalid keys					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
3	CIE set	During the “disabling time” apply an alarm signal or message.	Record whether the alarm condition is processed.  TM40: Zone 1 in Alarm is displayed	The alarm generated during the disable period shall be processed in accordance with EN 50131-1:2006, Table 7 and 8.4.1.	Pass
4	CIE set	During the “disabling time” try to enter a valid key.	Record whether user input device responds to operation  TM40: Valid User Code entered. Display indicated Area in Lock Out	The CIE shall not change state.  The user input device shall remain disabled.	Pass
5	CIE set	When disabling time has expired, enter another series of invalid keys according to Table 4.	Record status of CIE, disabling of user input device, tamper conditions, and event log.	The CIE shall not change state and shall be in accordance with Table 4.	Pass
6	CIE set	During the “disabling time” try to enter a valid key.	Record whether user input device is available.  Same results as step 2.	The CIE shall not change state.  The user input device shall remain disabled.	Pass
7	CIE set	When disabling time has expired enter a valid key and attempt to change state of the CIE.	Record status of the CIE.	The CIE shall change state.	Pass
8	CIE unset	All steps repeated with CIE in unset mode trying to set using wrong code	-Same as steps 1-7, entering wrong code when trying to SET the system is just the same as trying to UNSET the system	Same as steps 1-7	Pass

## Appendix A – Test Records

11.6 (Table 21): Test for disabling user input device by invalid keys					P
Step	Test condition	Test procedure	Measurement	Pass criteria	Verdict
<p>number of combinations: at least 1,000,000, The valid codes created can are accepted to arm/disarm</p> <p>-All codes are 6 digits long exactly - Each digit can be 0-9 so the total number of options: <math>Z=10^6=1,000,000</math>. The EVO192 Control Panel is configured for a 4-digit user access code. Section [3033]: Options [2] and [3] which is the default.</p> <p>Codes combination:</p> <p>0000 to 9999 = 10,000</p> <p>00000 to 99999 = 100,000</p> <p>000000 to 999999 = 1,000,000</p> <p>Total = 1,110,000</p> <p>ATS &amp; ARC (See ATS report #100803903MIN-012).</p>					

## Appendix A – Test Records

**EN 50151-3 Section 11.7.1 – Operational tests: Setting Procedures**

11.7.1 (Table 23): Test of setting procedure				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
<u>Step 1</u> CIE is unset	Initiate exit procedure	Record the CIE conditions The CIE set and indicate accordingly.  Exit time should be configured to max 45 sec, as described in product documentation	The CIE shall set and indicate accordingly	Pass
<u>Step 2</u> CIE unset	Setting procedure initiated but prevented from completion “Fail to Exit” time expires	Record the CIE conditions  TM40: indicated Stay Armed since Zone 001 was not activated.	Incomplete exit condition indicated and/or notified, according to 8.3.3.3 CIE not Set No alarm notification	Pass
<u>Step 3</u> CIE unset	Start the setting procedure (exit time)	Record the CIE conditions  TM40: Exit Delay initiated.	The setting procedure shall be initiated, and indicated according to 8.3.3.2 and 50131-1, Tables 8 and 9	Pass
<u>Step 4</u>	Activate an exit route alarm point, during the exit time period	Record the CIE conditions  No alarm notification during Zone 001 activation.	The activated alarm point shall not cause alarm notification	Pass
<u>Step 5</u>	Ensure the alarm point is no longer in the activated condition. Allow the setting procedure to complete, or complete setting procedure as appropriate to method	Record the CIE conditions  TM40: Indicates Armed.	The setting procedure shall be completed. CIE is set, in accordance with 8.3.3.2.	Pass
<u>Step 6</u> CIE unset. Exit procedure initiated. Exit route alarm point activated	Exit route alarm point remains activated  Exit time or “Fail to Exit” time expires	Record the CIE conditions  No alarm notification during Zone 001 activation.	Incomplete exit condition indicated and/or notified, according to 8.3.3.3  CIE not set  No alarm notification	Pass
Note 1: Zone 001 on the EVO192 Control Board was set up as follows: Section [0101]: (11) (1*****); Section [3121]: (1*****). Entry Delay 1, Partition 1, Auto Zone shutdown enabled, Partition 1 options switch to stay arm if no delay zone opened.				



## Appendix A – Test Records

**EN 50131-3 Section 11.7.2 – Operational tests: Prevention of setting and overriding of prevention of setting procedures**

11.7.2 (Table 24): Prevention of setting procedures				P
Test condition	Test procedure	Measurement	Pass/Fail criteria	Result
GENERAL CONDITION: The CIE is in "unset" condition For the purpose of this series of tests The keys and/or codes shall be selected to have the necessary authorizations for "inhibit" and "override" functions.		GENERAL: Record the CIE condition	GENERAL CRITERIA When the CIE fails to set, means shall be provided to indicate or notify. If the indication of the set state is provided, it shall be time-limited according to EN 50131-1:2006, 8.3.7. The logging shall be in accordance with 8.10.	—
Complete the following series of tests for each setting method given in the manufacturer's documentation and for each condition specified in EN 50131-1 :2006, Table 4.				
<u>Step 1</u> Alarm point (not allocated to an exit route) in active condition CIE is unset	Try to set the system	Record the CIE condition.  Unable to set	The setting procedure shall be in accordance with 8.3.3 and EN 50131-1:2006, Table 4.	Pass
<u>Step 2</u> Alarm point (not allocated to an exit route) in active condition Setting prevented (see step 1) CIE is unset	Inhibit the active alarm point (if function provided) - see 8.3.6. Try to set the system	Record the status of the CIE.  Able to set by selecting Bypass	The setting procedure shall continue in accordance with EN 50131-1:2006, Table 4 and be completed according to manufacturer's instructions.	Pass
<u>Step 3</u> The CIE in "unset" condition. Tamper signal or message applied to the CIE	Try to set the system	Record the status of the CIE.  Unable to set if Section [3034]: Option [8] is disabled which is the default	The setting procedure shall be prevented in accordance with EN 50131-1 :2006, Table 4	Pass

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11.7.2 (Table 24): Prevention of setting procedures				P
Test condition	Test procedure	Measurement	Pass/Fail criteria	Result
<u>Step 4</u> Setting prevented (see step 3) CIE unset	Override the tamper (if function provided) – see EN 50131-1:2006 Table 5. Try to set the system	Record the status of the CIE.  Able to set if Section [3034]: Option [8] is enabled.	The setting procedure shall continue in accordance with EN 50131-1:2006, Table 4 and be completed according to manufacturer's instructions.	Pass
<u>Step 5</u> The CIE is in "unset" condition Hold-up signal or message applied to the CIE		Record the CIE condition.  Unable to set	The setting procedure shall be prevented in accordance with EN 50131-1:2006, Table 4.	Pass
<u>Step 6</u> Setting prevented (see step 5) CIE unset	Inhibit the hold-up device (if function provided) - see 8.3.6. Try to set the system.	Record the CIE condition  No inhibit function provided.	The setting procedure shall continue in accordance with EN 50131-1:2006, Table 4 and be completed according to manufacturer's instructions.	N/A
For movement detector masking, movement detector range reduction and each fault signal or message specified in EN 50131-1 :2006, Table 4 repeat steps 7 and 8.				
<u>Step 7</u> The CIE is in "unset" condition. Apply fault signal or message to CIE.	Try to set the system	Record the CIE condition.  Masking is required for security grade 3. Range Reduction is optional for grade 3. It will need to be evaluated if it is a provided function. Motion Detectors not provided.	The setting procedure shall continue in accordance with EN 50131-1:2006, Table 4	Not evaluated
<u>Step 8</u> Setting prevented (see step 7) CIE unset	Override the setting prevention (if function provided) – see 8.3.6.	Record the CIE condition.  Same as above	The setting procedure shall continue in accordance with EN 50131-1:2006, Table 4 and be completed according to manufacturer's instructions.	Not evaluated

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**EN 50151-3 Section 11.7.4 – Operational tests: Unsetting procedures**

11.7.4 (Table 25): Unsetting procedures				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
Step 1 CIE Set	in a normal condition with no alarms or tamperers activated. Try to manually unset the system	Record the CIE condition  TM40: Indicates Disarmed	The unsetting procedure shall be completed.	Pass
Step 2 CIE Set	Alarm activated (not on entry route) Unset CIE  Try to manually unset the system	Record the CIE condition  TM40: Indicates Disarmed	The unsetting procedure shall be completed. Notification, indication and event recording shall comply with 50131-1:2006, Tables 7, 8, 9 and 22	Pass
For CIE with entry route facility, complete the following series of tests for each unsetting method provided in the manufacturer's documentation.				
Step 3 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition Record indication  Entry time should be configured to max 45 sec, as described in product documentation  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated. Indication shall be in accordance with 50131-1, 8.3.8.2 and Tables 8 and 9 and recorded in the event log in accordance with EN 50131-1, Table 22.	Pass
Step 4 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated	Pass
Step 5	Generate an intruder alarm from an entry route alarm point	Record the CIE condition  TM40: Indicates Entry Delay on Zone 1. No alarm.	An intruder alarm shall not be notified	Pass
Step 6	Do not complete the unsetting procedure (let the entry time expire).	Record the CIE condition  TM40: Indicates Alarm. Internal sirens annunciate. Bell terminal switches from 0V to 12Vdc.	An alarm condition shall be notified according to 50131-1, 8.3.8.2	Pass

## Appendix A – Test Records

11.7.4 (Table 25): Unsetting procedures				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
Step 7 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition Record indication  Entry time should be configured to max 45 sec, as described in product documentation  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated. Indication shall be in accordance with 50131-1:2006, 8.3.8.2 and Tables 8 and 9.	Pass
Step 8	Generate an intrusion alarm from an entry route alarm point, and complete the entry procedure.	Record the CIE condition Record indication and notification  TM40: Indicates Disarmed  All events recorded in event log.	CIE is unset. The intruder alarm shall not be processed. A correct entry procedure shall be indicated as per 50131-1:2006, 8.3.8.2 and Tables 8 and 9, and recorded in the Event log in accordance with 50131-1:2006, Table 22	Pass
Step 9 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated	Pass
Step 10	Generate a tamper alarm from an entry route alarm point	Record the CIE condition  TM40: Indicated Zone 001 Tamper. Internal sirens annunciate. Bell terminal switches from 0V to 12Vdc.	The tamper alarm shall be notified	Pass
Step 11 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated	Pass
Step 12	Generate an intrusion alarm from a non-entry route alarm point	Record the CIE condition  TM40: Indicates Alarm Zone 2. Internal sirens annunciate. Bell terminal switches from 0V to 12Vdc.	Indication or Warning Device shall be activated in accordance with EN 50131-1:2006, 8.3.8.2	Pass

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11.7.4 (Table 25): Unsetting procedures				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
13 Unsetting is proceeding	Wait for expiry of time programmed or specified by manufacturer after indication or internal WD activated  MINIMUM time is 30 s	Record the CIE condition  TM40: Indicates Entry Delay  Internal sirens are not activated. Only beeping to indicate entry delay countdown. Bell output terminal measures 0Vdc.	Were remote notification devices are connected, ensure this is not activated prior to the completion of the delay required by EN 50131-1, 8.3.8.2	Pass
14 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition  TM40: Indicates Entry Delay  Internal sirens are not activated. Only beeping to indicate entry delay countdown. Bell output terminal measures 0Vdc.	The unsetting procedure shall be initiated	Pass
15	Do not complete the unsetting procedure (let the entry time expire)	Record the CIE condition  TM40: Indicates Alarm after 45 seconds.  Internal sirens activated. Bell output terminal measures 12Vdc.	The alarm shall be notified in accordance with EN 50131-1:2006, 8.3.8.2	Pass
16 CIE set	Manually start the unsetting procedure (entry time)	Record the CIE condition  TM40: Indicates Entry Delay	The unsetting procedure shall be initiated	Pass
17	Generate an alarm from a non entry route alarm point	Record the CIE condition  TM40: Indicates Alarm Zone 2. Internal sirens annunciate. Bell terminal switches from 0V to 12Vdc.	Indication or Warning Device shall be activated in accordance with EN 50131-1, 8.3.8.2	Pass

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11.7.4 (Table 25): Unsetting procedures				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
18	Complete the unsetting procedure before the notification delay expires, see paragraph 3 of 50131-1:2006, 8.3.8.2.	Record the CIE condition  TM40: Indicates Entry Delay. Internal sirens stop beeping. Bell terminal measures 0Vdc.	The indicator or warning devices shall be restored and remote notification shall not take place The CIE shall be unset	Pass

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**EN 50151-3 Section 11.7.7 – Operational tests: Test functions**

11.7.7 (Table 28): Verification of test functions			P
Test procedure	Measurement	Pass/Fail criteria	Result
<u>Step 1</u> With the system unset and in the normal condition use level 2 access means to enter detection test mode (8.3.8).	Apply at least 5 intruder signals or messages as specified in 8.9. Record the identity of the alarm points activated.  Motion Detectors and Intruder Detectors were not provided.	The CIE shall provide means to confirm that each of the activations has been detected.	Not evaluated
If the CIE includes "soak test" function (8.3.9) – No soak test function found			
<u>Step 2</u> Use level 3 access means to place at least 2 alarm points on soak test.	Record alarm points so programmed and, where removal is automatic, time period for test.	—	—
<u>Step 3</u> Set the CIE.	Record indications during the setting procedure.	During the setting procedure, an indication shall be provided that alarm points are being soak tested, in accordance with 8.3.9.	N/A
<u>Step 4</u> Whilst CIE is set, activate the alarm points that are being tested.	Record the identity of the alarm points activated and the condition of indication and notification outputs of the CIE.	The activations shall not be notified.	N/A
<u>Step 5</u> Unset the CIE.	Record the condition of indication outputs and event logs.	The activations shall be indicated at the time of unsetting in accordance with 8.5. Logging shall be in accordance with 8.3.9 and 8.10.	N/A
<u>Step 6</u> Where removal from test mode is automatic:	Repeat steps 3 and 4 one day before test period is due to end.	Test shall remain active.	N/A
<u>Step 7</u>	Repeat steps 3 and 4 after test period is due to expire.	There shall be no indication at step 3 and an alarm shall be notified and indicated at step 4.	N/A
<u>Step 8</u> Where removal from test mode is not automatic.	Use level 3 access means to remove the alarm points from soak test.		N/A

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**EN 50151-3 Section 11.7.9 – Process monitoring**

11.7.9 (Table 29): Process monitoring				P
Step	Test procedure	Measurements	Pass Criteria	Verdict
<u>Step 1</u> The CIE shall be in the unset mode, with all inputs and outputs in normal condition.	Induce a failure of the processing function.	Record the status of process monitoring output	In grade 3 and 4, the output shall change states within 40 seconds unless the CIE has successfully restarted.	Pass, status changes within 5 seconds. TM40: "Control Panel Communication Error"
<u>Step 2</u>	Remove failure mode and apply the reduced functional test	Record the status of the CIE, the event log and the indication.	In grade 3 and 4, if the attempt to restart the processor is successful, the CIE shall resume in its previous operating mode, the reduced functional test shall be completed successfully and a CIE fault shall be indicated and recorded in the event log.	Pass, System restarts after 2 minutes, 45 seconds. System returned to unset mode. Event log: TM40: "Special Events, Warm start (watchdog)."
<u>Step 3</u> Repeat steps 1 & 2 as above for "set mode"	Repeat as above	As above	As above	Pass, Same results as above. System is restarted in "set mode"



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**EN 50151-3 Section 11.7.10 – Availability of Indications**

11.7.10 (Table 30): Availability of Indications				P
Step	Test procedure	Measurements	Pass Criteria	Verdict
<u>Step 1</u> The CIE shall be in the unset mode, with all inputs and outputs in normal condition.	Induce a fault requiring mandatory indication according to EN 50131-1:2006, Table 8.	Record indications.  TM40: Indicates Bell Missing	Alert indication present	Pass
<u>Step 2</u> Gain access to CIE at level 2.	View information displayed.	Record indications.  Event log records Bell Missing Trouble, date, and time.	Correctly indicates fault condition generated.	Pass
<u>Step 3</u> Return to level 1 access in accordance with manufacturer's specification - using automatic (timed) response if provided.	View information displayed.	Record indications.  TM40: Indicates Bell Missing	Alert indication present If automatic (timed) action, it is performed within time limit specified by manufacturer.	Pass
<u>Step 4</u> Remove the fault condition applied at step 1	View information displayed.	Record indications.  TM40: Indicates Bell Missing	Alert indication present	Pass
<u>Step 5</u> Gain access to CIE at level 2.	View information displayed.	Record indications.  Fault restores with level 2 user code.	Indication of the fault condition remains available.	Pass
<u>Step 6</u> Return to access level 1 and restore.	View information displayed.	Record indications.  TM40: No Indication	No indication	Pass
Note 1: Trouble Latch needs to be enabled. Section [3033] Option [6].				

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11.8.2	TABLE: Tamper protection (Security Grade 2/3)			Pass
Component	Type	Impact (J)	Observations	Results
8x10 Enclosure containing: EVO192, ZX8, PGM4 (Security Grade 3)	CIE	1.0	Passed reduced functional tests Before and After, and no unintentional signals During tests	Pass
TM40 (Security Grade 3)	CIE	1.0	Passed reduced functional tests Before and After, and no unintentional signals During tests	Pass
RTX3 (Security Grade 2)*	ACE Type B	1.0	No change in status	Pass
Supplemental information:				
*Test data taken from report 100546807MIN-002				

11.8.3: Tamper detection - Access to the inside of the housing (Security Grade 3)				P
Component	Action	Access possible?	Observations	Results
EVO192 Control Panel	Open by normal means	Key Required	It is the serial number of the ZX8 board inside the EVO192 Control Panel that the tamper switch is connected to.  TM40: Display indicates System Alarm, Module Tamper 11:05. The event log indicated Special Alarm, Module Tamper Alarm Aug 19 11:09.	P
	1 mm steel rod	Access was possible through the top, side, and bottom of enclosure	Unable to defeat the tamper switch	P
	5 mm x 0.5 mm x 300 mm flat bar	Access was possible through the vent in the top of the enclosure	Unable to defeat the tamper switch	P
	Steel wire of tensile strength 650-825 MPa and dimensions 1 mm dia x 300 mm		Unable to defeat tamper switch using 1 mm rod 15296	P

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11.8.3: Tamper detection - Access to the inside of the housing (Security Grade 3)				P
Component	Action	Access possible?	Observations	Results
TM40 Touch Screen	Open by normal means	No	TM40: "Trouble" under Info icon. "Module Tamper"	P
	1 mm steel rod	Access possible through slots on the sides	Not able to defeat tamper switch	P
	5 mm x 0.5 mm x 300 mm flat bar	No	Not able to defeat tamper switch	P
	Steel wire of tensile strength 650-825 MPa and dimensions 1 mm dia x 300 mm	No	Not able to defeat tamper switch	P
RXT3 Enclosure (security grade 2)*	Open by normal means	Yes	Can lift cover to create a 6.5mm opening.	P
	2.5 mm steel rod	Yes, through multiple holes	Cannot override tamper	P
	5 mm x 0.5mm x 300 mm flat bar	Yes	Cannot override tamper	P
Supplemental information: *Test data taken from report 100546807MIN-002				

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**EN 50151-3 Section 11.8.4 – Tamper security tests: Tamper detection - Removal from mounting**

**Method:** Lift the EUT from the flat surface in a perpendicular direction to the mounting surface by a distance exceeding that specified in 8.7.2.2, whilst monitoring the tamper signal or message output.

Attempt to slide a test blade as defined in 8.7.2.2 to defeat the removal from mounting detection before and during the above test.

Attempt to use pliers as specified in 8.7.2.2 to defeat the removal from mounting detection before and during the above test.

Attempts shall be restricted to 5 min per tool. If the test fails, it should be repeated and a further failure within 4 further attempts shall result in the overall test failing.

**To Pass:** The tamper signal or message shall have been generated within 11 s of the EUT exceeding the distance specified in 8.7.2.2.

It shall not have been possible to prevent the generation of a tamper signal or message using the test blade or pliers.

11.8.4: Tamper detection – Removal from mounting (Security Grade 3)					P
Component	Maximum lift distance	Measured lift distance	Defeated with blade or pliers*?	Time for tamper signal	Result / Comments
EVO192 Control Panel	5 mm	5 mm	No	Less than 2 seconds	P
TM40 Touch Screen	5 mm	2.3 mm	No	Less than 2 seconds	P
Supplementary information:					

\* 2 screwdriver shanks, 5mm in diameter, 150mm in length were used to simulate the pliers. Verified with Item #5

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**EN 50151-3 Section 11.10 – Testing of I&HAS timing performance**

**Method:** With the system in set mode, trigger an intruder alarm event. Record the time before the notification output(s) become live.

**To Pass:** The time from triggering the event until notification takes place shall not exceed 20 s.

11.10: Testing of I&HAS timing performance			P
Action	Required time to notification	Measured time to notification	Results
Intrusion alarm	20 seconds	Less than 2 seconds	P
Supplemental information: Bell terminal on EVO192 board switched from 0Vdc to 12Vdc.			

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**EN 50151-3 Section 11.11 – Testing for interconnections**

**See EN 50131-1:2006 Section 8.8**

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**EN 50151-3 Section 11.12 – Event log**

11.12 (Table 31): Event Log				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
1	With the CIE unset and with no alarm condition, set the time and date.	Note the date and time.	—	—
2	With the system unset and in the normal condition enter an authorisation code at each access level.	Note the facilities accessible to each access level.  No facility for the user to alter or delete event log	There shall be no facility for a user to alter or delete the event log.	Pass
3	If the means of recording is cyclic: Fill the event log. With the system unset, Add one more mandatory even	Note the 2 oldest events before the final event is added. Note the oldest event after the final event is added.  The minimum permitted number of mandatory events has been preserved	Verify that minimum permitted number of mandatory events has been preserved	Pass
4	If the CIE has the facility to record non-mandatory events, then enter the appropriate number of mandatory events as defined in EN 50131-1 8.10. Fill the remainder of the event log with non-mandatory events Add one non-mandatory event	Note the mandatory events recorded in the event log.  Not mandatory events are not recorded	Verify that minimum permitted number of mandatory events has been preserved	Pass
5	Following the previous test add one mandatory event	Note the mandatory events recorded in the event log.  Not mandatory events are not recorded	Verify that the new mandatory event has been logged.	Pass
6	If memory retention component(s) are non-volatile (example; EEPROM): Check data supplied by manufacturer	EEPROM may keep the data for years	Verify that storage component(s) are non-volatile for the period required by 50131-1:2006, Table 21. 30 days required for grade 2	N/A

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11.12 (Table 31): Event Log				P
Step	Test Procedure	Measurements	Pass criteria	Verdict
7	If memory retention components are volatile (example; RAM): Remove EPS and APS from the system for the period required by 50131-1, Table 21. At the end of this period, reapply power and check the event log.	Record the contents of the event log before removal of power, and after power is restored.  Memory retention component is non-volatile EEPROM.	The contents of the event log shall not be lost or corrupted, except for the inclusion of event(s) caused by this test procedure. (EXAMPLE:- Mains failure)	N/A
8	In CIE with the facility to make a permanent record, follow manufacturer's instructions to make a permanent record	Note the event log and the events recorded on the permanent record  No such facility	The events displayed on the permanent record shall accurately reflect the event log, including date and time.	N/A
9	Verify the clock accuracy after 8 days of work	Tested for 12 days  Checked time on 8/15/11 at 10:51. Time was within 1 second of NIST atomic clock.	The accuracy shall be consistent with 50131-1:2006, 8.10. The timing shall be accurate to within +/- 10 min per annum. (No more than 50 sec drift in 30 days allowed)	Pass
Where the I&HAS stores event logs at the ARC, the manufacturer shall provide information or means to enable this function to be tested as follows:				
10	Check ability of CIE to send events to the SPT (Supervised premises transceiver). Generate an event at the CIE	Monitor the output to the SPT  ATS, ARC, and SPT were not part of evaluation	Verify that the generated events are sent to the SPT.	—
11	Check ability of CIE to indicate failure of transmission to ARC  Disable the SPT and generate a number of mandatory events in acc. to 50131-1, 8.10, to be reported to ARC	Record the indication and notification at the CIE  ATS, ARC, and SPT were not part of evaluation	Verify that a fault is indicated at the CIE (Grade 1).	—
Note 1: (See ATS report #100803903MIN-001 and 100803903MIN-012), SPT was not part of evaluation				



## Appendix A – Test Records

11.14	TABLE: Environmental and EMC tests (Class II components)			P
Test Conditions	Reduced functional test results			
	Before	During	After	Result
Dry Heat (Operational) Conditioned at 55°C for 16 hours	P	P	P	P
Cold (Operational) Conditioned at -10°C for 16 hours	P	P	P	P
Damp Heat, Steady State (Endurance) Conditioned at 40°C & 93%RH for 21 days	P	-	P	P
Damp Heat, Cyclic (Operational) Conditioned at 25°C & 95%RH for 9 hours, then 40°C and 93%RH for 9 hours. Repeat the cycle again	P	P	P	P
Impact IK06 (1.0J) 3 impacts*	P	Monitor	P	P
Mechanical Shock (Operational) Pulse duration 6 ms, Peak acceleration = 1000 – (200M), Number of shock directions = 6, Number of pulses per direction = 3	P	Monitor	P	P
Vibration, Sinusoidal (Operational) Frequency range: 10-150 Hz Acceleration: 5 m/s Number of axes: 3 Sweep rate: 1 octave per minute Number of sweep cycles/axis/functional mode: 1	P	Monitor	P	P
EMC	P**	Monitor	P**	P**
Supplementary information: "P" for result of reduced functional test indicated that the results are identical to those in Clause 11.3 and Table 12. "Monitor" indicates no errant signals or messages occurred during the conditioning period. *Tested to Security grade 3 according to table 8.7 in EN 50131-3				

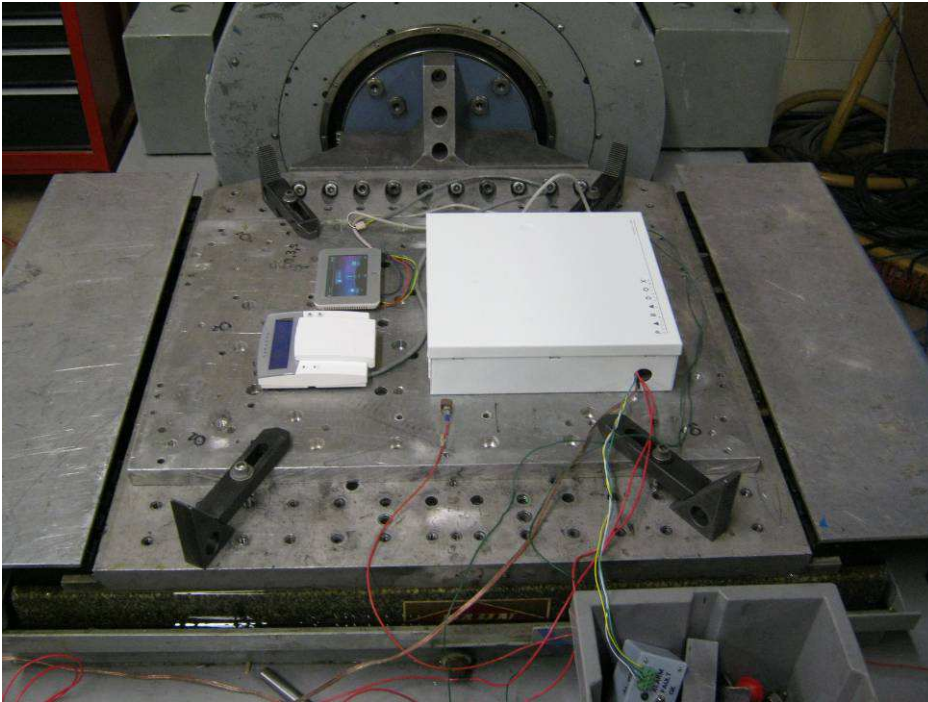
\*\* For EMC testing, see the following Nemko reports: 90256-1TRFEMC, 90256-2TRFEMC, 88429-6TRFEMC

## Appendix A – Test Records

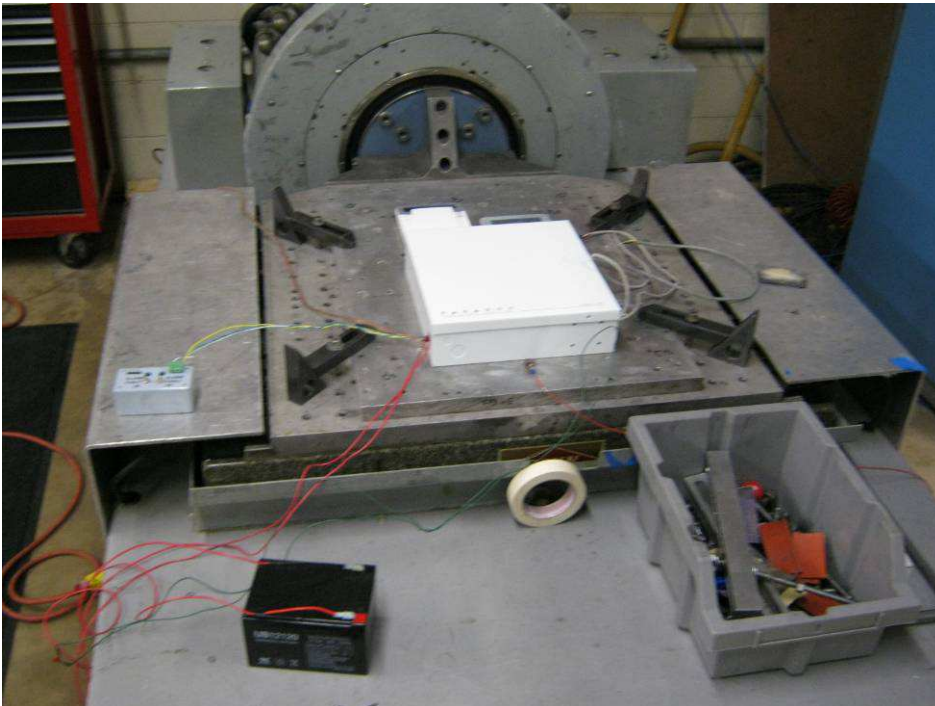
11.14	TABLE: Environmental tests (Class II components) Dialer and PGM4			P
Test Conditions	Reduced functional test results			Result
	Before	During	After	
Dry Heat (Operational) Conditioned at 55°C for 16 hours	P	P	P	P
Cold (Operational) Conditioned at -10°C for 16 hours	P	P	P	P
Damp Heat, Steady State (Endurance) Conditioned at 40°C & 93%RH for 21 days	P	P	P	P
Damp Heat, Cyclic (Operational) Conditioned at 25°C & 95%RH for 9 hours, then 40°C and 93%RH for 9 hours. Repeat the cycle again	P	P	P	P
Impact IK06 (1.0J) 3 impacts**	P	P	P	P
Mechanical Shock (Operational) Pulse duration 6 ms, Peak acceleration = 1000 – (200M), Number of shock directions = 6, Number of pulses per direction = 3	P	P	P	P
Vibration, Sinusoidal (Operational) Frequency range: 10-150 Hz Acceleration: 5 m/s Number of axes: 3 Sweep rate: 1 octave per minute Number of sweep cycles/axis/functional mode: 1	P	P	P	P
EMC (Dialer only)	-	-	-	P*
<p>Supplementary information: “P” for result of reduced functional test indicated that the results are identical to those in Clause 6.1. “Monitor” indicates no errant signals or messages occurred during the conditioning period.</p> <p>*See NEMKO report 204337-1TRFEMC</p> <p>**Housed in an enclosure that contains Security grade 3 equipment (tested to the higher grade)</p> <p>Also includes environmental testing for RTX3. RTX3 originally tested in report 100546807MIN-002</p>				

## Appendix A – Test Photos

### Vibration test setup

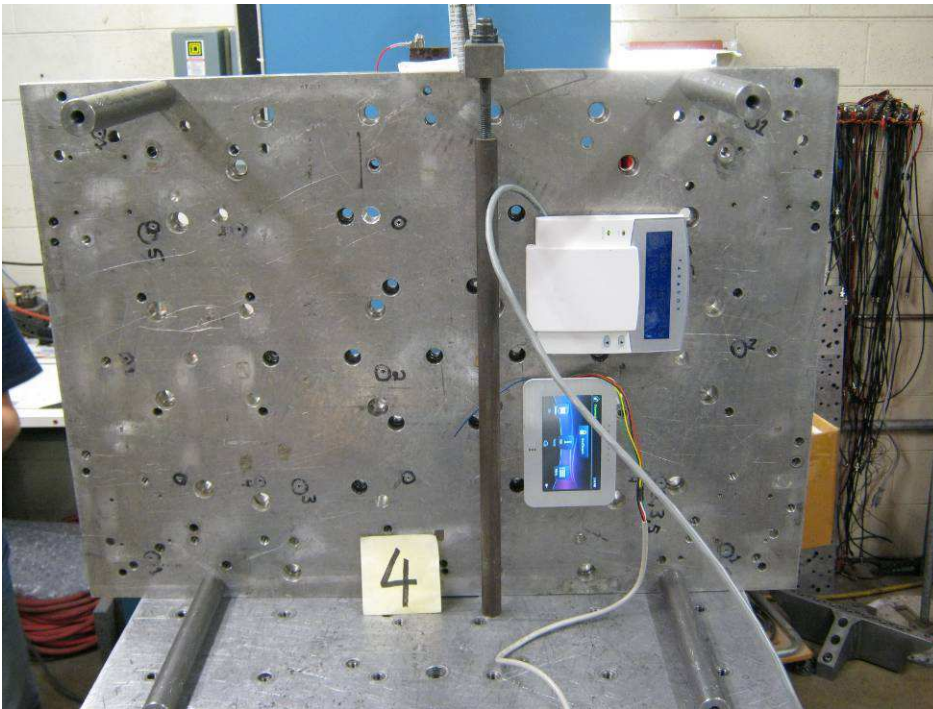


### Vibration test setup



## Appendix A – Test Photos

### Shock test setup for TM40



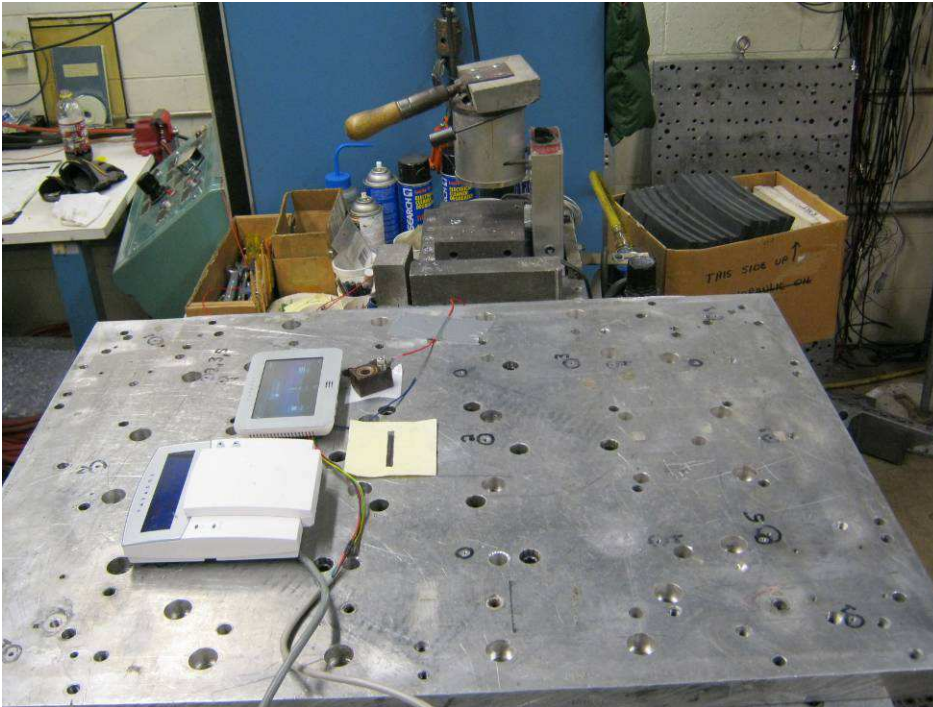
### Shock test setup for TM40





Appendix A – Test Photos

Shock test setup for TM40



Shock test setup for TM40

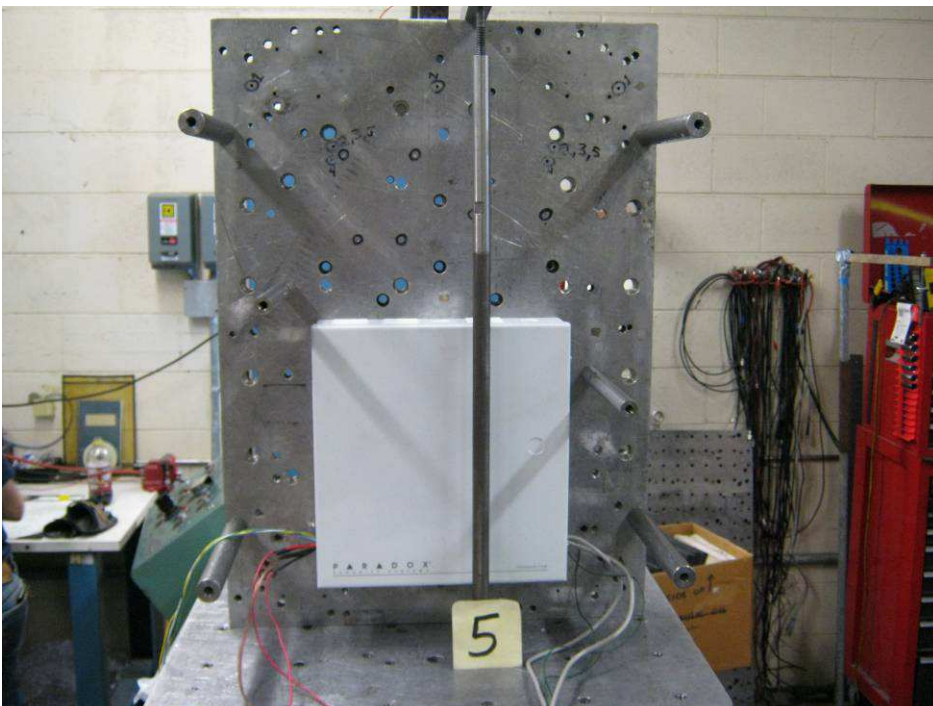


Appendix A – Test Photos

Shock test setup for EVO192 and ZX8



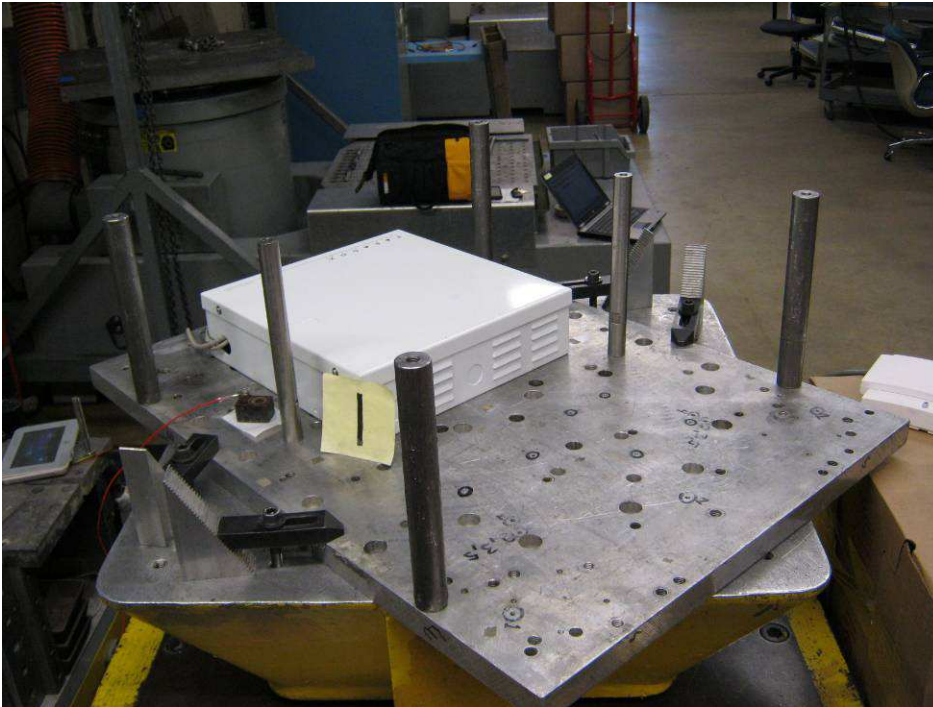
Shock test setup for EVO192 and ZX8



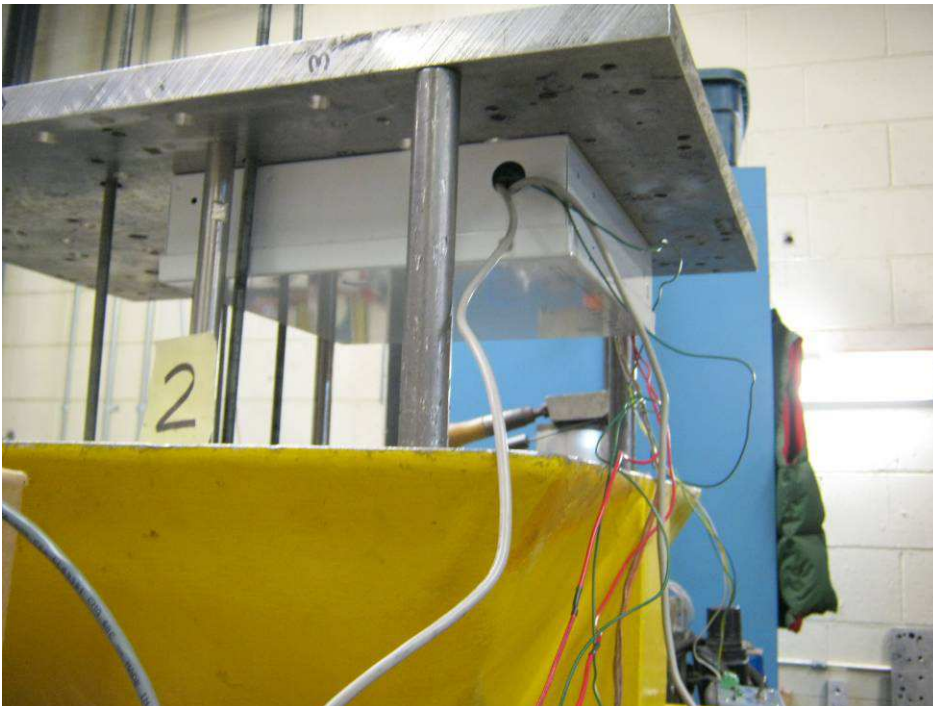


## Appendix A – Test Photos

### Shock test setup for EVO192 and ZX8



### Shock test setup for EVO192 and ZX8



## Appendix B - Photos

Photo 1: EVO192 Control Panel and TM40 Touch Screen – External View

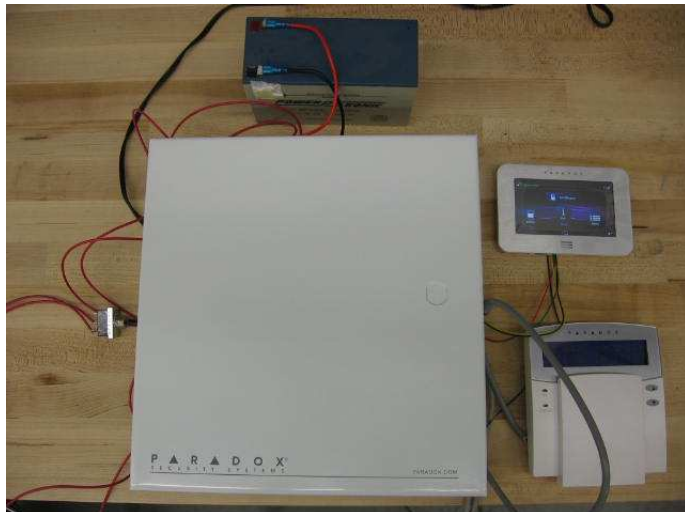
Photo 2: EVO192 Control Panel – Internal View  
(EVO192 Control Board, ZX8 8-Zone Expander Board, Tamper Switch)

Photo 3: EVO192 Control Board





## Appendix B - Photos

Photo 4: ZX8 8-Zone Expansion Board

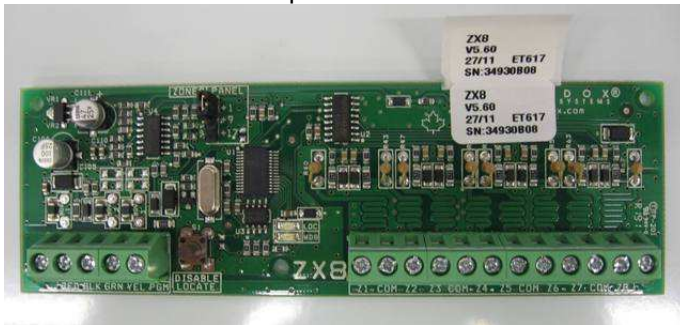


Photo 5: TM40 Touch Screen – Front View



Photo 6: TM40 Touch Screen – Rear View



## Appendix B - Photos

Photo 7: TM40 Touch Screen – Internal View

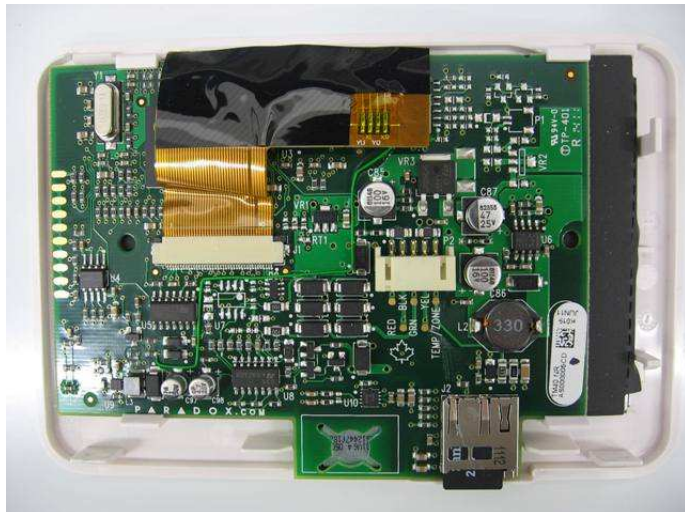


Photo 8: TRP 40/16/18 Transformer and LC-RD1217P Battery with Enclosure



Photo 9: TRP 40/16/18 Transformer



Appendix B - Photos

**Photo 10: PGM4**



**Photo 11: EVO192 Dialer Components**



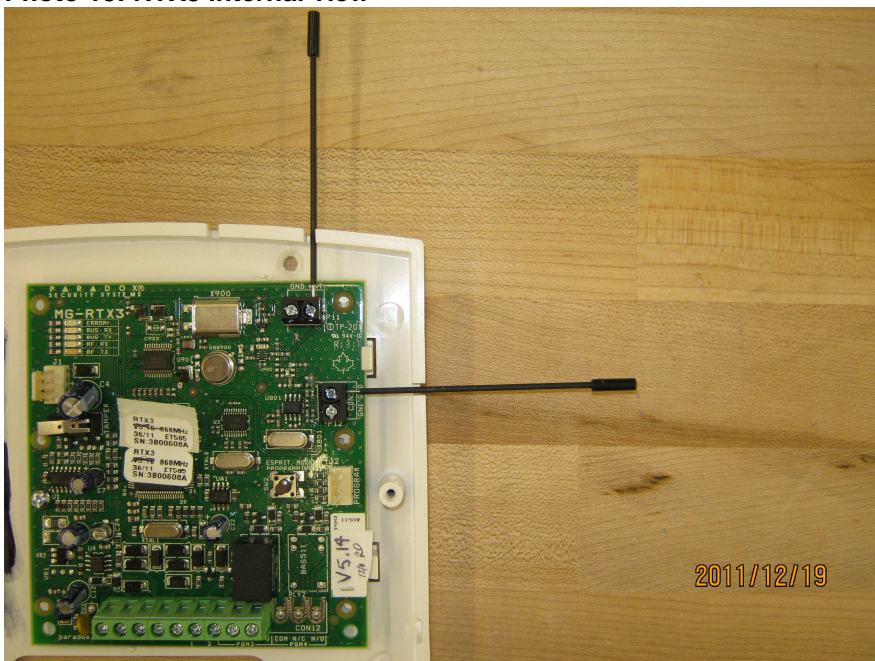


Appendix B - Photos

**Photo 12: RTX3**



**Photo 13: RTX3 internal view**



## Appendix B - Photos

**Photo 14: TM50 front view****Photo 15: TM50 back view**