WESCAN

Section - 11

28.31.01
Fire Alarm System

WESCAN
ELECTRICAL MECHANICAL SERVICES

FIRST FOR FIRE PROTECTION

VIPOND

571 Ferry Road
Winnipeg, Manitoba
Tel.: (204) 783-2420
Fax.: (204) 786-1321

Certificate No.: 12-0092

System Verification Certificate

Type of Fire Alarm Control Panel: NOTIFIER NFS-320

Location: SOUTH WEST RAPID TRANSIT CORRIDOR - 290 OSBOURNE

Panel Location: SERVICE BUILDING

This Certifies That The Above System Has Been Verified In Accordance With Recognized And Accepted Standards And Was Found To Be In Proper Working Order When This Verification Was Completed On MARCH 20 2012 In Accordance with ULC-S-524 and ULC-S-537.

This System Should Be Re-Inspected On Or Before MARCH 20 2013

Authorized Signature

Vipond Fire Protection Inc.

This Certificate Should Be Affixed Adjacent To The System.

CAN/ULC-S537-04

C1. FIRE ALARM SYSTEM VERIFICATION REPORT

(Reference: Clause 3.1.6, 3.1.7, 3.2.2)

YES = Tested Correctly

No = Did not test correctly

N/A = Not Applicable (Function or Feature not provided on this Fire Alarm System)

Building Name:	**S.W. RAPID TRANSIT CORRIDOR**		**Date:** March 20, 2012
Address:	**290 OSBOURNE** **WINNIPEG, MB.**		
Job Number:	**616298**		
System Manufacturer:	**NOTIFIER**	**Model Number:**	**NFS-320**

A	System provides single-stage operation.	**YES**	✓	**NO**	**N/A**	
B	System provides two-stage operation.	**YES**		**NO**	**N/A**	✓
C	The entire Fire Alarm System has been verified in accordance with CAN/ULC-S537, Verification of Fire Alarm Systems	**YES**	✓	**NO**	**N/A**	
D	This is a partial verification for partial occupancy.	**YES**		**NO**	**N/A**	✓
E	This is a partial verification for a fire alarm system that has been replaced in stages.	**YES**		**NO**	**N/A**	✓
F	This is a verification of a portion of an existing fire alarm system verified in accordance with Section 6, System Modifications	**YES**		**NO**	**N/A**	✓
G	Installed in accordance with the design and CAN/ULC-S524, Standard for the Installation of Fire Alarm Systems.	**YES**	✓	**NO**	**N/A**	
H	The fire alarm system documentation is on site and includes a description of the system.	**YES**	✓	**NO**	**N/A**	
I	The Fire Alarm System is fully functional	**YES**	✓	**NO**	**N/A**	
J	Comments:					
K	A Copy of this report has been given to: WESCAN ELECTRIC who is the owner or owner's representative for this building.	**YES**	✓	**NO**		

This is to certify the information contained in this Fire alarm Verification Report is correct and complete.

BOB SEMENIUK	M 01850S	204-783-2420
Printed Name of Primary or Supervising Technician Conducting the Verification	*M License # of Primary or Supervising Technician Conducting the Verification*	*Telephone Number*
Signature of Primary or Supervising Technician Conducting the Verification	CFAA #13-994096 *Identification Number of Primary or Supervising Technician Conducting the Verification*	
Printed Name of Technician Conducting the Verification	*M License Number of Technician Conducting the Verification*	*Telephone Number*
Signature of Technician Conducting the Verification	*Identification Number of Technician Conducting the Verification*	

Fire Alarm System was Designed By:
Address and Telephone Number:

Fire Alarm System was Installed By: WESCAN ELECTRIC
Address and Telephone Number:

C2. DOCUMENTATION

(Reference: Clauses 3.2.3)

C2.1 Documentation for the Fire Alarm System is on Site and Includes the Following Description of the Fire Alarm System.

A	Instruction for resetting the System and Silencing Alarm Signals.	**YES**	✓	**NO**		**N/A**	
B	Instructions for Silencing the Trouble Signal and Action to be taken when the Trouble Signal Sounds.	**YES**	✓	**NO**		**N/A**	
C	Description of the function of each operating control and indicator on the Fire Alarm Control Unit.	**YES**	✓	**NO**		**N/A**	
D	Description of the Area or Fire Zone Protected by each alarm detection Circuit. (This may be in the form of a list or plan drawing).	**YES**		**NO**		**N/A**	✓
E	Description of Alarm Signal Operation.	**YES**	✓	**NO**		**N/A**	
F	Description of Ancillary Equipment controlled by the fire Alarm System.	**YES**	✓	**NO**		**N/A**	
G	The Fire Alarm System has a Feature for Connection for Fire Department Signalling. If Connected, indicate the Monitoring Station:	**YES**	✓ **PROTELEC**	**NO**		**N/A**	

C3. FIELD DEVICE AND RELATED CIRCUITS-TEST AND INSPECTION

(Reference: Clauses 3.3.1.1, 3.3.1.3, Subsections 3.3.1, 3.3.2, 3.3.3)

A	Correct field termination and wiring size.	**YES**	✓	**NO**		**N/A**	
B	Correct circuit polarities.	**YES**	✓	**NO**		**N/A**	
C	An open circuit fault on a conventional device circuit causes a trouble signal.	**YES**	✓	**NO**		**N/A**	
D	Removal of any active or supporting field device circuit causes a trouble signal.	**YES**	✓	**NO**		**N/A**	
E	One contact device and one non-contact device tested for operation and annunciation at the control unit or transponder, when using a field verifying device.	**YES**	✓	**NO**		**N/A**	
F	Class A circuits serving conventional field devices tested for the capability of providing an alarm signal on each side of an open circuit fault connection at an electrically remote point in the circuit.	**YES**	✓	**NO**		**N/A**	
G	Ground fault indications occur when tested at the electrically furthest field device, and do not result in normal to off-normal status change conditions.	**YES**	✓	**NO**		**N/A**	
H	Field device at the electrically furthest point from the power source (in every circuit) receives rated power in in accordance with manufacturer's specifications.	**YES**	✓	**NO**		**N/A**	
I	Replaceable over-current devices are for correct rating.	**YES**	✓	**NO**		**N/A**	
J	Wire type and gauge in accordance with equipment manufacturer's installation wiring at all systems termination points.	**YES**	✓	**NO**		**N/A**	

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C4. DATA COMMUNICATION LINK TEST

(Reference: Clause 3.2.6, Subsection 3.3.4-Note)

Control Unit or transponder location:	SERVICE BLDG
Control Unit or transponder identification:	NFS-320
Data communication link identification:	SLC1

A	Each system abnormal condition specified in Table 1, Abnormal System Condition, tested for each data communication link at the control unit or transponder.	**YES**	✓	**NO**		**N/A**	
B	Tests for alarm and trouble received under a single ground fault condition conducted on each conductor of that data communication link independently.	**YES**	✓	**NO**		**N/A**	
C	Each conductor in a data communication link, Class A (DCLA) tested for the capability of providing an alarm signal on each side of a single open circuit fault condition.	**YES**	✓	**NO**		**N/A**	
D	Where a data communication link serves devices on more than one floor area, impose a wire-to-wire short circuit fault within each floor area and confirm receipt of trouble and alarm condition from another floor area.	**YES**		**NO**		**N/A**	✓
E	Where fault isolation modules are installed in data communication links serving field devices, wiring shorted on the isolated side annunciation of the fault confirmed, and then a device on the source side operated, and activation confirmed at the control unit or transponder.	**YES**		**NO**		**N/A**	✓
F	Where fault isolation in data communication links is provided between control units or transponders, the field wiring shorted between each pair of control units or transponders, in turn, annunciation of the fault confirmed and operation outside the shortened section confirmed.	**YES**		**NO**		**N/A**	✓

NOTE: For Item C4, one page is required <u>for each data communications Link in the system</u>.

C5. CONTROL UNIT OR TRANSPONDER RECORD

(Reference: Clause 4.1.1)

C5.1 CONTROL UNIT OR TRANSPONDER TEST

(Reference: Clauses 3.2.4, 4.2.2.1)

Control Unit or transponder location:	SERVICE BLDG
Control Unit or transponder identification:	NFS-320

A	Power "On" Visual Indicator.	**YES**	✓	**NO**		**N/A**	
B	Common Visual Trouble Signal operates.	**YES**	✓	**NO**		**N/A**	
C	Common Audible Trouble Signal operates.	**YES**	✓	**NO**		**N/A**	
D	Trouble Signal Silence Switch operates.	**YES**	✓	**NO**		**N/A**	
E	Main Power Supply Failure Trouble Signal operates	**YES**	✓	**NO**		**N/A**	
F	Ground Fault Tested on Positive and Negative Initiates a Trouble Signal.	**YES**	✓	**NO**		**N/A**	
G	Alert Signal Operates.	**YES**		**NO**		**N/A**	✓
H	Alarm Signal Operates.	**YES**	✓	**NO**		**N/A**	
I	Automatic transfer from Alert Signal to Alarm Signal operates.	**YES**		**NO**		**N/A**	✓
J	Manual transfer from Alert Signal to Alarm Signal operates.	**YES**		**NO**		**N/A**	✓
K	Automatic transfer from Alert Signal to Alarm Signal cancel (acknowledge) feature operates on a two-stage system.	**YES**		**NO**		**N/A**	✓
L	Alarm Signal Silence Inhibit function operates.	**YES**		**NO**		**N/A**	✓
M	Alarm Signal Manual Silence Operation.	**YES**	✓	**NO**		**N/A**	
N	Alarm Signal Silence Visual Indication operates.	**YES**	✓	**NO**		**N/A**	
O	Alarm Signal, when silenced, automatically reinitiates upon Subsequent Alarm.	**YES**	✓	**NO**		**N/A**	
P	Alarm Signal Silence Automatic Cut-Out Timer.	**YES**		**NO**		**N/A**	✓
Q	Audible and Visual Alarm Signals Programmed and operate per design and specification.	**YES**	✓	**NO**		**N/A**	
R	Input Circuit, Alarm and Supervisory Operation, including visual indicator operates.	**YES**	✓	**NO**		**N/A**	
S	Input Circuit supervision fault causes a Trouble indication.	**YES**	✓	**NO**		**N/A**	
T	Output Circuit Alarm Indicators Operate.	**YES**	✓	**NO**		**N/A**	
U	Output Circuit supervision fault causes a Trouble Indication.	**YES**	✓	**NO**		**N/A**	
V	Visual Indicator Test (Lamp Test) operates.	**YES**	✓	**NO**		**N/A**	
W	Coded Signal Sequences operate not less than the required number of times and the correct alarm signal operates thereafter.	**YES**		**NO**		**N/A**	✓

C5.1 CONTROL UNIT OR TRANSPONDER TEST RECORD CONTINUED

X	Coded Signal Sequences are not interrupted by sub-sequent alarms.	**YES**		**NO**		**N/A**	✓
Y	Ancillary device control circuit is rated for the intended purpose.	**YES**		**NO**		**N/A**	✓
Z	Ancillary device by-pass results in trouble signal.	**YES**	✓	**NO**		**N/A**	
AA	Input circuit to output circuit operation, including ancillary Device Circuits, for Correct Programme Operation, as per Design and Specification.	**YES**	✓	**NO**		**N/A**	
BB	Fire Alarm System reset operates.	**YES**	✓	**NO**		**N/A**	
CC	Main Power Supply to Emergency Power supply Transfer.	**YES**	✓	**NO**		**N/A**	
DD	Control Unit Bonded to Ground.	**YES**	✓	**NO**		**N/A**	
EE	Status Change Confirmation Feature (Smoke Detectors Only) Verified.	**YES**		**NO**		**N/A**	✓
FF	Confirm that the alarm transmission to the remote fire signal receiving centre is received.	**YES**	✓	**NO**		**N/A**	
GG	Confirm that the supervisory transmission to the fire signal receiving centre is received.	**YES**	✓	**NO**		**N/A**	
HH	Confirm that the trouble transmission to the fire signal receiving centre is received.	**YES**	✓	**NO**		**N/A**	
II	If connected, record the name and telephone number of the fire signal receiving centre.	**Name:**	**PROTELEC**				
		Telephone:	**949-1415**				
JJ	Operation of the fire signal receiving centre disconnect means results in a specific trouble indication at the control unit or transponder and transmits a trouble signal to the fire signal receiving centre.	**YES**		**NO**		**N/A**	✓

NOTE: For Item C5, one page is required <u>for each Control Unit or Transponder in a networked system</u>.

C5.2 VOICE COMMUNICATION TEST

(Reference: Clauses 3.2.4, 4.2.3.1)

A	Power "On" Indicator operates.	**YES**		**NO**		**N/A**	✓
B	Common Visual Trouble Signal operates.	**YES**		**NO**		**N/A**	✓
C	Common Audible Trouble Signal operates.	**YES**		**NO**		**N/A**	✓
D	Trouble Signal Silence Switch operates	**YES**		**NO**		**N/A**	✓
E	All-Call Voice Paging, including visual indicator, operates.	**YES**		**NO**		**N/A**	✓
F	Output Circuits for Selective Voice Paging, including visual indication operates.	**YES**		**NO**		**N/A**	✓
G	Output Circuits for Selective Voice Paging Trouble Operation Including visual indication, operates.	**YES**		**NO**		**N/A**	✓
H	Microphone including press to talk switch, operates.	**YES**		**NO**		**N/A**	✓
I	Operation of Voice Paging Does not interfere with initial Time of Alert Signal and Alarm Signal.	**YES**		**NO**		**N/A**	✓
J	All-Call Voice Paging operates ***(on Emergency Power Supply?).***	**YES**		**NO**		**N/A**	✓
K	Upon Failure of one Amplifier, System Automatically Transfers to Backup Amplifier(s).	**YES**		**NO**		**N/A**	✓
L	Circuits for Emergency Telephones call-in operation including, Audible and Visual Indication operates.	**YES**		**NO**		**N/A**	
M	Circuits for Emergency Telephones for Operation including Two-Way Voice Communication, operates.	**YES**		**NO**		**N/A**	✓
N	Circuits for Emergency Telephone Trouble Operation including Visual Indication, operates.	**YES**		**NO**		**N/A**	✓
O	Emergency Telephone Verbal Communication, operates.	**YES**		**NO**		**N/A**	✓
P	Emergency Telephone Operable or In-Use Tone at Handset, operates.	**YES**		**NO**		**N/A**	✓

C5.3 REQUIRED SYSTEM RESPONSE TIMES

(Reference: Clause 4.2.4.1)

A	Audible signal devices and visable devices operated within 10's, and	**YES**	✓	**NO**		**N/A**	
	Subsequent input operated within 10's	**YES**	✓	**NO**		**N/A**	
B	Remote connection operated within 10's	**YES**		**NO**		**N/A**	✓
C	Releasing device start of sequence operation wthin 10's	**YES**		**NO**		**N/A**	✓
D	Required annunciation operated within 10's, and	**YES**	✓	**NO**		**N/A**	
	Subsequent input operated within 10's	**YES**	✓	**NO**		**N/A**	
E	Required central alarm and control facililty operated within 10's and	**YES**	✓	**NO**		**N/A**	
	Subsequent input operated within 10's	**YES**	✓	**NO**		**N/A**	
F	Ancillary Circuits operated within 10's, and	**YES**	✓	**NO**		**N/A**	
	Subsequent input operation within 30's	**YES**	✓	**NO**		**N/A**	
Note:	***Refer to Tabel 2 for required system response times.***						

C5.4 CONTROL UNIT OR TRANSPONDER INSPECTION

(Reference: Clause 3.2.4, 4.2.5.1)

Control Unit or Transponder Location:	SERVICE BLDG
Control Unit or Transponder Identification	NFS-320

A	Input Circuit Designation Correctly identified in relation to Connected Field Devices.	**YES**	✓	**NO**		**N/A**	
B	Output Circuit Designations correctly identified in relation to Connected Field Devices.	**YES**	✓	**NO**		**N/A**	
C	Correct designations for common control functions & indicators.	**YES**	✓	**NO**		**N/A**	
D	Plug-in Components and modules securely in place.	**YES**	✓	**NO**		**N/A**	
E	Plug-in Cables securely in place.	**YES**	✓	**NO**		**N/A**	
F	Record the Date, Revision and version of Firmware and Software program.	**YES**	✓	**NO**		**N/A**	
		Date: VERSION 17					
G	Control unit or transponder is clean and free of dust & dirt.	**YES**	✓	**NO**		**N/A**	
H	Fuses in Accordance with Manufacturer's Specification.	**YES**	✓	**NO**		**N/A**	
I	Control unit or transponder lock functional.	**YES**	✓	**NO**		**N/A**	
J	Termination Points from Wiring to Field Devices Secure.	**YES**	✓	**NO**		**N/A**	
K	Control Unit Power Disconnects in Accordance with C22.1, Safety Standard for Electrical Installations, Canadian Electrical Code, Part 1.	**YES**	✓	**NO**		**N/A**	
L	Main Power Supply Feed Wiring in Accordance with Manufacturer's Specifications.	**YES**	✓	**NO**		**N/A**	
M	Verify control units or transponders with stand alone capability serves the same area for both input circuits and output circuits.	**YES**		**NO**		**N/A**	✓
N	Control unit or transponders which operate with stand alone capability have signal silence, reset, and trouble silence switches with visual indicators, degraded mode capability and stand alone capability indicators.	**YES**		**NO**		**N/A**	✓
O	Each control unit or transponder furnished with operating and maintenance instructions, and installation instructions.	**YES**	✓	**NO**		**N/A**	
P	Control Unit or transponder visual indicators comply with Table 3, Visual Indicators-Colour Code.	**YES**	✓	**NO**		**N/A**	

C5.5 LARGE SCALE NETWORK SYSTEMS

(Reference: Clauses 3.2.4, 4.3.2)

A	Verify control units or transponders serve the same area for both input circuits and output circuits.	**YES**		**NO**		**N/A**	✓
B	Verify control units or transponders with stand alone capability have signal silence, reset, and trouble silence switches with visual indicators, degraded mode capability and stand alone capability indicators.	**YES**		**NO**		**N/A**	✓
C	Confirm that between any nodes a single open circuit fault wire-to wire short circuit fault, or ground fault on the network results in a trouble signal at each node and continued alarm receipt capability at each node under these conditions.	**YES**		**NO**		**N/A**	✓
D	To test stand alone capability, create a condition of data communication link failure, and confirm each control unit or transponder is capable of receiving an alarm initiation and provides output operation in the area as served by the control unit or transponder degraded mode	**YES**		**NO**		**N/A**	✓

C5.5 Large Scale Network System continued

E	To test degraded mode capability, create a condition of data communication link failure in two separate locations creating two network segments, and confirm each segment of the network have the following operation:						
(i)	Operate the alarm signals in accordance with the system operating sequence;	**YES**		**NO**		**N/A**	✓
(ii)	Maintain synchronization of control units or transponders for alert signals and alarm signals:	**YES**		**NO**		**N/A**	✓
(iii)	Operate local relays in control units or transponders connected to ancillary devices; as required;	**YES**		**NO**		**N/A**	✓
(iv)	Confirm the operation of acknowledge, signal silence, reset and trouble silence switches with visual indicators, degraded mode capability and stand alone capability indicators, are functional for each network segment.	**YES**		**NO**		**N/A**	✓

C5.6 POWER SUPPLY INSPECTION

(Reference: Clauses 3.2.4, 4.4.1, 4.4.2)

Control unit or transponder location:	SERVICE BLDG
Control unit or transponder identification:	NFS-320

A	Conforms with the Requirements of CAN/ULC-S524, Standard for the Installation of Fire Alarm Systems, and C22.1, Safety Standard for Electrical Installations, Canadian Electrical Code, Part 1 Section 32.	**YES**	✓	**NO**		**N/A**	
B	Fused in accordance with the Manufacturer's marked rating of the System.	**YES**	✓	**NO**		**N/A**	
C	Equipped with the identified disconnect means.	**YES**	✓	**NO**		**N/A**	
D	Adequate to Meet the Requirements of the System.	**YES**	✓	**NO**		**N/A**	
E	Power for Ancillary Devices is taken from a source separate from the Fire Alarm System Control Unit Power Supply.	**YES**	✓	**NO**		**N/A**	
F	Power for Ancillary Devices is taken from the Control Unit and it is designed to provide such power.	**YES**		**NO**		**N/A**	✓
G	Ancillary Devices Powered from Control Unit are Recorded.	**YES**		**NO**		**N/A**	✓

NOTE: For Item C5.6, one page is required <u>for each power supply in the system</u>.

C5.7 EMERGENCY POWER SUPPLY TEST & INSPECTION

(Reference: Clause 3.2.4, 4.4.4, 4.4.5)

Control unit or transponder location:	SERVICE BLDG
Control unit or transponder identification:	NFS-320

A	Correct battery type as recommended by Manufacturer.	**YES**	✓		**NO**		**N/A**	
B	Correct battery rating as determined by battery Calculations based on full system load.	**YES**	✓		**NO**		**N/A**	
C	Battery Voltage with Main Power Supply "On" is:	**Voltage:**		**V dc**				
D	Battery Voltage & Current with Main Power supply "Off" and Fire Alarm System in Supervisory Condition is:	**Voltage:** **Current:**		**V dc** **mA dc**				
E	Battery Voltage and Current with Main Power Supply "Off" and System Fire System in Full Load alarm condition is:	**Voltage:** **Current:**		**V dc** **mA dc**				
F	The charging current is:	**Current:**		**mA**				
G	Inspected for Physical Damage:	**YES**	✓		**NO**		**N/A**	
H	Terminals cleaned and lubricated.	**YES**	✓		**NO**		**N/A**	
I	Terminals clamped tightly.	**YES**	✓		**NO**		**N/A**	
J	Correct Electrolyte Level.	**YES**			**NO**		**N/A**	✓
K	Specific gravity of the electrolyte is within Manufacturer's specifications.	**YES**			**NO**		**N/A**	✓
L	Electrolyte leakage.	**YES**	✓		**NO**		**N/A**	
M	Adequately ventilated.	**YES**	✓		**NO**		**N/A**	
N	Record manufacturer's date code or in-service date:	**Date:**						
O	Disconnection Causes Trouble Signal.	**YES**	✓		**NO**		**N/A**	
P	Indicate type of battery test performed:							
(i)	Required supervisory load for 24 h followed by the required full load operation: or	**YES**			**NO**			
(ii)	A silent test by using the load resistor method may be used for the full duration test(refer to appendix D1, Selent Test)or:	**YES**			**NO**			
(iii)	Silent accelerated test. (Refer to Appendix D2, Silent Accelerated Test)	**YES**	✓		**NO**			
Q	Record calculated battery capacity (Refer to Appendix D3.1-C)		**12**	**A.h**				
R	Record battery terminal voltage after completion of tests		**24**	**V dc**				
S	Battery voltage not less than 85% of its rating after tests	**YES**	✓		**NO**		**N/A**	
T	Generator provides power to AC circuit serving the fire alarm system.	**YES**			**NO**		**N/A**	✓
U	Trouble condition at the emergency generator results in an audible common trouble signal and a visual indication at the required annunicator.	**YES**			**NO**		**N/A**	✓

NOTE: For Item C5.6, one page is required <u>for EACH set of batteries in the system</u>.

C5.8 ANNUNCIATOR AND REMOTE TROUBLE UNIT TEST AND INSPECTION

(Reference: Clause 3.2.5, 4.5.1)

Annunciator or remote trouble signal unit location:	STATION NORTH WEST
Annunciator or remote trouble signal unit identificatio	ACM24AT

A	Power on/on line indicator operates.	**YES**	✓	**NO**		**N/A**	
S	Individual Alarm and Supervisory input zone clearly indicated and separately designated.	**YES**	✓	**NO**		**N/A**	
C	Individual Alarm and Supervisory Zone designation labels are properly identified.	**YES**	✓	**NO**		**N/A**	
D	Common Trouble Signal operates.	**YES**		**NO**		**N/A**	
E	Visual indicator test (Lamp Test) operates.	**YES**		**NO**		**N/A**	✓
F	Input wiring from control unit or transponder is supervised.	**YES**	✓	**NO**		**N/A**	
G	Alarm signal silence visual indicator operates.	**YES**		**NO**		**N/A**	✓
H	Switches for ancillary functions operate as per design and specification.	**YES**		**NO**		**N/A**	✓
I	Ancillary functions visual indicators operate.	**YES**		**NO**		**N/A**	✓
J	Manual activation of Alarm Signal and indication operates.	**YES**		**NO**		**N/A**	✓
K	Displays are visible in installed location.	**YES**	✓	**NO**		**N/A**	
L	Operates on emergency power.	**YES**	✓	**NO**		**N/A**	
M	Visual indicators comply with Table 3, Visual Indicators Colour Code.	**YES**	✓	**NO**		**N/A**	
N	Multi-line sequential display operates as per Appendix C5.9 (Annunicators or Sequential Displays) where utilized.	**YES**		**NO**		**N/A**	✓

C5.9 ANNUNCIATORS OR SEQUENTIAL DISPLAYS

(Reference: Clause 3.2.5, 4.5.2, Appendix C5.8-N)

Annunciator or sequential display location:	N/A
Annunciator or sequential identification:	N/A

A	Power "ON" indicator operates.	**YES**		**NO**		**N/A**	✓
B	Individual Alarm and Supervisory zone indication operates	**YES**		**NO**		**N/A**	✓
	Exception: Operation of each individual alarm and supervisory zone indication gives the identical indication, or lights the identical indicators at the other Annunciators) and sequential display's)	**YES**		**NO**		**N/A**	✓
	Specify Method of confirmation: N/A						
	Minimum of one alarm zone and one supervisory zone tested per annunciator or sequential display to confirm operation	**YES**		**NO**		**N/A**	✓
C	Individual alarm and supervisory zone designation labels are properly identified.	**YES**		**NO**		**N/A**	✓
D	Common trouble signal operates.	**YES**		**NO**		**N/A**	✓
E	Visual indicator test (lamp test) operates.	**YES**		**NO**		**N/A**	✓
F	Input wiring from control unit is supervised.	**YES**		**NO**		**N/A**	✓
G	Alarm signal silence visual indicator operates.	**YES**		**NO**		**N/A**	✓
H	Switches for ancillary functions operates as per design. and specification.	**YES**		**NO**		**N/A**	✓
I	Ancillary function visual indicators operate.	**YES**		**NO**		**N/A**	✓
J	Manual activation of alarm signal and indication operates.	**YES**		**NO**		**N/A**	✓
K	Displays are visible in installed location.	**YES**		**NO**		**N/A**	✓

C5.10 REMOTE TROUBLE SIGNAL UNIT TEST AND INSPECTION

(Reference: Clause 3.2.5, 4.5.3)

Remote trouble signal unit location	N/A
Remote trouble signal unit identification:	N/A

A	Input Wiring from Control Unit is Supervised.	**YES**	**NO**	**N/A**	✓
B	Visual Trouble Signal operates.	**YES**	**NO**	**N/A**	✓
C	Audible Trouble Signal operates.	**YES**	**NO**	**N/A**	✓
D	Audible Trouble Signal Silence operates.	**YES**	**NO**	**N/A**	✓

C5.11 PRINTER TEST

(Reference Clause 3.2.5, 4.6.1)

Printer location:	N/A
Printer identification:	N/A

A	Operates as per design and specification.	**YES**	**NO**	**N/A**	✓
B	Zone of Each Alarm Initiating device is correctly printed.	**YES**	**NO**	**N/A**	✓
C	Rated Voltage is present.	**YES**	**NO**	**N/A**	✓

C5.12 ANCILLARY DEVICE CIRCUIT TEST

(Reference: Clauses 4.2.2.1-AA, C5.1-AA)

RECORD SPECIFIC TYPE OF ANCILLARY CIRCUIT	Operation of Ancillary Circuit Confirmed			
SEE TEST RECORD	**YES** ✓	**NO**	**N/A**	
	YES	**NO**	**N/A**	✓
	YES	**NO**	**N/A**	✓

Note: The tests reported on this Form do not include the actual operational test of ancillary devices.

C6. FIELD DEVICE RECORD

(Reference: Clauses 3.2.7, 5.1.1)

Building Name: S.W. RAPID TRANSIT CORRIDOR

Date: March 20, 2012

C6.1 FIELD DEVICE TESTING - LEGEND AND NOTES

(Reference: C6.2, C6.3)

Device	*Description*	*Type*	*Model No.*	*Total*
M	Manual Pull Station	NOTIFIER	NBG-12LOB	
HT1	Heat Detector, Non-restorable	NOTIFIER	CF-135MP	
HT2	Heat Detector, Non-restorable	NOTIFIER	CF-200EWT	
SP	Smoke Detector Photoelectric	NOTIFIER		
	Sensitivity Test Method or Test Equipment: **n/a**	**SEE ATTACHED DET.**		
	Model/Method: **n/a**	**MAINTENANCE REPORT**		
	Manufacturer sensitivity range: **n/a**			
	Sensitivity range: **n/a**			
SI	Smoke Detector Ionization			
	Sensitivity Test Method or Test Equipment: **n/a**	**SEE ATTACHED DET.**		
	Model/Method: **n/a**	**MAINTENANCE REPORT**		
	Manufacturer sensitivity range: **n/a**			
	Sensitivity range: **n/a**			
DS	Duct Smoke Detector	NOTIFIER	DNRA	
BSD	Beam Smoke Detector			
FS1	Sprinkler Flow Switch	POTTER	VSR	
TS1	Sprinkler Isolation Valve (Supervisory Device)	VICTAULIC	702W	
TS2	Sprinkler Isolation Valve (Supervisory Device)			
TS3	Sprinkler Isolation Valve (Supervisory Device)	POTTER	OSYSU2	
PS1	Sprinkler Flow Pressure Switch	SYSTEM SENSOR	EPSA10-1	
PS2	Sprinkler Low Air Pressure Switch	SYSTEM SENSOR	EPSE40-1	
SOL	Sprinkler Pre-Action Solenoid			
MR	Manual Release Station			
ABT	Abort Station			
B-10	10 Inch Bell			
B-6	6 Inch Bell			
V	Visual Signal Appliance (Strobe)			
H-S	Combination Horn/Strobe Indicating Appliance	NOTIFIER	P2RKA	
H-MT	Multi-Tone Horn			
H-M	Mechanical Horn			
PZ	Piezo Sounder			
SP	Cone Type Loudspeaker			
HSP	Horn Type Loudspeaker			
ET	Emergency Telephone			
EOL	End of Line Device	NOTIFIER	EOL-CR	
AD	Ancillary Device			
XP10	Addressable Monitor Module	NOTIFIER	XP10-MA	
FMM-101A	Addressable Monitor Module			
XP6R	Addressable Relay Modul	NOTIFIER	XP6RA	
FCM	Addressable Control Mod			
FDM	Addressable Dual Input M			
ISO	Fault Isolation Module			
SFD	Supporting Field Device (Monitor)			
RI	Remote Indicator Unit			
S	Signal Light	ECONO LITE CANADA INC.	SIG1-12PYEL W/RED LED	2

C6. FIELD DEVICE RECORD

(Reference: Clauses 3.2.7, 5.1.1)

Building Name: S.W. RAPID TRANSIT CORRIDOR

Date: March 20, 2012

C6.1 FIELD DEVICE TESTING - LEGEND AND NOTES

(Reference: C6.2, C6.3)

Note 1. Smoke detector sensitivity confirmation or measurement should be recorded in the remarks column.

Note 2. Smoke detector cleaning or replacement date should also be recorded in the remarks column.

Note 3. Status change, including time delay, should be recorded in the remarks column.

Note 4. Duct smoke detector pressure differential should be confirmed and recorded in the remarks column.

Note 5. Time delay setting of water flow switch should be be recorded in the remarks column.

Note 6. Sprinkler supervisory switches cause trouble condition to be annunciated but not an alarm condition.

Note 7. Upper & lower pressure settings of supervisory devices should be written in the remarks column.

Note 8. Low temperature setting should be recorded in the remarks column.

Note 9. Identify specific ancillary devices in the remarks column.

Note 10. Identify date field device changed in the remarks column.

Note 11. Identify correct field device operation (e.g. alarm, trouble, supervisory, annunciation indication).

Note 12. Identify zone, circuit number, or address.

Note 13. Identify conventional field device locations.

Note 14. Identify active field device and supporting field device, data communication link (DCL), address and location.

Note 15. Test and confirm conventional field device supervision of wiring.

Note 16. Confirm field device free of damage.

Note 17. Confirm field device free of foreign substance (e.g. paint).

Note 18. Confirm field device mechanically supported independently of the wiring.

Note 19. Confirm field device protective dust shields or covers removed.

Caution: The tests reported on these forms do not include the actual operational test of Ancillary Devices.

C6.2 INDIVIDUAL DEVICE RECORD

(Reference C6.1)

Building Name : **S.W. RAPID TRANSIT CORRIDOR** **Date:** March 20, 2012

Device Legends and Notes are listed in Appendix C6.1 Field Device Testing-Legend and Notes

Zone Circuit Number	Location	Device	Address	Correctly Installed	Missing Device	Requires Service.	Alarm Confirmed	Annunciator Confirmed	Supervision Confirmed	Remarks
	ZONE 1 STATION									
	MAIN CONTROL PANEL	XP10	L1M01	✓			✓	✓	✓	
	N.W. EXIT	EOL	L1M01	✓			✓	✓	✓	
	N.W. EXIT	M	L1M01	✓			✓	✓	✓	
	S.W. EXIT	M	L1M01	✓			✓	✓	✓	
	N.E. EXIT	M	L1M01	✓			✓	✓	✓	
	S.E. EXIT	M	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ROOF UNDERSIDE	HT1	L1M01	✓			✓	✓	✓	
	ZONE 2 UNDER BRIDGE									
	MAIN CONTROL PANEL	XP10	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	UNDER BRIDGE	HT2	L1M02	✓			✓	✓	✓	
	MAIN CONTROL PANEL	EOL	L1M02	✓			✓	✓	✓	
	ZONE 3 SERVICE BLDG									
	MAIN CONTROL PANEL	XP10	L1M03	✓			✓	✓	✓	
	SERVICE BLDG	EOL	L1M03	✓			✓	✓	✓	
	SERVICE BLDG	HT1	L1M03	✓			✓	✓	✓	
	ZONE 4 SPKLR BACKFLOW 1									
	MAIN CONTROL PANEL	XP10	L1M04	✓			✓	✓	✓	

C6.2 INDIVIDUAL DEVICE RECORD

(Reference C6.1)

Building Name : **S.W. RAPID TRANSIT CORRIDOR** **Date:** March 20, 2012

Device Legends and Notes are listed in Appendix C6.1 Field Device Testing-Legend and Notes

Zone Circuit Number	Location	Device	Address	Correctly Installed	Missing Device	Requires Service.	Alarm Confirmed	Annunciator Confirmed	Supervision Confirmed	Remarks
	SERVICE BLDG	TS	L1M04	✓			✓	✓	✓	
	SERVICE BLDG	EOL	L1M04	✓			✓	✓	✓	
	ZONE 5 SPKLR BACKFLOW 2									
	MAIN CONTROL PANEL	XP10	L1M05	✓			✓	✓	✓	
	SERVICE BLDG	TS	L1M05	✓			✓	✓	✓	
	SERVICE BLDG	EOL	L1M05	✓			✓	✓	✓	
	ZONE 6 SPKLR LOW									
	MAIN CONTROL PANEL	XP10	L1M06	✓			✓	✓	✓	
	SERVICE BLDG	PS2	L1M06	✓			✓	✓	✓	48 PSI
	SERVICE BLDG	EOL	L1M06	✓			✓	✓	✓	
	ZONE 7 SPKLR WATERFLOW									
	MAIN CONTROL PANEL	XP10	L1M07	✓			✓	✓	✓	
	SERVICE BLDG	PS1	L1M07	✓			✓	✓	✓	8 PSI
	SERVICE BLDG	EOL	L1M07	✓			✓	✓	✓	
	ZONE 8 SPARE	XP10MA	L1M08	✓			✓	✓	✓	
	ZONE 9 SPARE	XP10MA	L1M09	✓			✓	✓	✓	
	ZONE 10 SPARE	XP10MA	L1M10	✓			✓	✓	✓	
	SIGNAL CIRCUIT #1									
	STATION EAST SIDE	EOL	B01	✓			✓	✓	✓	24.1 VDC
	STATION EAST SIDE	H-S	B01	✓			✓	✓	✓	TEMPORAL HI 115 CD
	STATION EAST SIDE	H-S	B01	✓			✓	✓	✓	TEMPORAL HI 115 CD
	STATION EAST SIDE	H-S	B01	✓			✓	✓	✓	TEMPORAL HI 115 CD
	SIGNAL CIRCUIT #2									
	STATION WEST SIDE	EOL	B02	✓			✓	✓	✓	24.0VDC
	STATION WEST SIDE	H-S	B02	✓			✓	✓	✓	TEMPORAL HI 115 CD
	STATION WEST SIDE	H-S	B02	✓			✓	✓	✓	TEMPORAL HI 115 CD
	STATION WEST SIDE	H-S	B02	✓			✓	✓	✓	TEMPORAL HI 115 CD
	SIGNAL CIRCUIT #3 SPARE	N/A	B03	✓			✓	✓	✓	
	SIGNAL CIRCUIT #4 SPARE	N/A	B04	✓			✓	✓	✓	
	ANCILLIARY DEVICES									
	BELOW FIRE ALARM CONTROL PANEL	XPR-6	L1M11	✓			✓	✓	✓	
	SOUTH ENTRANCE	S	L1M11	✓			✓			110VAC LIGHT
	NORTH ENTRANCE	S	L1M11	✓			✓			11OVAC LIGHT

C6.2 INDIVIDUAL DEVICE RECORD

(Reference C6.1)

Building Name: S.W. RAPID TRANSIT CORRIDOR **Date:** March 20, 2012

ZONE	LOCATION	AMBIENT (dBA)	ALARM SIGNAL(dBA)	REMARKS
	STATION	55	99	PASS

SCHEDULE " A"
INFORMATION ON A CENTRAL STATION

ADDRESS OF THE MONITORED PROPERTY / FIRE ALARM SYSTEM
290 OSBORNE STREET
WINNIPEG, MANITOBA

NAME OF THE CENTRAL STATION
PROTELEC ALARMS

ADDRESS OF THE CENTRAL STATION
1450 MOUNTAIN AVE
WINNIPEG, MANITOBA

TYPE OF MONITORED SYSTEM	
✓	FIRE ALARM
	SPRINKLER

NATURE OF MONITORING SIGNAL	
✓	ALARM
✓	TROUBLE
✓	SUPERVISORY

VERIFICATION AGENCY
VIPOND FIRE PROTECTION INC. 571 FERRY ROAD, WINNIPEG MANITOBA. R3H 0T5

MONITORING REQUIRMENT	
✓	MANITOBA BUILDING CODE
	BYLAW # 4303/86
	OTHER

TECHNICIAN CONDUCTING TEST
ALBERT PADUA

DATE:	March 20, 2012

WESCAN

SUBMITTAL SHEET

01/14/11

GENERAL CONTRACTOR
PCL CONSTRUCTORS CANADA
1540 GAMBLE PLACE
WINNIPEG, MANITOBA

ATTENTION: Jeff McKay

PROJECT: Rapid Transit

WESCAN'S JOB NO: E779

REFER TO
ITEM: FIRE ALARM
SHOP DRAWING: REVISED VIPOND FIRE ALARM SYSTEM

CONTRACTORS STAMP

REVIEWED ☒
REVIEWED AS NOTED ☐

This review is for the sole purpose of ascertaining conformance with the general design concept and shall not relieve the supplier from his responsibility for errors or omissions in the shop drawings or his responsibility for meeting all requirements of the contract documents and purchase order.

WESCAN ELECTRICAL MECHANICAL SERVICES

DATE: 1/14/2011

PER: DOUG LAGIMODIERE

APPROVAL STAMPS TO BE PLACED HERE

Engineer's Stamp

NOVA 3 ENGINEERING LTD.
REVIEWED ☒
REVIEWED AS MODIFIED ☐ BY
REVISE AND RE-SUBMIT ☐
NOT REVIEWED ☐ DATE Mar 10/11
"This review is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean approval of the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades."

Architect's Stamp

General Contractor's Stamp

REVIEWED
In accordance with the requirements of the prime contract
Per: Jeff McKay at 11:23 am, Jan 14, 2011
(PCL Constructors Canada Inc.)
X Review Completed ☐ Revisions Required

Wescan Electrical Mechanical Services
1049 Logan Ave, Winnipeg, Manitoba R3E 1P6 Telephone 204.786.3384 Fax 204.783.2750

FIRST FOR FIRE PROTECTION

VIPOND INC

est. 1945

St. Johns
Moncton
Ottawa
Toronto
Barrie
Mississauga
Stoney Creek
Kitchener
London
Windsor
Sudbury
Thunder Bay
Winnipeg
Regina
Saskatoon
Edmonton
Caribbean

Founded
1945

SOUTHWEST RAPID TRANSIT CORRIDOR

FIRE ALARM SYSTEM

R1

VIPOND FIRE PROTECTION, DIVISION OF VIPOND INC. www.vipond.ca
571 Ferry Road, Winnipeg, MB R3H 0T5 Telephone : (204) 783-2420 Fax: (204) 786-1321

PANEL AND ANNUNCIATOR

NOTE 1 : CLEAR SPACE SHALL BE MAINTAINED IN FRONT OF CONTROL UNITS EQUAL TO THE WIDTH OF THE DOOR ,BUT NOT LESS THAN 1000 mm

NOTE 2 : THE TOP OF THE CONTROL UNIT SHALL NOT BE MORE THAN 2400mm ABOVE THE FINISHED FLOOR

NOTE 3 : LEGEND OR OPERATING CONTROLS SHALL BE NOT MORE THAN 1800 MM ABOVE THE FINISHED FLOOR

PULL STATIONS

NOTE 1 : MANUAL STATIONS SHALL BE INSTALLED NOT LESS THAN 1200mm AND NOT MORE THAN 1400mm ABOVE THE FINISHED FLOOR LEVEL MEASURED FROM THE CENTRE OF THE MANUAL STATION(1200 mm ON CENTRE ONLY FOR THE CITY OF WINNIPEG)

NOTE 2 : MANUAL STATIONS SHALL BE INSTALLED SO AS TO BE VISIBLE AT ALL TIMES

NOTE 3 : WHERE POSSIBLE , INSTALL THE MANUAL STATION ON THE LATCH SIDE OF A SINGLE DOOR AT A MAXIMUM LATERAL DISTANCE OF 1500 MM FROM THE DOOR OPENING

AUDIBLE AND VISUAL SIGNAL DEVICES

NOTE 1 : WHERE CEILING HEIGHTS ALLOW, AUDIBLE SIGNAL DEVICES SHALL BE INSTALLED SO THAT THE TOP OF THE DEVICE WILL NOT BE LESS THAN 2300 mm ABOVE THE FINISHED FLOOR LEVEL (DOES NOT APPLY TO IN-SUITE SIGNALLING DEVICES)

NOTE 2 : WALL MOUNTED AUDIBLE DEVICES SHALL BE INSTALLED AT LEAST 150 mm BELOW THE CEILING, MEASURED TO THE TOP EDGE OF THE DEVICE

NOTE 3 : REFER TO INSTALLATION GUIDELINES PAGE 2 FOR WIRE CALCULATION CHART

AUDIBLE DEVICES FOR USE IN SUITES

NOTE 1 : WHERE SILENCEABLE MEANS ARE SEPERATELY INSTALLED OR INCORPORATED IN THE AUDIBLE DEVICE, THE SILENCING MEANS SHALL BE CLEARLY IDENTIFIED AND LOCATED NOT LESS THAN 1200 MM AND NOT MORE THAN 1400 mm ABOVE THE FINISHED FLOOR LEVEL MEASURED FROM THE CENTRE OF THE SILENCING MEANS

NOTE 2 : THE SILENCING MEANS SHALL BE INSTALLED AS TO BE VISIBLE AND ACCESSIBLE AT ALL TIMES

VISUAL SIGNAL DEVICES

NOTE 1 : WALL MOUNTED VISUAL SIGNAL DEVICES SHALL BE INSTALLED SUCH THAT THE ENTIRE LENSE IS NOT LESS THAN 2000 mm AND NOT MORE THAN 2400 mm ABOVE THE FINISHED FLOOR

COMBINATION AUDIBLE AND VISUAL SIGNAL DEVICES

NOTE 1 : WHERE CEILING HEIGHTS ALLOW, AUDIBLE/VISUAL SIGNAL DEVICES SHALL BE INSTALLED SO THAT THE TOP OF THE DEVICE WILL NOT BE LESS THAN 2300 mm AND NOT MORE THAN 2400 mm ABOVE THE FINISHED FLOOR LEVEL

FIRE DETECTORS (SMOKE OR HEAT)

NOTE 1 : A CLEAR SPACE OF AT LEAST 450 mm SHALL BE MAINTAINED BETWEEN A DETECTOR AND ANY OBSTRUCTION. OBSTRUCTIONS AND PROTRUSIONS NOT EXCEEDING 100 mm FROM THE CEILING NEED NOT BE CONSIDERED AS IMPINGING ON THIS CLEAR SPACE

NOTE 2 : DETECTORS SHALL BE INSTALLED ON THE CEILING NOT LESS THAN 100 mm FROM THE WALL, MEASURED TO THE EDGE OF THE DETECTOR

NOTE 3 : DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIRFLOW OR CLOSER THAN 450 mm FROM AN AIR SUPPLY OUTLET OR FROM AN AIR EXHAUST OUTLET MEASURED TO THE EDGE OF THE DETECTOR

DUCT SMOKE DETECTORS

NOTE 1 : DUCT TYPE SMOKE DETECTORS SHALL BE INSTALLED IN THE MAIN SUPPLY DUCT, DOWNSTREAM OF THE MIXING BOX,FILTERS AND FAN. WHERE DUCT TYPE SMOKE DETECTORS CANNOT BE INSTALLED IN THE MAIN SUPPLY DUCT, THEY SHALL BE INSTALLED IN EACH OF THE BRANCH LINES AS CLOSE AS PRACTICAL TO THE SUPLY FAN DOWNSTREAM OF THE MIXING BOX, FILTERS AND FAN.

END OF LINE DEVICES

NOTE 1 : END OF LINE DEVICES FOR ELECTRICAL SUPERVISION SHALL BE LOCATED IN A SEPERATE ENCLOSURE, INSTALLED LESS THAN 1800 mm ABOVE FINISHED FLOOR LEVEL MEASURED FROM THE CENTRE OF THE END OF LINE DEVICE, AND LOCATED BEYOND THE LAST DEVICE IN THE CIRCUIT OR TERMINATED IN A CONTROL UNIT OR TRANSPONDER.

NOTE 2 : END OF LINE DEVICES FOR ONE FIELD DEVICE ON A CIRCUIT MAY BE LOCATED WITHIN THAT FIELD DEVICE.

NOTE 2 : END OF LINE DEVICES SHALL HAVE AN IDENTIFYING LABEL SECURELY ATTACHED TO THE FRONT OF THE COVERPLATE, LISTING THE ZONE SERVED.

FAULT ISOLATION MODULES

NOTE 1 : FAULT ISOLATION MODULES SHALL BE UTILIZED WHEN ENTERING AND LEAVING EACH FIRE ALARM ZONE, AS REQUIRED BY THE NATIONAL BUILDING CODE

NOTE 2 : FIELD DEVICES MONITORING MECHANICAL EQUIPMENT SERVING OTHER FLOORS, FOR EXAMPLE WATERFLOW DEVICES ON SPRINKLER SYSTEMS OR DUCT SMOKE DETECTORS ON HVAC SYSTEMS SERVING OTHER FLOORS, ARE CONSIDERED TO BE PART OF THE SAME AREA SPECIFIED IN NOTE 1

NOTE 3 : FAULT ISOLATION MODULES SHALL BE VISIBLE AND ACESSIBLE AT ALL TIMES, AND LOCATED BEFORE THE FIRST DEVICE AND BEYOND THE LAST DEVICE IN ANY ZONE.

NOTE 4 : ISOLATOR MODULES SHALL BE INSTALLED ON EACH SIDE OF A FIRE SEPERATION AND SHALL BE OFFSET A MINIMUM OFF 400 mm HORIZONTALLY AND NOT LOCATED WITHIN THE SAME STUD SPACE

NOTE 5 : WHERE AVAILIABLE, FAULT ISOLATION MODULES SHOULD BE LOCATED IN A FIRE SEPERATED ELECTRICAL ROOM

NOTE 6 : MAXIMUN NUMBER OF DETECTORS BETWEEN ISOLATOR MODULES NOT TO EXCEED 25

NOTE 7 : REFER TO INSTALLATION REQUIREMENTS PAGE 3 FOR DETAILED DRAWING.

NOTE: THIS DOCUMENT IS FOR QUICK REFERENCE ONLY. FOR EXACT REQUIREMENTS REFER TO STANDARD CAN/ULC-S524-06 INSTALLATION OF FIRE ALARM SYSTEMS

NO.	DATE	DESCRIPTION

PROJECT: FIRE ALARM INSTALLATION GUIDELINES

TITLE: TECHNICAL DETAILS PAGE 1

DRAWN: [illegible] DATE: JUNE 12,2006 SUBSTRATE:

CHKD: [illegible] SCALE: NTS

VIPOND SYSTEMS GROUP

HORN/STROBES AT 15/75 cd
DRAW 120 mA.

SIGNAL CIRCUIT WIRE CALCULATION CHART

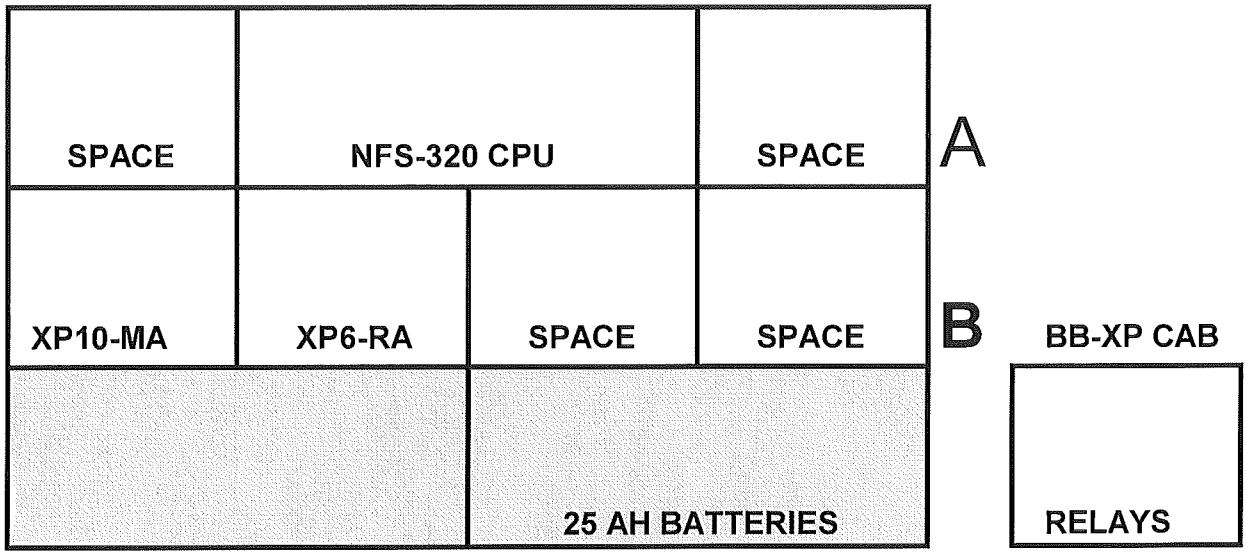
AWG SIZE	CURRENT DRAW (MILLIAMPS)														
	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
10	12000	6000	4000	3000	2400	2000	1720	1500	1335	1200	1090	1000	925	860	800
12	7500	3750	2500	1880	1500	1250	1070	940	835	750	680	625	570	535	500
14	4800	2400	1600	1200	960	800	690	600	535	480	435	400	370	345	320
16	3000	1500	1000	750	600	500	430	375	335	300	275	250	230	215	200
18	1880	940	630	470	380	310	270	235	210	190	170	155	145	135	125
20	1200	600	400	300	240	200	170	150	135	120	110	100	90	85	80
22	750	375	250	185	150	125	110	95	85	75	70	65	60	55	50
24	470	235	160	120	95	80	70	60	55	50	45	40	35	35	30
	LENGHT IN FEET														

THIS PANEL COMES WITH 4 SIGNAL CCTS, PLEASE REFER TO ATTACHED SIGNAL CCT WIRE CHART FOR WIRE SIZE AND DISTANCE.

H/S CAN BE WIRED ON THE SAME CCT.

FIRE ALARM
INSTALLATION GUIDELINES
TECHNICAL DETAILS PAGE 2

JOB NAME: SOUTH WEST RAPID TRANSIT



LCD DISPLAY AND CONTROLS ARE LOCATED IN ROW "A" (NFS-320)

ADDRESSABLE LOOP IS LOCATED IN ROW "A" (NFS-320)

SIGNAL CIRCUITS 1 TO 4 ARE LOCATED IN ROW "A" (NFS-320)

ZONES 1 TO 10 ARE LOCATED IN ROW "B" (XP10-MA)

RELAYS 1 TO 6 ARE LOCATED IN ROW "B" (XP6-RA)

CABINET SIZE IS "B"

LOAD RELAYS ARE MOUNTED IN BB-XP CABINET

REMOTE ANNUNCIATOR

PULL 2 PAIR #18 TWS AND 2#14 FROM "FACP" TO THIS PANEL

PANEL ALSO REQUIRES 110 V AC TO POWER HEATER

REFER TO ZONE SCHEDULE AS ON PRINT C5-E2202-T

NFS-320C

Intelligent Addressable Fire Alarm System

NOTIFIER® by Honeywell

Intelligent Fire Alarm Control Panels

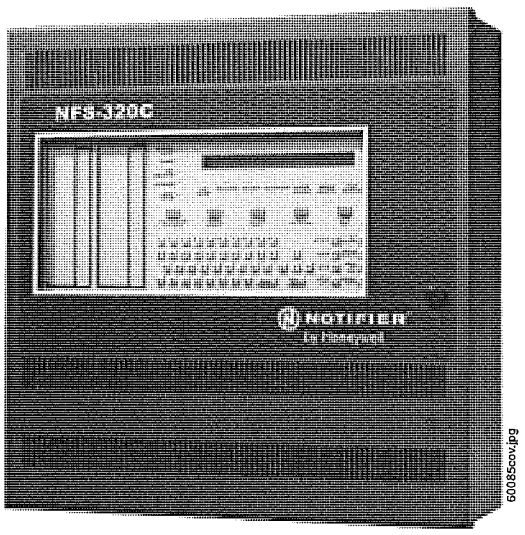
General

The NFS-320C intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

In stand-alone or network configurations, ONYX Series products meet virtually every application requirement.

With modularity and ease of system planning, the NFS-320C can be configured with just a few devices for small building applications, or for a large campus or high-rise application. Simply add additional peripheral equipment to suit the application. For example, certain geographic regions such as Canada have specific LED annunciation requirements. To provide up to 48 zones/points in the same cabinet, add an optional ACM Series annunciator (sold separately).

NOTE: *"CPU-320" refers to the main circuit board that ships with NFS-320C.*



NFS-320C

Features

- Listed to Standard ULC-S527-99.
  UL-listed to UL standard 864, Ninth edition.
- One isolated intelligent Digital Communications Loop (DCL) Style 4, 6 or 7.
- Up to 159 detectors (any mix of ion, photo, thermal, or multi-sensor) and 159 modules (Addressable pull station, normally-open contact devices, two-wire smoke, notification, or relay). 318 devices maximum.
- Standard 80-character display.
- Network options:
  - High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NCA-2, DVC, ONYXWorks, NCS, NFS-3030, NFS-640, and NCA).
  - Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), NCA-2, DVC, ONYXWorks, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC is used in network paging.
- 6.0 amp power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, Wheelock, or Gentex strobe synchronization.
- Built-in Alarm, Trouble, Security, and Supervisory relays.
- VeriFire® Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Optional universal 318-point DACT.
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Autoprogramming and Walk Test reports.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.
- March time / temporal / Canadian two-stage coding, 20 ppm and temporal / strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire Tools program check, compare, simulate.
- Full QWERTY keypad.
- Battery charger supports 18 – 200 amp hour batteries.
- Non-alarm points for lower priority functions.
- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.

FLASHSCAN® INTELLIGENT FEATURES:

- Poll up to 318 devices in less than two seconds.
- Activate up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol (U.S. Patent 5,539,389).
- Manual sensitivity adjustment — nine levels (see individual device information for available settings)
- Pre-alarm ONYX intelligent sensing — nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows:
  - **Ion** – 0.5 to 2.5%/foot obscuration.
  - **Photo** – 0.5 to 2.35%/foot obscuration.
  - **Laser (VIEW®)** – 0.02 to 2.0%/foot obscuration.
  - **Acclimate Plus™** – 0.5 to 4.0%/foot obscuration.
  - **IntelliQuad** – 1.0 to 4.0%/foot obscuration.
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode: In the unlikely event that the FACP's microprocessor fails, FlashScan detectors revert to degraded operation and can activate the NAC circuits and

alarm relay. Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.

- Multi-detector algorithm involves nearby detectors in alarm decision (U.S. Patent 5,627,515).
- Automatic detector sensitivity testing (NFPA-72 compliant).
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

FSC-851 INTELLIQUAD ADVANCED MULTI-CRITERIA DETECTOR

- Detects all four major elements of a fire (smoke, heat, CO, and flame).
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.
- Six sensitivity levels.

FSL-751A VIEW (VERY INTELLIGENT EARLY WARNING) SMOKE DETECTION TECHNOLOGY:

- Revolutionary spot laser design.
- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- No moving parts to fail or filters to change.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

FAPT-851A ACCLIMATE PLUS LOW-PROFILE INTELLIGENT MULTI-SENSOR:

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- FlashScan or classic mode compatible with NFS2-640, NFS-320(C).
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

RELEASING FEATURES:

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO_2 listed.

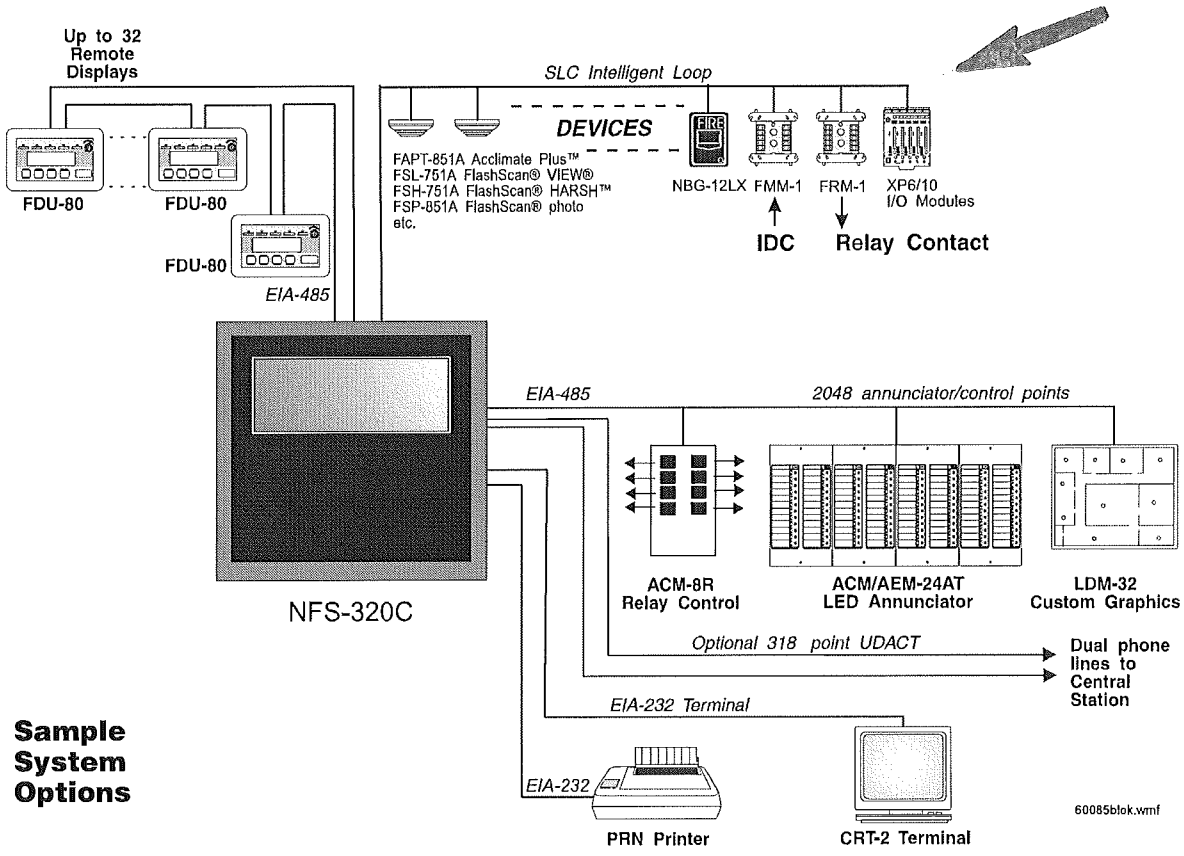
HIGH-EFFICIENCY OFFLINE SWITCHING 3.0 AMP POWER SUPPLY (6.0 A IN ALARM):

- 120 VAC.
- Displays battery current/voltage on panel (with display).

FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS-320C is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). FlashScan is an all-digital protocol that gives superior precision and high noise immunity.

Sample System Options



In addition to providing quick identification of an active input device, this new protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-320C to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds. The microprocessor-based FlashScan detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.

ONYX Intelligent Sensing

Intelligent sensing is a set of software algorithms that provides the NFS-320C with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the high-speed microcomputer used by the NFS-320C.

Drift Compensation and Smoothing: Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

Maintenance Warnings: When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust: Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm: Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Cooperating Multi-Detector Sensing: A patented feature of ONYX intelligent sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Field Programming Options

Autoprogram. This timesaving feature is a special software routine. The FACP "learns" what devices are physically connected and automatically loads them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

Keypad Program Edit (with KDM-R2) The NFS-320C, like all NOTIFIER intelligent panels, has the exclusive feature of program creation and editing capability from the front panel keypad, ***while continuing to provide fire protection.*** The architecture of the NFS-320C software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the NFS-320C simultaneously monitors other (already installed) points for alarm conditions.

VeriFire Tools is an offline programming and test utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows®-based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the NFS-320C in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.

Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS-320C's flexible system design.

Wiring: When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the *NFS-320/C/E Installation Manual.*

It is critical that all mounting holes of the NFS-320C are secured with a screw or standoff to ensure continuity of Earth Ground.

Networking: If networking two or more control panels, each unit requires a Network Control Module or High-Speed Network Control Module (see "Network Options" on page 5). These modules can be installed in any option board position (see manual), and additional option boards can be mounted in front of them.

KDM-R2 Controls and Indicators

Program Keypad: QWERTY type (keyboard layout).

12 LED Indicators: Power; Fire Alarm; Pre-Alarm; Security; Supervisory; System Trouble; Signals Silenced; Points Disabled; Control Active; Abort; Pre-Discharge; Discharge.

Keypad Switch Controls: Acknowledge/Scroll Display; Signal Silence; Drill; System Reset; Lamp Test.

LCD Display: 80 characters (2 x 40) with long-life LED backlight.

Configuration Guidelines

The NFS-320C system ships assembled; description and some options follow.

Note: Stand-alone and network systems require a main display. On stand-alone systems, the panel's keypad provides the required display. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation device is required.

NFS-320C: The standard, factory-assembled NFS-320C system includes the following components: one control panel mounted on chassis (120 V operation — ships with grounding cable, battery interconnect cables, and document kit); one integral power supply mounted to the control panel; one primary display KDM-R2 keypad/display; and one cabinet for surface or semi-flush mounting. *Purchase batteries separately. One or two option boards may be mounted to the NFS-320 cabinet, with one visible to the left of the display and one inside; additional option boards can be utilized in remote cabinets. See Canadian applications manual addendum 52747.*

NFS-320C-FR: Same as NFS-320C but in French language.

TR-320: Trim ring for the NFS-320C cabinet.

Option Modules

FCPS-24S6C/8C: Remote 6 and 8 A power supplies. *See DN-6297.* For use only as a NAC expander.

COMPATIBLE DEVICES, EIA-232 PORTS

PRN-6: 80-column printer. *See DN-6956.*

VS4095/5: Keltron printer, 40-column, 24 V. Mounted in external backbox. *See DN-3260.* (Not ULC-listed.)

COMPATIBLE DEVICES, EIA-485 PORTS

ACM-24AT: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. *See DN-6862.*

AEM-24AT: Same LED and switch capabilities as ACM-24AT, expands the ACM-24AT to 48, 72, or 96 points. *See DN-6862.*

ACM-48A: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. *See DN-6862.*

AEM-48A: Same LED capabilities as ACM-48A, expands the ACM-48A to 96 points. *See DN-6862.*

TM-4: Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit; mount on NFS-320C chassis or remotely. *See DN-6860.*

LCD-80/FDU-80: Remote LCD display, 80 characters, with LEDs. *See LCD-80/-80TM (DN-3198) and FDU-80 (DN-6820).*

LDM: Lamp Driver Modules LDM-32, LDM-E32, and LDM-R32; remote custom driver modules. *See LDM data sheet, DN-0551.*

ACM-8R: Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires. *See ACM-8R data sheet, DN-3558.*

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits. *See SCS data sheet, DN-4818.*

UDACT: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-4867.*

UZC-256: Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM®-compatible PCs (requires optional programming kit). Mounts in **BB-UZC** or other compatible chassis (purchased separately). *See UZC-256 data sheet, DN-3404.*

COMPATIBLE INTELLIGENT DEVICES

BEAMHK: Heating kit for transmitter/receiver unit of FSB-200A/-200SA below. *See DN-6985.*

BEAMHRK: Heating kit for use with the reflector of FSB-200A/-200SA below. *See DN-6985.*

BEAMLRK: Long-range accessory kit, FSB-200A/-200SA below.

BEAMMRK: Multi-mount kit, FSB-200A/-200SA below.

BEAMSMK: Surface-mount kit, FSB-200A/-200SA below.

FSB-200A: Intelligent beam smoke detector. *See DN-6985.*

FSB-200SA: Intelligent beam smoke detector with integral sensitivity test. *See DN-6895.*

FSC-851A: FlashScan IntelliQuad Advanced Multi-Criteria Detector. *See DN-60412.*

FSI-851A: Low-profile FlashScan ionization detector. *See DN-6934.*

FSP-851A: Low-profile FlashScan photoelectric detector. *See DN-6935.*

FSP-851TA: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal. *See DN-6935.*

FST-851A: FlashScan thermal detector 135°F (57°C). *See DN-6936.*

FST-851RA: FlashScan thermal detector 135°F (57°C) with rate-of-rise. *See DN-6936.*

FST-851HA: FlashScan 190°F (88°C) high-temperature thermal detector. *See DN-6936.*

DNR: InnovairFlex low-flow non-relay duct-detector housing (order FSP-851 separately). Replaces FSD-751PL/FSD-751RPL. *See DN-60429.*

DNRW: Same as above with NEMA-4 rating, watertight. *See DN-60429.*

FAPT-851A: FlashScan Acclimate Plus low-profile multi-sensor detector. *See DN-6937.*

FSL-751A: FlashScan VIEW laser photo detector. *See DN-6886.*

B224RBA: Low-profile relay base.

B224BIA: Isolator base for low-profile detectors.

B710LPA: Low-profile base. Standard U.S. style.

B501A: European-style, 4" (10.16 cm) base.

B200SA: Intelligent sounder base, capable of producing a variety of tone patterns including ANSI Temporal 3. Compatible with sychronization protocol. See DN-60054.

B200SRA: Intelligent sounder base, Temporal 3 or Continuous tone. See DN-60054.

FMM-1A: FlashScan monitor module. *See DN-6720.*

FDM-1A: FlashScan dual monitor module. *See DN-6720.*

FZM-1A: FlashScan two-wire detector monitor module. *See DN-6720.*

FMM-101A: FlashScan miniature monitor module. *See DN-6720.*

FCM-1-RELA: FlashScan releasing control module. *See DN-60390.*

FCM-1A: FlashScan NAC control module. *See DN-6724.*

FRM-1A: FlashScan relay module. *See DN-6724.*

NBG-12LX: Manual pull station, addressable. *See DN-6726.*

N-MPS series: Manual pull stations, addressable and conventional. For use in Canada only. *See DN-5497.*

FM-955: Addressable pull station with two FMM-101A modules.

FM-9551: Addressable pull station with one FMM-101A module.

FM-955-20C: Addressable pull station with two open contacts.

FM-9551S20C: Addressable pull station with one open and one closed extra contacts.

ISO-XA: Isolator module. *See DN-2243.*

XP6-CA: FlashScan six-circuit supervised control module. *See DN-6924.*

XP6-MAA: FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. *See DN-6925.*

XP6-RA: FlashScan six-relay (Form-C) control module. *See DN-6926.*

XP10-MA: FlashScan ten-input monitor module. *See DN-6923.*

NETWORK OPTIONS

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. *See DN-6861.*

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed network communications modules. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

RPT-W, RPT-F, RPT-WF: Standard-network repeater board with wire connection (RPT-W), fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). *See DN-6971.*

ONYXWorks-NW: UL-listed graphics PC workstation for standard NOTI•FIRE•NET with wire media. Includes NFN Gateway wire version (NFN-GW-PC-W) and 19" color flat-screen LCD monitor. Each ONYXWorks workstation consumes one of 103 network addresses. *See DN-7048.*

ONYXWORKS-HNW: UL-listed graphics PC workstation for wire high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNW) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

ONYXWorks-NF: UL-listed graphics PC workstation for standard NOTI•FIRE•NET with fiber media. Includes NFN Gateway wire version (NFN-GW-PC-F) and 19" color flat-screen LCD monitor. Each ONYXWorks workstation consumes one of 103 network addresses. *See DN-7048.*

ONYXWORKS-HNSF: UL-listed graphics PC workstation for single-mode-fiber high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNSF) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

ONYXWORKS-HNMF: UL-listed graphics PC workstation for multi-mode-fiber high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNMF) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

NFN-GW-EM-3: NFN Gateway, embedded.

OTHER OPTIONS

DPI-232: Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals; mount on NFS-320 chassis. *See DN-6870.*

VeriFire-TCD: VeriFire Tools CD-ROM. Contains programming software for the ONYX Series. Includes local panel connection cable. *See DN-6871.*

BAT Series: Batteries. NFS-320 utilizes two 12 volt, 18 to 200 AH batteries. This series of products replaces the previous PS Series. *See DN-6933.*

NFS-LBB: Battery Box (required for batteries over 25 AH).

NFS-LBBR: Same as above, but red.

411 Series: Slave Digital Alarm Communicator Transmitters. *See DN-6619.*

NFS-320-RB: Replacement CPU. NOTE: Keypad must be removed before shipping old unit out for repair.

NFS-320-RBC-FR: Replacement CPU french. NOTE: Keypad must be removed before shipping old unit out for repair.

BB-UZC: Backbox for housing the UZC-256. Required for NFS-320 applications, black. For red, order BB-UZC-R.

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signaling Line Circuits 1
- Intelligent detectors 159
- Addressable monitor/control modules 159
- Programmable internal hardware and output circuits 4
- Programmable software zones 99
- Special programming zones 14
- LCD annunciators per FACP 32
- ACS annunciators per FACP ..... 32 addresses x 64 points

Specifications

- Primary input power, **CPU-320 board:** 120 VAC, 50/60 Hz, 3.0 A.
- Total output 24 V power: 6.0 A in alarm.

NOTE: *The power supply has a total of 6.0 A of available power. This is shared by all internal circuits.*

- Standard notification circuits (4): 1.5 A each.
- Resettable regulated 24V power: 1.25 A.
- Two non-resettable regulated 24V power outputs. One at 1.25 A and the other at 0.50 A.
- Non-resettable 5V power: 0.15 A.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 25 AH.
- Float rate: 27.6 V.

Cabinet Specifications

- NFS-320C cabinet dimensions: Backbox: 18.12 in. (46.025 cm) width; 18.12 in. (46.025 cm) height; 5.81 in. (14.76 cm) depth.
- Door: 18.187 in. (46.185 cm) width; 18.40 in. (46.736 cm) height; 0.75 in. (1.905 cm) depth.

When using trim ring TR-320, mount backbox with at least 1 inch (2.54 cm) between wall surface and front of backbox, to allow door to open fully past the trim ring. The TR-320 molding width is 0.905 in. (2.299 cm).

CUSTOM CABINET
CAB "B"

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

Agency Listings and Approvals

The listings and approvals below apply to the basic NFS-320C control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL/ULC Listed:** file S635
- **FM Approved**
- **CSFM:** 7165-0028:0243

Standards

The NFS-320C complies with the following ULC Standards and NFPA 72 Fire Alarm Systems requirements:

- **ULC-S527-99**
- **ULC Listed file:** UOJC, S635
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires TM-4).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires TM-4).
- **PROPRIETARY** (Automatic, Manual, Waterflow and Sprinkler Supervisory). *Not applicable for FM.*
- **CENTRAL STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires UDACT).
- **EMERGENCY VOICE/ALARM.**

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ISO 9001 CERTIFIED
QUALITY SYSTEMS

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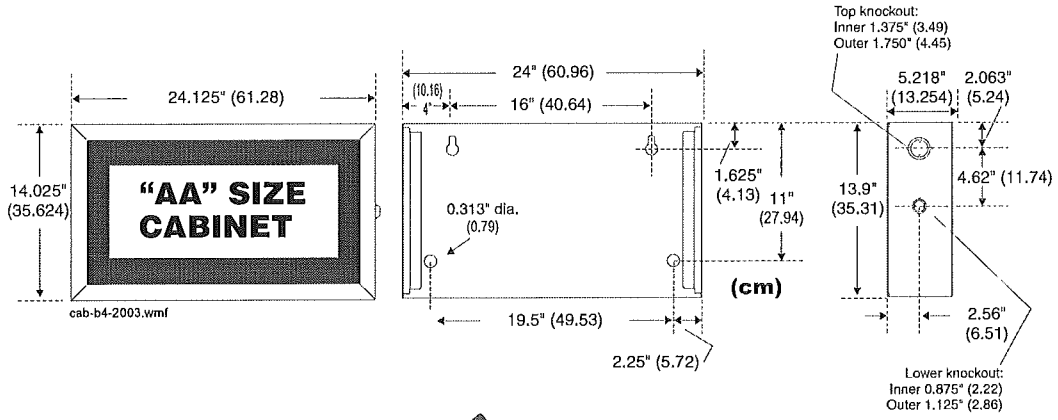
"AA" SIZE CABINET
24.125" (61.28)
14.025" (35.624)
24" (60.96)
(10.16) 4"
16" (40.64)
0.313" dia. (0.79)
1.625" (4.13)
11" (27.94)
19.5" (49.53)
2.25" (5.72)
(cm)
Top knockout: Inner 1.375" (3.49) Outer 1.750" (4.45)
5.218" (13.254)
2.063" (5.24)
4.62" (11.74)
13.9" (35.31)
2.56" (6.51)
Lower knockout: Inner 0.875" (2.22) Outer 1.125" (2.86)
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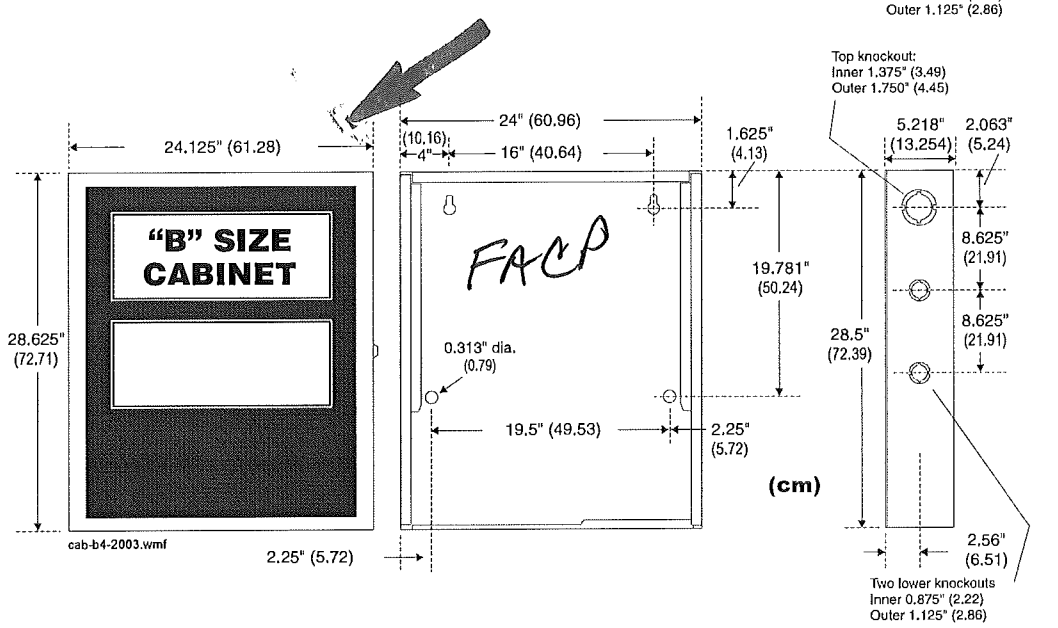
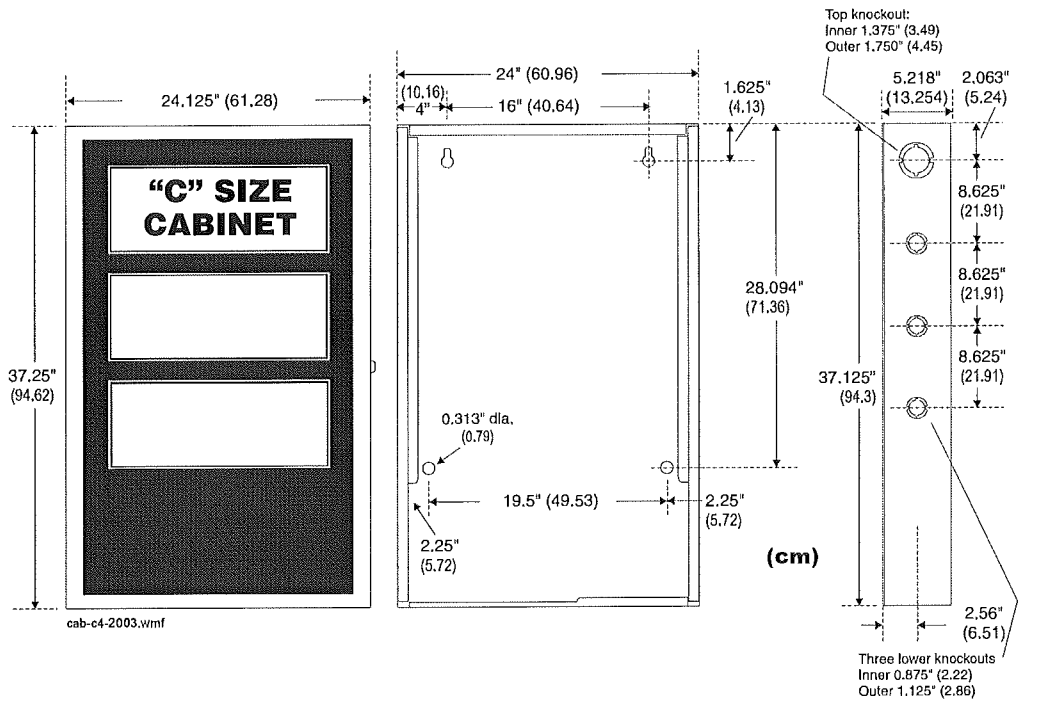

"B" SIZE CABINET
FACP
24.125" (61.28)
28.625" (72.71)
24" (60.96)
(10.16) 4"
16" (40.64)
1.625" (4.13)
19.781" (50.24)
0.313" dia. (0.79)
19.5" (49.53)
2.25" (5.72)
(cm)
Top knockout: Inner 1.375" (3.49) Outer 1.750" (4.45)
5.218" (13.254)
2.063" (5.24)
8.625" (21.91)
8.625" (21.91)
28.5" (72.39)
2.56" (6.51)
Two lower knockouts Inner 0.875" (2.22) Outer 1.125" (2.86)
cab-b4-2003.wmf


"C" SIZE CABINET
24.125" (61.28)
37.25" (94.62)
24" (60.96)
(10.16) 4"
16" (40.64)
1.625" (4.13)
28.094" (71.36)
0.313" dia. (0.79)
19.5" (49.53)
2.25" (5.72)
2.25" (5.72)
(cm)
Top knockout: Inner 1.375" (3.49) Outer 1.750" (4.45)
5.218" (13.254)
2.063" (5.24)
8.625" (21.91)
8.625" (21.91)
8.625" (21.91)
37.125" (94.3)
2.56" (6.51)
Three lower knockouts Inner 0.875" (2.22) Outer 1.125" (2.86)
cab-c4-2003.wmf

ZONE MODULE = MTG INTFACE

XP10-M(A)

Ten-Input Monitor Module

NOTIFIER® by Honeywell

Addressable Devices

General

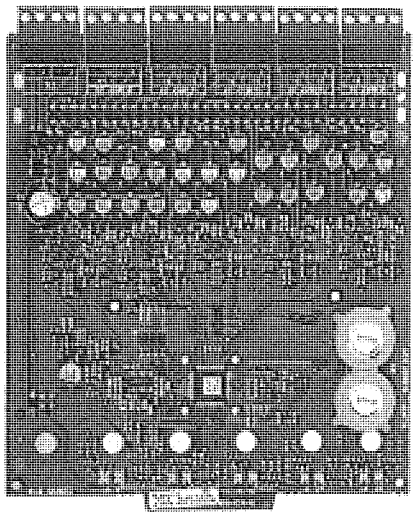
The **XP10-M ten-input monitor module** is an interface between a control panel and normally open contact devices in intelligent alarm systems such as pull stations, security contacts, or flow switches.

The first address on the XP10-M is set from 01 to 150 and the remaining modules are automatically assigned to the next nine higher addresses. Provisions are included for disabling a maximum of two unused addresses.

The supervised state (normal, open, or short) of the monitored device is sent back to the panel. A common SLC input is used for all modules, and the initiating device loops share a common supervisory supply and ground — otherwise each monitor operates independently from the others.

Each XP10-M module has panel-controlled green LED indicators. The panel can cause the LEDs to blink, latch on, or latch off.

***NOTE:** Unless otherwise specified, the term XP10-M is used in this data sheet to refer to both the XP10-M and the XP10-MA (ULC-listed version).*



Features

- Listed to UL Standard 864, 9th edition.
- Ten addressable Class B or five addressable Class A initiating device circuits.
- Removable 12 AWG (3.31 mm²) to 18 AWG (0.821 mm²) plug-in terminal blocks.
- Status indicators for each point.
- Unused addresses may be disabled.
- Rotary address switches.
- Class A or Class B operation.
- FlashScan® or CLIP operation.
- Flexible mounting options.
- Mounting hardware included.

Specifications

Standby current: 3.5 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases).

Alarm current: 55 mA (assumes all ten LEDs solid ON).

Temperature range: 32°F to 120°F (0°C to 49°C) for UL applications; –10°C to +55°C for EN54 applications.

Humidity: 10% to 85% noncondensing for UL applications; 10% to 93% noncondensing for EN54 applications.

Dimensions: 6.8" (172.72 mm) high x 5.8" (147.32 mm) wide x 1.25" (31.75 mm) deep.

Shipping weight: 0.76 lb. (0.345 kg) including packaging.

Mounting options:

- CHS-6 chassis: Up to 6 modules.
- BB-25 cabinet: Up to 6 modules.
- BB-XP cabinet: One or two modules.
- CAB-4 Series cabinet: See *DN-6857.*
- EQ Cabinet Series: See *DN-60229.*

Wire gauge: 12 AWG (3.31 mm²) to 18 AWG (0.821 mm²).

Power-limited circuits must employ type FPL, FPLR, or FPLP cable as required by Article 760 of the NEC.

XP10-M is shipped in Class B position; remove shunt for Class A operation.

Maximum SLC wiring resistance: 40 or 50 ohms, panel dependent.

Maximum IDC wiring resistance: 1500 ohms.

Maximum IDC voltage: 10.2 VDC.

Maximum IDC current: 240 µA.

Agency Listings and Approvals

The listings and approvals below apply to the XP10-M(A) Ten-Input Monitor Module. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635
- **ULC Listed:** S635 (XP10-MA)
- **CSFM** approved: 7300-0028:219
- **FM approved**
- **MEA approved:** 43-02-E
- **Maryland State Fire Marshal** approved: Permit #2106

Product Line Information

XP10-M: Ten-input monitor module.

XP10-MA: Same as above with ULC Listing.

BB-XP: Optional cabinet for one or two modules. ***Dimensions, DOOR:*** 9.234" (23.454 cm) wide (9.484" [24.089 cm] including hinges), x 12.218" (31.0337 cm) high, x 0.672" (1.7068 cm) deep; ***BACKBOX:*** 9.0" (22.860 cm) wide (9.25" [23.495 cm] including hinges), x 12.0" (30.480 cm) high x 2.75" (6.985 cm); ***CHASSIS (installed):*** 7.150" (18.161 cm) wide overall x 7.312" (18.5725 cm) high interior overall x 2.156" (5.4762 cm) deep overall.

BB-25: Optional cabinet for up to six modules mounted on CHS-6 chassis *(below)*. ***Dimensions, DOOR:*** 24.0" (60.96 cm) wide x 12.632" (32.0852 cm) high, x 1.25" (3.175 cm) deep, hinged at bottom; ***BACKBOX:*** 24.0" (60.96 cm) wide x 12.550" (31.877 cm) high x 5.218" (13.2537 cm) deep.

CHS-6: Chassis, mounts up to six modules in a CAB-4 Series *(see DN-6857)* cabinet, EQ Cabinet Series *(see DN-60229)*, or BB-25.

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ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

AUX RELAYS = PANEL MTG.

XP6-R

Six Relay Control Module

NOTIFIER® by Honeywell

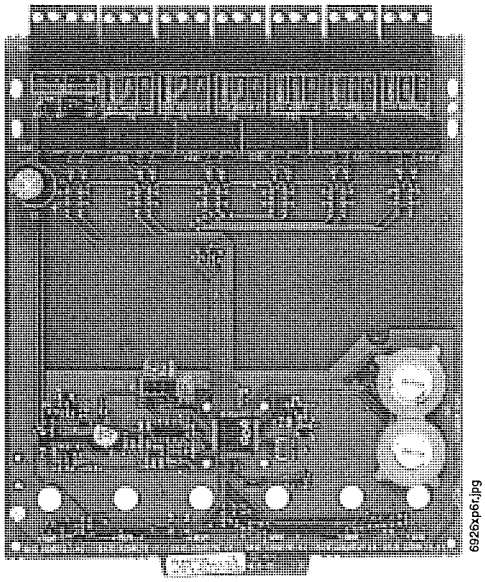
Intelligent Fire Alarm Control Panels

General

NOTIFIER's XP6-R six-relay control module provides an intelligent fire alarm system with six Form-C relays.

The first module is addressed from 01 to 154 while the remaining modules are automatically assigned to the next five higher addresses. Provisions are included for disabling a maximum of three unused modules. A single isolated set of dry relay contacts is provided for each module address, which is capable of being wired for either a normally-open or normally-closed operation. The module allows the control panel to switch these contacts on command. No supervision is provided for the controlled circuit.

Each XP6-R module has panel-controlled green LED indicators. The panel can cause the LEDs to blink, latch on, or latch off.



Features

- Six addressable Form-C relay contacts.
- Removable 12 AWG (3.25 mm²) to 18 AWG (0.9 mm²) plug-in terminal blocks.
- Status indicators for each point.
- Unused addresses may be disabled.
- Rotary address switches.
- FlashScan® or CLIP operation.
- Mount one or two modules in a BB-XP cabinet (optional).
- Mount up to six modules on a CHS-6 chassis in a CAB-3 Series, CAB-4 Series, EQ Series, or BB-25 cabinet (optional).
- Mounting hardware included.

Specifications

Standby current: 1.45 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases).

Alarm current: 32 mA (assumes all six relays have been switched once and all six LEDs solid ON).

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity: 10% to 93% noncondensing.

Dimensions: 6.8" (172.72 mm) high x 5.8" (147.32 mm) wide x 1.0" (25.40 mm) deep.

Shipping weight: 1.1 lb. (0.499 kg) including packaging.

Mounting options: CHS-6 chassis, BB-25 cabinet, BB-XP cabinet, CAB-3 Series (see DN-3549) cabinet, CAB-4 Series (see DN-6857) cabinet, or EQ Series cabinet.

Wire gauge: 12 AWG (3.25 mm²) to 18 AWG (0.9 mm²).

Maximum SLC wiring resistance: 40 or 50 ohms, panel dependent.

Relay current: 30 mA/relay pulse (15.6 ms pulse duration), pulse under panel control.

Relay contact ratings: 30 VDC; 70.7 VAC.

Current ratings:

- 3.0 A @ 30 VDC maximum, resistive, non-coded.
- 2.0 A @ 30 VDC maximum, resistive, coded.
- 1.0 A @ 30 VDC maximum, inductive (L/R = 2 ms), coded.
- 0.5 A @ 30 VDC maximum, inductive (L/R = 5 ms), coded.
- 0.9 A @ 110 VDC maximum, resistive, non-coded.
- 0.9 A @ 125 VAC maximum, resistive, non-coded.
- 0.7 A @ 70.7 VAC maximum, inductive (PF = 0.35), non-coded.
- 0.3 A @ 125 VAC maximum, inductive (PF = 0.35), non-coded.
- 1.5 A @25 VAC maximum, inductive (PF = 0.35), non-coded.
- 2.0 A @25 VAC maximum, inductive (PF = 0.35), non-coded.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635
- **ULC Listed:** S635 (XP6-RA)
- **MEA Listed:** 368-01-E
- **CSFM:** 7300-0028:219
- **Maryland State Fire Marshall:** Permit # 2099
- **FM Approved** (Light Protective Signaling Only)

Product Line Information

XP6-R: Six-relay control module.

XP6-RA: Same as above with ULC Listing.

BB-XP: Optional cabinet for one or two modules. Dimensions, DOOR: 9.234" (23.454 cm) wide (9.484" [24.089 cm] including hinges), x 12.218" (31.0337 cm) high, x 0.672" (1.7068 cm) deep; BACKBOX: 9.0" (22.860 cm) wide (9.25" [23.495 cm] including hinges), x 12.0" (30.480 cm) high x 2.75" (6.985 cm); CHASSIS (installed): 7.150" (18.161 cm) wide overall x 7.312" (18.5725 cm) high interior overall x 2.156" (5.4762 cm) deep overall.

BB-25: Optional cabinet for up to six modules mounted on CHS-6 chassis (below). Dimensions, DOOR: 24.0" (60.96 cm) wide x 12.632" (32.0852 cm) high, x 1.25" (3.175 cm) deep, hinged at bottom; BACKBOX: 24.0" (60.96 cm) wide x 12.550" (31.877 cm) high x 5.218" (13.2537 cm) deep.

CHS-6: Chassis, mounts up to six modules in a CAB-3 Series (see DN-3549), CAB-4 Series (see DN-6857), or EQ Series (see DN-60229) cabinet.

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www.notifier.com

LOAD RELAY CABINET - MTG BESIDE FACP

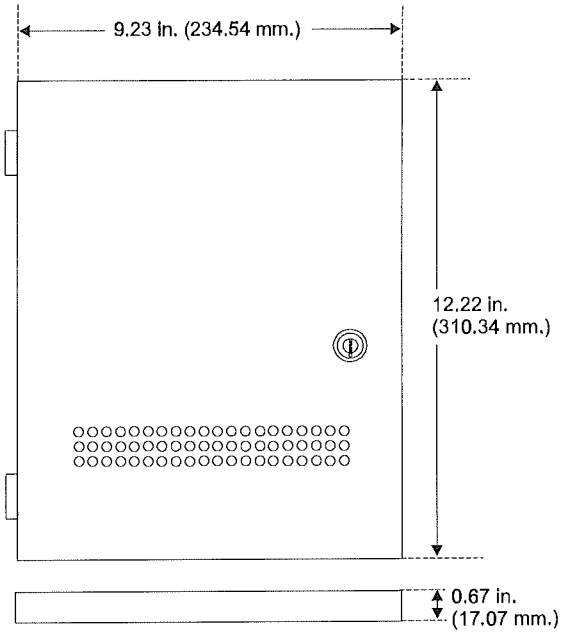
BB-XP Cabinet

50897 Revision B

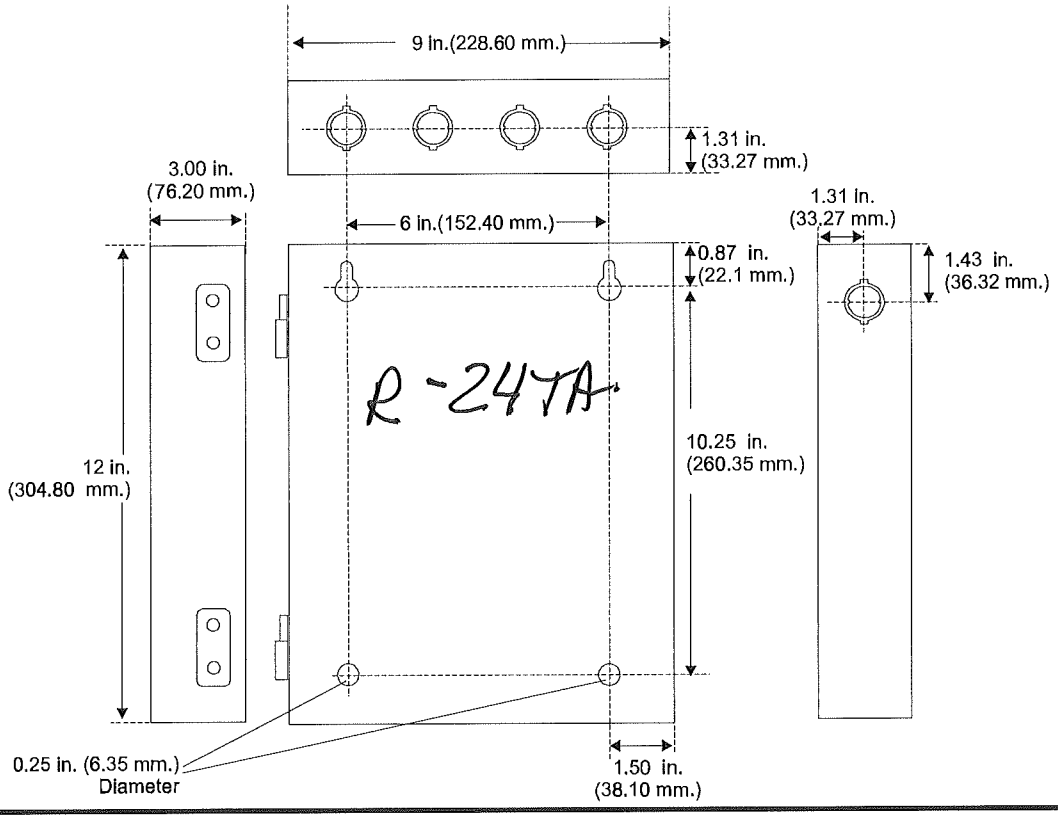
11/09/01 ECN 01-488

The BB-XP Cabinet is hinged on the left, and is shipped assembled with a chassis installed. Below are the cabinet dimensions for installation.

Cabinet Door



Cabinet



Multi-Voltage Conventional Relays

6-6581 Kitimat Road Mississauga, Ontario, L5N 3T5
PH: 905.812.0767 / FAX: 905.812.0771 / TOLL: 800.SENSOR2 / WEB: www.systemsensor.ca

Models Available

Potted with Pigtail Series

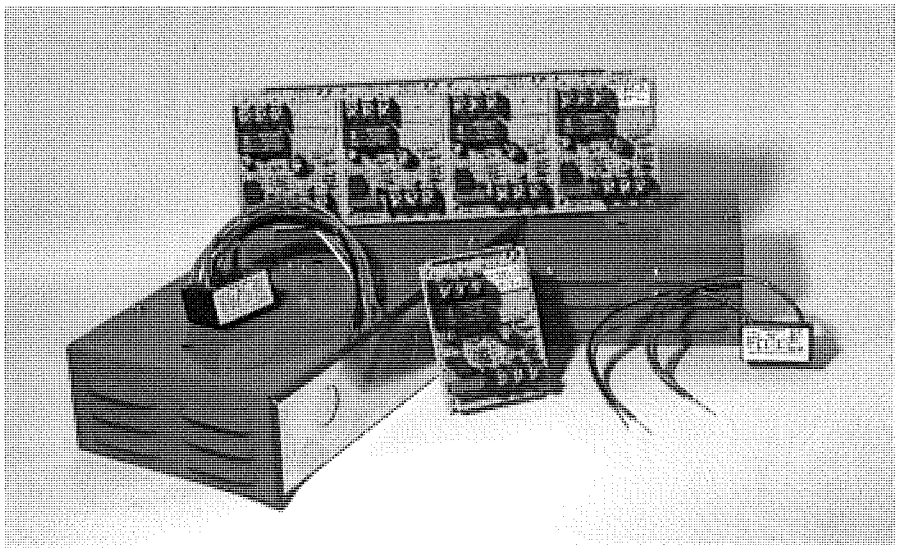
PR-1A/PR-2A/PR-3A	Epoxy encapsulated (SPDT) relays with an activation LED
EOLR-1A	End of Line Epoxy encapsulated (SPST) relay

Track Mount Series

R-10TA	Single (SPDT) relay with an activation LED
R-14TA	4-gang (SPDT) relay with 4 activation LEDs
R-20TA	Single (DPDT) relay with an activation LED
R-24TA	4-gang (DPDT) relay with 4 activation LEDs

Steel Enclosure Series

R-10EA	Single (SPDT) relay with an activation LED
R-14EA	4-gang (SPDT) relay with 4 activation LEDs
R-20EA	Single (DPDT) relay with an activation LED
R-24EA	4-gang (DPDT) relay with 4 activation LEDs



LOAD RELAYS
MTG IN BB-XP.

Product Overview

Multi-voltage operation

Activation LEDs

Easy and flexible installation

Reliable and robust design

Multi-purpose field installation

System Sensor's multi-voltage conventional relays are used for such high-current switching applications as fan and damper assembly control, door control, air handling unit controls, and other types of system interfacing.

The R-10TA/20TA and R-14TA/R-24TA models are multi voltage relays with terminal strip field wiring connections, mounting track and hardware. The R-10TA is a single FORM-C (SPDT) relay with a red activation LED, and the R-14TA is a 4-gang 1 FORM-C (SPDT) relay with 4 red activation LEDs. The R-20TA is a single 2 FORM-C (DPDT) relay with a red activation LED, and the R-24TA is a 4-gang 2 FORM-C (DPDT) relay with 4 red activation LEDs.

The R-10EA/R-20EA and R-14EA/R-24EA are similar to the T series track mount relays, but they are mounted into a steel enclosure. The enclosure has a removable front cover that provides easy access and a LED viewing hole on the top of the cover.

PR-1A/PR-2A/PR-3A are epoxy encapsulated multi-voltage relays. They are single pole double throw relays that use a red LED as a visible indication of relay coil energization. PR-3A is identical to PR-2A except it has an extra pair of wires for redundant power input.

Model EOLR-1A is an epoxy encapsulated single pole single throw, normally open relay that can be used as an end of line device in fire alarm systems, e.g. to supervise power supplies.

Specifications: R-10TA/R-14TA/ R-20TA/R-24TA

Operating Voltage
18 – 35 VDC, 18 – 35 VAC, 115 VAC, 230 VAC

Operating Current
20 mA DC max. @ 24 VDC, 24 VAC, 115 VAC, 230 VAC (R-10TA/R-14TA)
40 mA DC max. @ 24 VDC, 24 VAC, 115 VAC, 230 VAC (R-20TA/R-24TA)

Operating Temperature
– 40°F to 158°F (– 40°C to 70°C)

Humidity Range
10% – 85% non-condensing

Dimensions
R-10TA/R-20TA: 2.5″L × 3.35″W × 1.2″H
R-14TA/R-24TA: 10″L × 3.35″W × 1.2″H

Contact Ratings
24 VDC: 7 A with L/R = 5 mS
120 VAC: 10 A
120 VAC: 1/6 HP
230 VAC: 7 A

Specifications: EOLR-1A

Operating Voltage
9 to 40 VDC

Operating Current
20 mA DC max.

Operating Temperature
– 22°F to 140°F (– 30°C to 60°C)

Humidity Range
10 – 100% RH

Wire Length
8″ minimum

Contact Ratings
120 VAC: 0.5 A max. (resistive load)
30 VDC: 3 A max. (resistive load)

Specifications: R-10EA/R-14EA/ R-20EA/R-24EA

Operating Voltage
18 – 35 VDC, 18 – 35 VAC, 115 VAC, 230 VAC

Operating Current
20 mA DC max. @ 24 VDC, 24 VAC, 115 VAC, 230 VAC (R-10EA/R-14EA)
40 mA DC max. @ 24 VDC, 24 VAC, 115 VAC, 230 VAC (R-20EA/R-24EA)

Operating Temperature
– 40°F to 158°F (– 40°C to 70°C)

Humidity Range
10% – 85% non-condensing

Dimensions
R-10EA/R-20EA: 5.1″L × 3.75″W × 2.5″H
R-14EA/R-24EA: 11″L × 5.3″W × 2.5″H

Contact Ratings
24 VDC: 7 A with L/R = 5 mS
120 VAC: 10 A
120 VAC: 1/6 HP
230 VAC: 7 A

Specifications: PR-1A

Operating Voltage
18 – 35 VDC, 18 – 35 VAC, 120 VAC

Operating Current
15 mA DC max. @ 24 VDC, 24 VAC, 120 VAC

Operating Temperature
– 40°F to 158°F (– 40°C to 70°C)

Humidity Range
10 – 100% RH

Wire Length
8″ minimum

Dimensions
0.87″H × 2.01″W × 1.42″D

Contact Ratings
24 VDC: 7 A with L/R = 5 mS
120 VAC: 7 A max. (0.35 PF)
250 VAC: 10 A resistive
30 VDC: 10 A resistive

Specifications: PR-2A/PR-3A

Operating Voltage
10 to 40 VDC

Operating Current
30 mA DC max.

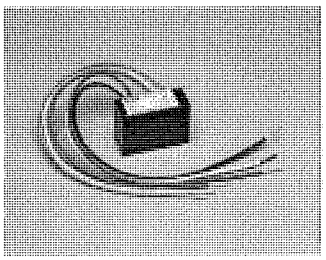
Operating Temperature
– 40°F to 158°F (– 40°C to 70°C)

Humidity Range
10 – 100% RH

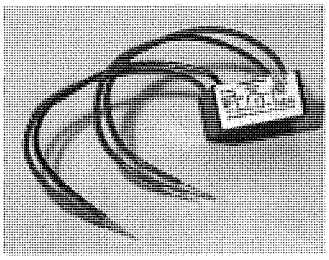
Wire Length
8″ minimum

Dimensions
0.91″H × 1.65″W × 1.22″D

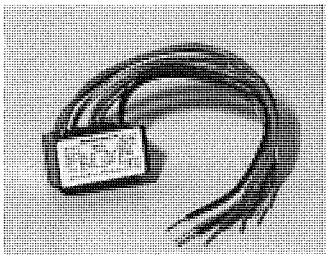
Contact Ratings
120 VAC: 10 A max. (resistive load)
120 VAC: 7 A max. (0.35 PF)
250 VAC: 10 A max. (resistive load)
30 VDC: 10 A max. (resistive load)



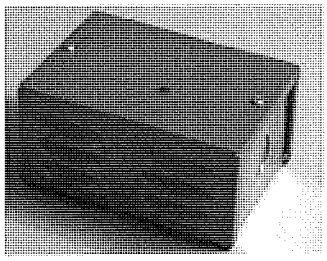
PR-1A



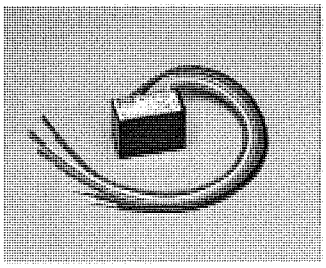
EOLR-1A



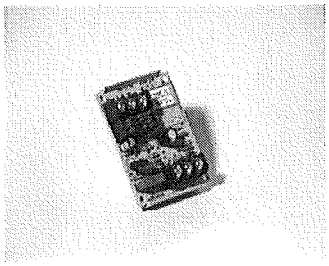
PR-3A



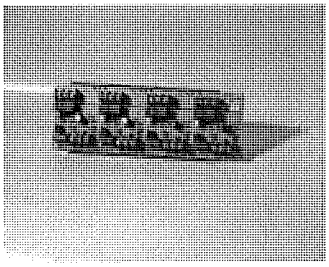
R-10EA & R-14EA Enclosure



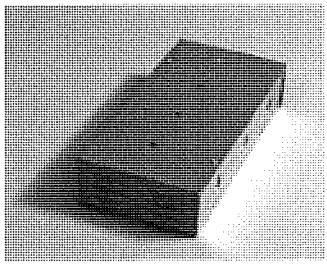
PR-2A



R-10TA



R-14TA



R-20EA & R-24EA Enclosure

System Sensor Sales and Service

System Sensor Canada
6581 Kitimat Rd. Unit # 6
Mississauga, ON L5N 3T5
Ph: 800-SENSOR2
Fx: 905-812-0771

www.systemsensor.ca

System Sensor Headquarters USA
Ph: 630-377-6674
Fx: 630-377-6495

System Sensor in Europe
Ph: 44.1403.276500
Fx: 44.1403.276501

System Sensor in China
Ph: 86.29.524.6253
Fx: 86.29.524.6259

System Sensor in Singapore
Ph: 65.273.2230
Fx: 65.273.2610

System Sensor– Far East
Ph: 852.21919003
Fx: 852.27366580

System Sensor– Latin America
Ph: 562.214.9359
Fx: 562.214.2987

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MOUNTED IN WP/HEATED CABINET

ACS Series Annunciators

ONYX® Series
ACM/AEM-24AT, ACM/AEM-48A

NOTIFIER® by Honeywell

Annunciator Control Systems

General

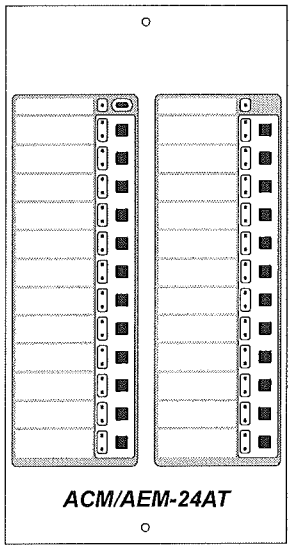
The ONYX® Series ACS Annunciators provide a modular line of products for annunciation and control of the NOTIFIER ONYX® Series NFS-640, NFS-3030, and NFS2-3030 Intelligent Fire Alarm Control Panels, and NCA and NCA-2 Network Control Annunciators, as well as NOTIFIER's AM2020, AFP1010, AFP-400, AFP-300, AFP-200, and AFP-100 fire control panels. The ACS line provides arrays of LEDs to indicate point status and, in some versions, switches to control the state of output circuits. These ACS units use a serial interface and may be located at distances of up to 6,000 feet (1,828.8 meters) from the panel.

Features

- Speaker control mode for use with XPIQ and the following panels: NFS-3030, NFS2-3030, NFS-640, AM2020, AFP1010, AFP-400, AFP-300. Enables the ACS to control operation of groups of multi-channels mapped to groups of multi-speakers.
- Compatible with existing annunciators.
- Color-programmable LEDs.
- On-board end-of-line resistors can be enabled/disabled by setting a switch.
- Alarm/Circuit On and Trouble LED per-point option or more dense Alarm-only option.
- Touch-pad control switch option for remote control of system relays; or silence, reset, and evacuate.
- LEDs may be programmed to display status of indicating circuits or control relays as well as system status conditions.
- Fan Control (manual/automatic) option for the AM2020 and AFP1010.
- System Trouble LED indicator.
- On-Line/Power LED indicator.
- Alarm and trouble resound with flash of new conditions.
- Local sounder for both alarm and trouble conditions with silence/acknowledge button (program options).
- Serial EIA-485 interface for reduced installation cost.
- May be powered by 24 VDC from the panel or by remote power supplies.
- Microprocessor-controlled electronics, fully supervised.
- Slip-in custom labels, lettered with standard typewriter or LabelEase program.
- Plug-in terminal blocks for ease of installation and service.
- Trouble monitor option for remote power supplies.

Construction

The ACS modules are provided in two basic controller modules, each with its expander module. The ACM-24AT provides 24 annunciation and control points per module, each with a red, green, or yellow Alarm/Circuit On LED, a yellow Trouble LED, and a touch-key switch. The ACM-48A provides 48 annunciation points per module, each with a red, green, or yellow Alarm/Circuit On LED (for annunciating control relays, the LED indicates ON/OFF).



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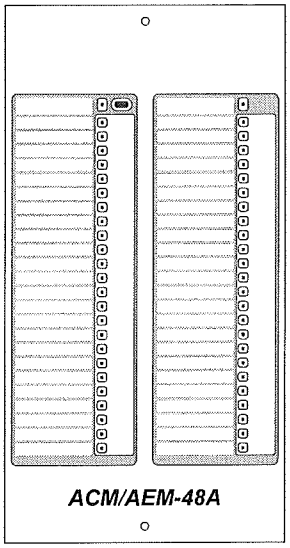

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On the ACM-24AT, each LED point is individually color-programmable. On ACM-48A, each column of 24 LED points can be color-configured using a DIP switch.

Temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Installation

The ACS Series annunciator and control subsystems use modular hardware assemblies which allow the custom configuration of the annunciator panel to fit the individual job requirements.

Standard backboxes and mounting hardware schemes, including special remote cabinets, allow the annunciators to be constructed and configured with other system components.

When used with the NFS(2)-3030, NFS-640, AM2020, AFP1010, AFP-400, or AFP-300, the ACS modules can be used for manual selection of speaker and telephone circuits. In this application, they are typically mounted in the main control near the microphone and telephone handset.

For remote annunciation applications, the modules are typically mounted in special ABF or ABS boxes. Control switch key locks (AKS-1/-1B) and phone jacks (APJ-1/-1B) are available.

Communication between the ACS Series annunciators and the host Fire Alarm Control Panel is made through an EIA-485 multi-drop loop, eliminating the need for costly wiring schemes. Four wires are required, two for the EIA-485 communications (twisted pair), and two for 24 VDC regulated power.

Retrofit of ACS Series annunciators into existing systems is easily accomplished. Software may require upgrading, and the AM2020 or AFP1010 must include a SIB-2048(A)/SIB-NET Serial Interface Board.

All field-wiring terminations use removable, compression-type terminal blocks for ease of installation, wiring, and circuit testing.

Operation

The ACS Series annunciator and control system provides the NOTIFIER system with up to 32 remote serially connected annunciators, each with a capacity of 96 points, for a total capacity of ***3072 points*** (subject to the capability of the FACP). The NCA(-2) is capable of using the full 96 points.

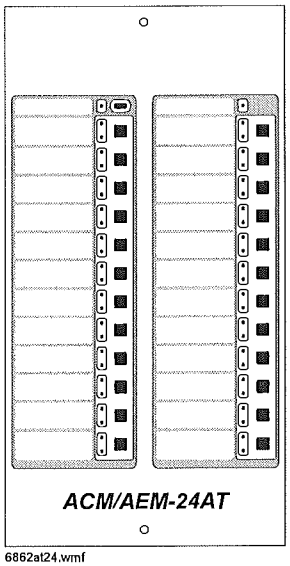
Local or remote power supplies and serial communications allow the ACS to be located virtually anywhere in the protected premises.

AM2020, AFP1010, NFS-640, NFS(2)-3030 and NCA(-2) system alarm and/or trouble conditions may be annunciated on a per-point basis, or in a grouped or zone configuration.

Control of system operational controls, such as Signal Silence, System Reset, and local annunciation controls (such as Local Acknowledge and Lamp Test) may be accomplished through the module's rubber keypad.

Product Line Information

ACM-24AT: *(shown below)* The Annunciator Control Module-24AT contains 24 color-programmable (red/green/yellow) Active and 24 yellow Trouble LEDs, 24 momentary touch-pad switches, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a silence/acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide.



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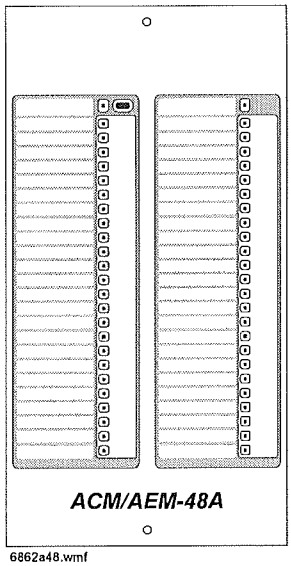

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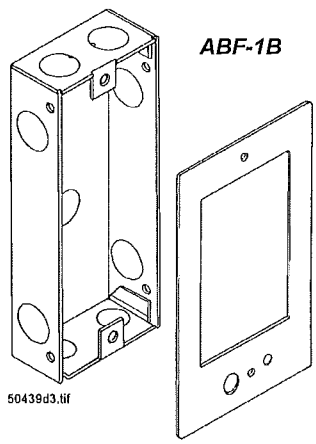
AEM-24AT: The Annunciator Expander Module-24AT expands the ACM-24AT by 24 system points. The AEM-24AT is identical in size and in frontal appearance to the ACM-24AT. Up to three of these expander modules can be supported by an ACM-24AT, for a maximum of 96 system points. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide. ***NOTE:*** *The AEM-24AT* ***cannot*** *be used to expand the ACM-48A.*

ACM-48A: *(shown above)* The Annunciator Control Module-48A contains 48 color-programmable (red/green/yellow) Active LEDs, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a Silence/Acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide.

AEM-48A: The Annunciator Expander Module-48A expands the ACM-48A by 48 system points. The AEM-48A is identical in frontal appearance to the ACM-48A. One expander module can be supported by an ACM-48A, providing a maximum of 96 points (subject to the capability of the FACP). 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide. ***NOTE:*** *The AEM-48A* ***cannot*** *be used to expand the ACM-24AT.*

ABS-1B: *(shown below)* The Annunciator Surface Box-1B (black) provides for the remote mounting of one annunciator module in a surface-mount enclosure. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciator mounts directly to the ABS-1B without a dress plate. 8.5" (21.59 cm) high x 4.5" (11.43 cm) wide x 2" (5.08 cm) deep. ***NOTE:*** *The ABS-1B will not support the installation of the AKS-1B Annunciator Key Switch.*



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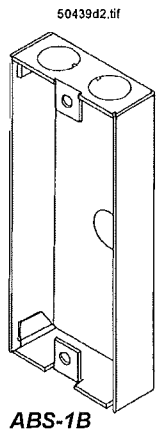

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ABS-1TB: The ABS-1TB is an attractive surface-mount backbox for mounting one ACS Series Annunciator. Unlike the ABS-1B, the ABS-1TB has an increased depth that allows mounting of the APJ-1B Annunciator Phone Jack and AKS-1B Annunciator Key Switch. Black, 9.938" (25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep. ***NOTE:*** *An earlier gray model, ABS-1T, will not accommodate the ACM/AEM-24AT or ACM/AEM-48A. The slightly deeper ABS-1TB will accommodate both the ACM/AEM-24AT or ACM/AEM-48A models and the ACM-16AT/ACM-32A Series (see DN-0524).*

ABS-2B: The Annunciator Surface Box-2B (black) provides for the surface mounting of one ACM-24AT/AEM-24AT combination or one ACM-48A/AEM-48A combination. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciators mount directly to the ABS-2B without a dress plate. 8.5" (21.59 cm) high x 8.92" (22.66 cm) wide x 2" (5.08 cm) deep. ***NOTE:*** *The ABS-2B will not support the installation of the AKS-1B Annunciator Key Switch.*

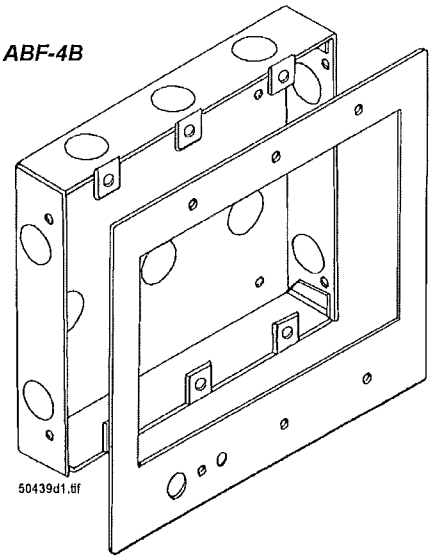
ABF-1B: *(shown above)* The Annunciator Flush Box-1B (black) provides for the remote mounting of a single annunciator module in a flush-mount enclosure. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The ABF-1B includes a painted black metal trim plate [11" (27.94 cm) high x 6.25" (15.875 cm) wide], mounting hardware, and an adhesive-backed annunciator label for the dress plate. 9.938"

(25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep.

ABF-2B: The Annunciator Flush Box-2B (black) provides for the flush mounting of two annunciator modules. Includes a painted black metal trim plate [11" (27.94 cm) high x 10.625" (26.99 cm) wide] and adhesive-backed annunciator label. 9.938" (25.24 cm) high x 9.188" (23.34 cm) wide x 3.75" (9.525 cm) deep.

ABF-4B: *(shown below)* The Annunciator Flush Box-4B (black) provides for the remote mounting of one to four annunciator modules. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The flush-mounted ABF-4B includes a painted black metal trim plate [11" (27.94 cm) high x 19.375" (49.21 cm) wide] and an annunciator label. 9.938" (25.24 cm) high x 17.75" (45.09 cm) wide x 2.5" (6.35 cm) deep.

ABF-4B



ABF-1DB, ABF-2DB, ABS-4D: The ABF-1DB, ABF-2DB and ABS-4D are semi-flush-mount backboxes for ACS Series Annunciators. The ABF-1DB mounts one annunciator module and the ABF-2DB mounts two modules or one NCA(-2). The ABS-4D mounts up to four annunciators ***or*** two annunciators with an NCA. Black with an attractive smoked glass door with a keylock. The ABS-4D is hinged on the bottom for stability.

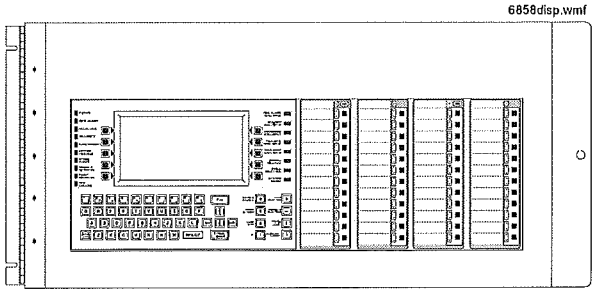
DIMENSIONS, ABF-1DB: ***Box only:*** 9.938" (25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep.
Door: 11" (27.94 cm) high x 6" (15.24 cm) wide x 0.75" (1.9 cm) deep.

DIMENSIONS, ABF-2DB: ***Box only:*** 9.938" (25.24 cm) high x 9.188" (23.34 cm) wide x 3.75" (9.525 cm) deep. ***Door:*** 11" (27.94 cm) high x 10.375" (26.35 cm) wide x 0.75" (1.9 cm) deep.

DIMENSIONS, ABS-4D: ***Box only:*** 11.97" (30.40 cm) high x 19.87" (50.47cm) wide x 3.50" (8.89 cm) deep.
Door: 11.97" (30.40 cm) high x 19.87" (50.47 cm) wide x 1.25" (3.18 cm) deep.

ADP-4B: The Annunciator Dress Panel-4B (black) provides for the cabinet mounting of one to four modules. The ADP-4B hinge-mounts to a CAB-4 Series cabinet. Modules mount directly to threaded studs on the ADP-4B.

DP-DISP: The Dress Panel-Display provides for the cabinet mounting of one to four modules in the ***top row*** of a CAB-4 Series backbox. Modules mount directly to threaded studs on the DP-DISP *(see illustration below)*.



DP-DISP Dress Panel with NCA Network Control Annunciator in left two positions, and two ACM-24AT Annunciators at right.

BMP-1: Annunciator Blank Module is a flat black dress plate that covers unused module positions in the annunciator backbox or in the ADP-4B. 8.375" (21.27 cm) high x 4.375" (11.11 cm) wide. Studs for a variety of module mounting options are available.

AKS-1B: The Annunciator Key Switch-1B (black) provides access security for the control switches on the ACM/AEM-24AT. The key switch kit includes a key and hardware for mounting to the ABF-1B. Also included is an adhesive-backed annunciator label for use with the key switch/dress plate assembly. ***NOTE: The AKS-1B can only be employed with the ABS-1TB.***

APJ-1B: Annunciator Phone Jack-1B (black) for Fire Fighters Telephone (FFT-7). Includes mounting hardware and adhesive-backed label.

Agency Listings and Approvals

The listings and approvals below apply to the ACM/AEM-24AT and the ACM/AEM-48A. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

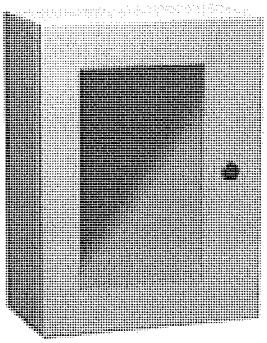
Additional listings relating to recent product or applications to be released shortly.

- **UL** Listed: file S635.
- **ULC** Listed: file CS118.
- **MEA** approved: files 317-01-E *(NFS-640)*, 345-02-E *(NFS-3030)*.
- **CSFM** approved: file 7120-0028:156.
- **FM** approved.
- **Lloyd's Register**: type approved 02/60007 *(NFS-640)*.
- **U.S. Coast Guard**: file 161.002/42/1 *(NFS-640)*.

Eclipse Series - NEMA 4, 12

Single Window Door Enclosures

<< Product Information << Industrial Enclosures <<



Download - PDF

Drawing Links

Panel Sold Separately

Application

- Designed to enclose electrical and/or electronic equipment in wallmount applications where viewing of component operation is necessary while maintaining protection ratings.
- Impressive styling features like hidden hinges, attractive latching systems make the Eclipse a suitable addition to any high-tech equipment installation.
- A wide range of sizes and practical accessories make this product line a complete package.
- For high temperature applications, a gasket retainer may be required, please refer to factory.

Standards

- UL 508 Type 3R, 4 and 12
- CSA Type 3R, 4 and 12
- Complies with
  - NEMA 3R, 4 and 12
  - IEC 60529, IP66

WP CABINET FOR REMOTE ANNUNCIATOR C/W HEATER & THERMOSTAT

Construction

- Formed 14 or 16 gauge steel.
- Full view UV resistant polycarbonate window allow maximum viewing area of inner panel.
- Smooth, continuously welded seams ground smooth.
- Door stiffeners are provided where required for increased strength and rigidity - designed to also permit additional mounting options.
- Formed lip on enclosure to exclude flowing liquids and contaminants.
- Door latches feature the added safety of quarter turn slot requiring use of tool for opening.
- Doors may be easily removed for modifications and are interchangeable.
- Oil resistant gaskets are permanently secured.
- Collar studs provided for mounting inner panel.
- Includes hardware kit with panel mounting nuts and sealing washers for wall mounting holes.
- Bonding stud provided on door and grounding stud installed in enclosure.
- Hinges are constructed from 304 stainless steel.
- Hinge pins are stainless steel.
- Quarter turn latches are zinc diecast with black epoxy finish.

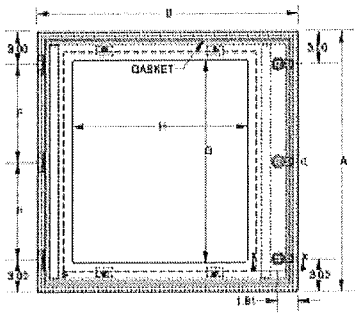
Finish

- Cover and enclosure are phosphatized and finished with a recoatable powder inside and out with choice of ANSI 61 smooth Gray (GY) or RAL7035 textured light gray (LG).
- **RAL7032 Finish Update**

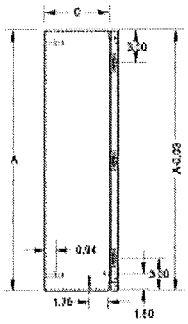
Accessories

- **Air conditioners**
- **Blowers**
- **Breather kits**
- **DIN Rails**
- **DIN rail mounting kit**
- **Door stop kit**
- **Filter fans**
- **Gland Plates**
- **Heaters**
- **Handles**
- **Inner panel**
- **Quarter turn inserts and keys**
- **Literature pocket**
- **Mounting foot kit**
- **Swing frame**
- **Swing panel**
- **Replacement hinge pins**
- **Replacement quarter turn assemblies**
- **Thermostats**
- **Touch up paint**
- **UL/CSA approved hardware kit**
- **Padlock Adapter (EPA)**

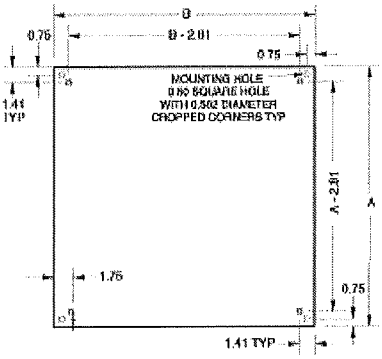
Back to Top



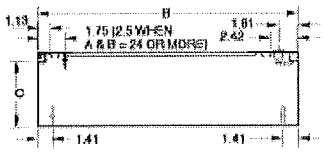
Front View



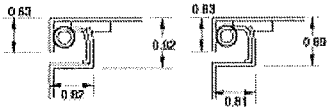
Side View
Hinge Side



Front Section
Door & Body Flange Removed

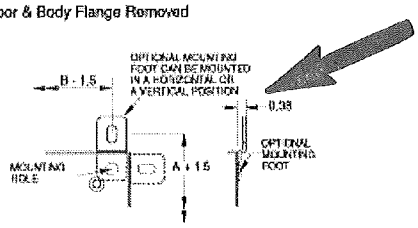


End View



Cross Section
of 14 gauge
Body & Door

Cross Section
of 16 gauge
Body & Door



Mounting Detail
Door & Body Flange Removed

Part No. (ANSI 61 Gray)	Part No. (RAL7035 Light Gray)	Overall Dimensions			Door/ Body Gauge	Latch[1] qty	Hinge qty		Viewing Area		Optional Panel Part No.	Inner Panel Dimensions		Ship Wt. lbs
		A	B	C				F	G	H		D	E	
EN4SD16126WGY	EN4SD16126WLG	16	12	6	16	1	2	10	11.33	6.71	EP1612	14.2	10.2	16
EN4SD20166WGY	EN4SD20166WLG	20	16	6	16	1	2	14	15.33	10.71	EP2016	18.2	14.2	22
EN4SD20206WGY	EN4SD20206WLG	20	20	6	16	1	2	14	15.33	14.71	EP2020	18.2	18.2	26
EN4SD24206WGY	EN4SD24206WLG	24	20	6	16	1	2	18	19.33	14.71	EP2420	22.2	18.2	30
EN4SD24246WGY	EN4SD24246WLG	24	24	6	14	2	2	18	19.33	16.15	EP2424	22.2	22.2	37
EN4SD16128WGY	EN4SD16128WLG	16	12	8	16	1	2	10	11.33	6.71	EP1612	14.2	10.2	16

NBG-12 Series

Non-Coded Conventional Manual Fire Alarm Pull Stations

NOTIFIER® by Honeywell

Conventional Initiating Devices

General

The NOTIFIER **NBG-12 Series** is a cost-effective, feature-packed series of non-coded manual fire alarm pull stations. It was designed to meet multiple applications with the installer and end-user in mind. The NBG-12 Series features a variety of models including single- and dual-action versions.

The NBG-12 Series provides an alarm initiating input signal to conventional fire alarm control panels (FACPs) such as the SFP Series, and to XP Transponders. Its innovative design, durable construction, and multiple mounting options make the NBG-12 Series simple to install, maintain, and operate.

Features

- Aesthetically pleasing, highly visible design and color.
- Attractive contoured shape and light textured finish.
- Meets ADA 5 lb. maximum pull-force.
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Easily operated (single- or dual-action, model dependent), yet designed to prevent false alarms when bumped, shaken, or jarred.
- PUSH IN/PULL DOWN handle latches in the down position to clearly indicate the station has been operated.
- The word "ACTIVATED" appears on top of the handle in bright yellow, further indicating operation of the station.
- Operation handle features white arrows showing basic operation direction for non-English-speaking persons.
- Braille text included on finger-hold area of operation handle and across top of handle.
- Multiple hex- and key-lock models available.
- U.S. patented hex-lock needs only a quarter-turn to lock/unlock.
- Station can be opened for inspection and maintenance without initiating an alarm.
- Product ID label viewable by simply opening the cover; label is made of a durable long-life material.
- The words "NORMAL" and "ACTIVATED" are molded into the plastic adjacent to the alarm switch (located inside).
- Four-position terminal strip molded into backplate.
- Terminal strip includes Phillips combination-head captive 8/32 screws for easy connection to Initiating Device Circuit (IDC).
- Terminal screws backed-out at factory and shipped ready to accept field wiring (up to 12 AWG/3.1 mm²).
- Terminal numbers are molded into the backplate, eliminating the need for labels.
- Switch contacts are normally open.
- Can be surface-mounted (with **SB-10** or **SB-I/O**) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Backplate is large enough to overlap a single-gang backbox cutout by 1/2" (1.27 cm).
- Optional trim ring (**BG12TR**).
- Spanish versions *(FUEGO)* available (**NBG-12LSP, NBG-12LPSP**).
- Designed to replace the legacy **NBG-10** Series.
- Models packaged in attractive, clear plastic (PVC), clam-shell-style, Point-of-Purchase packages. Packaging includes a cutaway dust/paint cover in shape of pull station.

6643cov.jpg

Construction

- Cover, backplate and operation handle are all molded of durable polycarbonate material.
- Cover features white lettering and trim.
- Red color matches System Sensor's popular SpectrAlert® Advance horn/strobe series.

Operation

The NBG-12 manual pull stations provide a textured finger-hold area that includes Braille text. In addition to PUSH IN and PULL DOWN text, there are arrows indicating how to operate the station, provided for non-English-speaking people.

Pushing in and then pulling down on the handle activates the normally-open alarm switch. Once latched in the down position, the word "ACTIVATED" appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag. Resetting the station is simple: insert the key or hex (model dependent), twist one quarter-turn, then open the station's front cover, causing the spring-loaded operation handle to return to its original position. The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station's front cover, which automatically resets the switch.

Specifications

PHYSICAL SPECIFICATIONS:

pull station		SB-10	SB-I/O	WBB	WP-10
H	5.500 in. (13.97 cm)	5.500 in. (13.97 cm)	5.601 in. (14.23 cm)	4.25 in. (10.79 cm)	6.000 in. (15.24 cm)
W	4.121 in. (10.467 cm)	4.125 in. (10.478 cm)	4.222 in. (10.72 cm)	4.25 in. (10.79 cm)	4.690 in. (11.913 cm)
D	1.390 in. (3.531 cm)	1.375 in. (3.493 cm)	1.439 in. (3.66 cm)	1.75 in. (4.445 cm)	2.000 in. (5.08 cm)

6643dim2.tbl

ELECTRICAL SPECIFICATIONS:

Switch contact ratings: gold-plated; rating 0.25 A @ 30 VAC or VDC. **Auxiliary contact circuit** (Terminals 3 & 4, NBG-12LA): rated to 3.0 A @ 30 VAC or VDC.

C/W WP BACK BOX & STATION COVER.

ENGINEERING/ARCHITECTURAL SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, with a key- or hex-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key or hex. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red colored LEXAN (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word **FIRE** shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger.* Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

***NOTE:** *The words "FIRE/FUEGO" on the NBG-12LSP and NBG-12LPSP shall appear on the front of the station in white letters, approximately 3/4" (1.905 cm) high.*

Pre-Signal Models

The **NBG-12LPS** and **NBG-12LPSP** pull stations are non-coded manual pull stations which provide a FACP with two normally open alarm initiating input signals. "Pre-signal" input is activated by pushing in, then pulling down, the dual-action handle. A "general" alarm input signal can be manually activated via a momentary rocker switch mounted inside the unit. This general alarm switch can only be accessed by opening the cover with the supplied key/lock. *See diagram at right.*

Agency Listings and Approvals

The listings and approvals below apply to the NBG-12 Series pull stations. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **C(UL)US** Listed: file S692.
- **CSFM** approved: file **7**150-0028:199.
- **FM** approved *(except NBG-12LPS, NBG-12LPSP).*
- **MEA** approved: file 67-02-E *(NBG-12, NBG-12L, NBG-12LOB, NBG-12LA).*
- **Lloyd's Register** type approved: file 93/60141 (E3) *(NBG-12, NBG-12L, NBG-12LA, NBG-12LOB, NBG-12S).*
- **U.S. Coast Guard** approved: files 161.002/23/3 *(AFP-200 with NBG-12, NBG-12L, NBG-12S)*; 161.002/42/1 *(NFS-640 with NBG-12, NBG-12L, NBG-12S)*; 161.002/27/3 *(AFP1010/ AM2020 with NBG-12, NBG-12L, NBG-12S).*
- **Patented:** U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

Product Line Information

NBG-12S: Single-action pull station with pigtail connections, hex lock.

NBG-12: Dual-action pull station with SPST N/O switch, screw terminal connections, ***hex lock.***

NBG-12L: Dual-action pull station with SPST N/O switch, screw terminal connections, ***key lock.***

NBG-12LSP: Same as NBG-12L with English/Spanish *(FIRE/ FUEGO)* labeling.

NBG-12LPS: Dual-action pull station with pre-signal option.

NBG-12LPSP: Same as NBG-12LPS with English/Spanish *(FIRE/FUEGO)* labeling.

NBG-12LOB: Dual-action pull station with key lock, outdoor applications listings (**NBG-12LO**), and backbox. Includes **SB-I/O** indoor/outdoor backbox, and sealing gasket. Model will also mount to **WP-10** weatherproof backbox in retrofit applications.

***NOTE:** NBG-12LO not available separately;*
NBG-12LO + approved backbox = NBG-12LOB.
Outdoor applications listings apply to NBG-12LOB combination.

NBG-12LA: Dual-action pull station with key lock and annunciator contacts.

SB-10: Surface-mount backbox, metal.

SB-I/O: Surface-mount backbox, plastic. *(Included with NBG-12LOB.)*

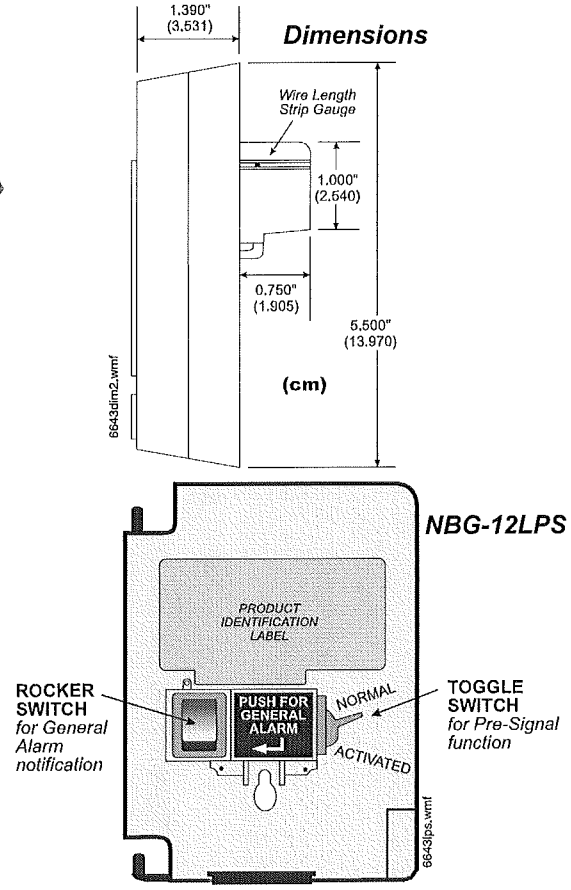
BG12TR: Optional trim ring for semi-flush mounting.

WP-10: Outdoor use backbox.

17021: Keys, set of two. (Included with key-lock pull stations.)

17007: Hex key, 9/64". (Included with hex-lock pull stations.)

***NOTE:** For addressable NBG-12LX models, see data sheet DN-6726.*



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ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

NOTIFIER® FIRE SYSTEMS

May 6, 1996 DN-3459 • K-200

STI Stopper II and Weather Stopper II

Covers for Manual Pull Stations

Section: Miscellaneous

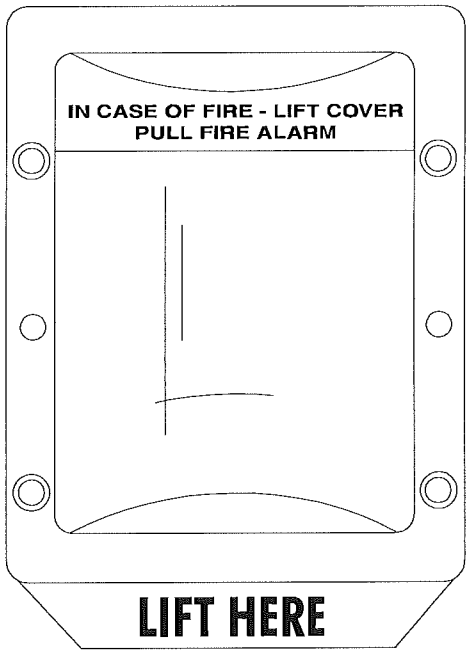
GENERAL

The **STI Stopper II** cover for manual pull stations helps deter unwanted activation and is also an effective guard against physical damage. It has been proven by use in thousands of installations throughout the world, including schools, hospitals, hotels and stores. The **Stopper II** has also been tested and approved by fire prevention and testing authorities.

UL® S49G2 ULC 13959C Factory Mutual System 0G6A2.AY BSA 947-81-SA

FEATURES

- Window made of clear and durable LEXAN®.
- Optional warning horn powered by 9 VDC battery.
- Provides weatherproofing for outdoor pull stations when equipped with optional gasket (**Weather Stopper II**).
- Fits pull stations from 5-1/2" to 6-3/4".
- Unconditional lifetime guarantee against cover breakage and damage.



APPLICATIONS

The **Stopper II** can be used in almost any pull station environment.

SPACER INSTALLATION

(Surface Mount Models ONLY)

The spacer is used for surface-mounted or oversized manual stations. Longer screws are provided for use with tap-in anchors. Remove knock-out at top or bottom of spacer as necessary.

GASKET INSTALLATION

(Weather Stopper II Models ONLY)

Installing neoprene gaskets behind the spacer and/or **Stopper II** frame will provide additional weatherproofing. A conduit gasket may be used to seal the top or bottom of the spacer.

BATTERY REPLACEMENT

Battery should be replaced once a year or after alarm activation. Use Duracell 1604 or equivalent.

To access the battery, remove lock-out screw. Slide activation switch towards center. Remove screw at top of cover and remove horn bracket inside. Unclip battery and replace. Reactivate alarm and replace screws.

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

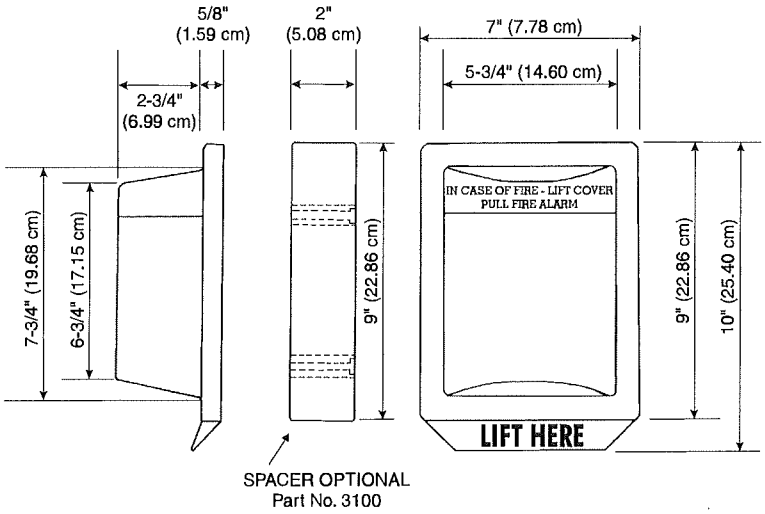
PRODUCT LINE INFORMATION

STI 1100 Stopper II, flush mount, with horn.
STI 1130 Stopper II, surface mount, with horn.
STI 1200 Stopper II, flush mount, ***without*** horn.
STI 1230 Stopper II, surface mount, ***without*** horn.
STI 1250 Weather Stopper II, flush mount.
STI 3150 Weather Stopper II, surface mount.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact **NOTIFIER**. Phone: (203) 484-7161 FAX: (203) 484-7118

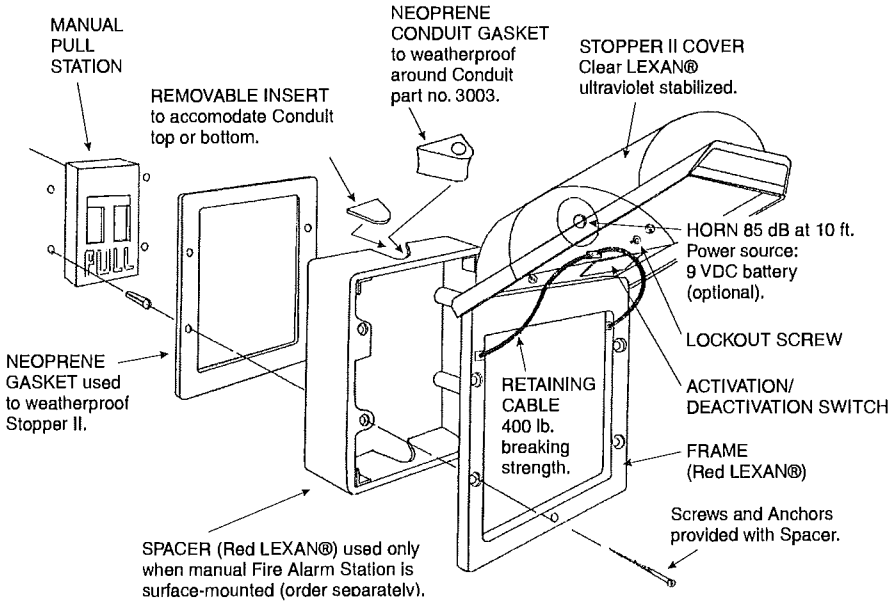
NOTIFIER® 12 Clintonville Road, Northford, Connecticut 06472

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING



SIZE OF PULL STATION ACCOMODATED

The Stopper II and Weather Stopper II can be installed over a flush-mounted station up to 5-1/2" wide and 6-3/4" high. However, the pull station's maximum dimensions will decrease as its depth (distance from the wall) increases, i.e.: a 3/4" deep pull station may be 5-1/2" wide x 6" high; a 1-5/8" deep pull station may be 5" wide x 6" high; a 2-3/8" deep pull station may be 4" wide x 5-3/4" high; a 2-3/4" deep pull station may be 3" wide x 5-1/2" high. See sections on **SPACER** and **GASKET INSTALLATION** on reverse side.



STOPPER II (at left)

WEATHER STOPPER II (below)

INSTALLATION INSTRUCTIONS

1) Separate cover from frame. Disable horn (if installed) by sliding activation switch towards center.

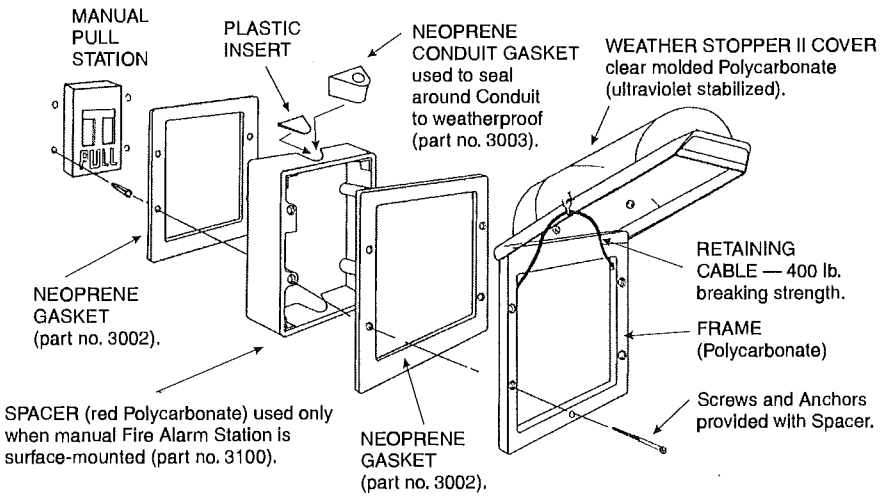
2) Center frame around pull station. Mark four holes for anchors.

3) Drill four 1/4" holes.

4) Attach frame to wall with tap-in anchors.

5) Slide activation switch towards outside to activate alarm. Screw in lock-out screw to prevent unauthorized deactivation.

6) Align pads, slots, and guide pins on cover over frame. Close cover.



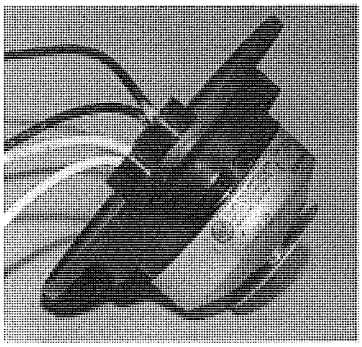
BACK BOX BY OTHERS

FIRE DETECTION DEVICES LTD.

THERMOFLEX® AUTOMATIC THERMOSTATS
FOR FIRE ALARM SYSTEMS

2005-03-11

CSFM Approved



Spec. Sheet #2 Modified Pigtail (MP) Detector The THERMOFLEX® product group includes standard detectors that have the additional feature of terminal protection from water and condensation. Each MP detector is available in single or multiple circuits with Normally Open and/or Normally Closed contact configurations, and any of the fixed temperature settings including 135°, 165°, 200° and 285° F.

Description: A standard detector is encapsulated in a black phenol-plastic seal plate with black and white pigtail connections.

Application: Unit is suitable for use in high humidity indoor environments and areas that are subject to potential corrosive elements, spray washing and below freezing temperatures. Detectors suitable for **Weather Proof** and **Hazardous Locations** requirements are available, please refer to technical spec. sheet #4.

Shown here is a Modified Pigtail Detector, typically Normally Open, one pair of white pigtails connected to one side of the contact, the black pair connected to the other side to provide "in-out" connections to a Fire Alarm initiating circuit. Two single blue wires (not shown) indicate a Normally Closed set of contacts.

The **Model CR 135 MP** is a combination Rate-of-Rise and Fixed Temperature detector. A set of normally open contacts will close when the ceiling temperature increases at a (minimum) rate of 8.4 Celsius degrees (15 F. degrees) per minute. Closing the contacts initiates the fire alarm sequence. Independent of the rate-of-rise operation, the fixed temperature portion consists of a spring-loaded plunger retained by a fusible alloy that releases when the ceiling temperature reaches 57° C., (135 °F). When released, the plunger strik es the contacts and holds them closed.
Spacing on an uninterrupted ceiling is 70' (22 m) for the rate-of-rise operation.

The **Model CF 135 MP** is a Fixed Temperature Only detector. The fixed temperature portion consists of a spring-loaded plunger retained by a fusible alloy that releases when the ceiling temperature reaches 57° C., (135 ° F). When released, the plunger strikes a normally open set of contacts and holds them closed. Spacing on an uninterrupted ceiling is 40' (22.5 m).
The CF 135 is identified by a black dot on its heat collector fin.

OR CF-200 MP

The **Model CR 200 MP** is a combination Rate-of-Rise and Fixed Temperature detector that operates in the same way as the CR 135, with the exception that the fixed temperature portion releases when the ceiling temperature reaches 93° C., (200 degrees F). Spacing on an uninterrupted ceiling is 70' (22 meters) for the rate-of-rise, and ***25' (7.62 meters)*** for the fixed temperature portion (a reduced spacing parameter from the CF 135.)
The CR 200 is identified by a white dot on its heat collector fin.

The **Model CF 200 MP** is a Fixed Temperature Only detector. The fixed temperature portion releases when the ceiling temperature reaches 93° C., (200° F). Spacing is 25', (7.62 Meters).
The CF 200 is identified by a black dot and a white dot on the heat collector fin.

Contact Configurations Any Detector in the MP Series is available in Normally Open (by far the most common) or Normally Closed, or Multiple Circuit configurations (see Spec. Sheet #3). The Model Number does not reflect the Normally Open configuration, however the letter "C" denotes Normally Closed.
For example: "CR 135 C MP" describes a rate-of-rise / fixed temperature detector, fusing at 135 °. F., with Normally Closed contacts, assembled with the modified pigtail and seal plate assembly.

Engineering Specification: THERMOFLEX® MP-type detectors shall be installed in areas where corrosive elements exist or washing of walls and ceiling surfaces is commonplace. The fixed temperature portion and the rate-of-rise operation shall be determined by the ambient temperature. THERMOFLEX® MP-type detectors shall be installed in areas where environmental conditions including dust, vapours, insects, etc., would cause an ionization or photoelectric type detector to initiate a false alarm.

Contact Rating
3A @ 125 VAC * 1A @ 28 VDC * 0.3A @ 125 VDC
0.1A @ 250 VDC

Dimensions
Diameter: 5.25" (13.4 cm)
Height: 2.0" (4.85 cm)

Weight:
0.41 lb. (330 gm)

90 Nolan Court, Unit 34, Markham, Ontario, Canada L3R-4L9 Fax(905) 477-2826, Tel(905) 479-7116
Electronic products dedicated to the safety of life and property
Web Site - http://www.firedetectiondevices.com

SpectrAlert® Advance

Selectable Output Notification Appliances

NOTIFIER® by Honeywell

Audio/Visual Devices

General

SpectrAlert® Advance selectable-output horns, strobes and horn/strobes are rich with features guaranteed to cut installation times and maximize profits. The SpectrAlert Advance series of notification appliances is designed to simplify your installations, with features such as: plug-in designs, instant feedback messages to ensure correct installation of individual devices, and eleven field-selectable candela settings for wall and ceiling strobes and horn/strobes.

More specifically, when installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon, or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Then, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe, or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

SpectrAlert Advance products allow you to choose:

- 12 or 24 volts.
- At 24 volts, 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, or 185 candela by way of a rear-mounted slide switch and front viewing window.
- Horn tones and volume by way of a rotary switch.

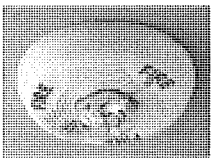
The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two-wire and four-wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between –40°F and 151°F (–40°C and 66°C) in wet or dry applications.

Models available:

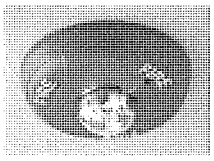
- Indoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Indoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.

Features

- Plug-in design.
- Same mounting plate for wall- and ceiling-mount units.
- Shorting spring on mounting plate for continuity check before installation.
- Captive mounting screw.
- Tamper-resistance capability.
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.
- Automatic selection of 12 or 24 volt operation at 15 and 15/75 candela.
- Outdoor wall and ceiling products.

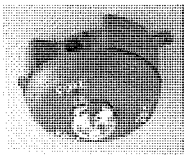


Indoor Ceiling Horn/Strobe

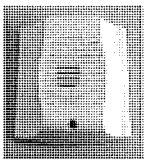


Outdoor Ceiling Strobe

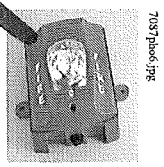
Indoor Wall Horn/Strobe



Indoor Ceiling Strobe



Indoor Wall Horn/Strobe



Outdoor Wall Strobe

- Outdoor products rated from –40°F and 151°F (–40°C and 66°C).
- Minimal intrusion into the backbox.
- Horn rated at 88+ dbA at 16 volts.
- Rotary switch for tone selection.
- Three horn volume settings.
- Electrically compatible with existing SpectrAlert products.

Engineering Specifications

SpectrAlert Advance horns, strobes, and horn/strobes shall mount to a standard 4.0" x 4.0" x 1.5" (10.16 x 10.16 x 3.81 cm) backbox, 4.0" (10.16 cm) octagonal backbox, or a double-gang backbox. Two-wire products shall also mount to a single-gang 2.0" x 4.0" x 1.875" (5.08 x 10.16 x 4.763 cm) backbox. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32°F and 120°F (0°C and 49°C) from a regulated DC, or full-wave-rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

STROBE

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to CAN/ULC S526 and shall be

approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

HORN/STROBE COMBINATION

The horn/strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to CAN/ULC S525 and S526 and shall be approved for fire protective service. The horn/strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a Temporal 3 pattern and a Non-Temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

OUTDOOR PRODUCTS

SpectrAlert Advance outdoor horns, strobes and horn/strobes shall be listed for outdoor use by ULC and shall operate between –40°F and 151°F (–40°C and 66°C). The products shall be listed for use with a System Sensor outdoor/weather-proof backbox with half-inch and three-fourths-inch conduit entries.

SYNCHRONIZATION MODULE

The module shall be a System Sensor Sync•Circuit _____ listed to ULC and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at Temporal 3. Also, while operating the strobes, the module shall silence the horns on horn/strobe models over a single pair of wires. The module shall mount to a 4.688" x 4.688" x 2.125" (11.906 x 11.906 x 5.398 cm) backbox. The module shall also control two Style Y (class B) circuits or one Style Z (Class A) circuit. The module shall synchronize multiple zones. Daisy-chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Operating Specifications

- **Standard operating temperature:** 32°F to 120°F (0°C to 49°C).
- **K Series operating temperature:** –40°F to 151°F (–40°C to 66°C).
- **Humidity range:** 10% to 93% non-condensing (indoor products).
- **Strobe flash rate:** 1 flash per second.
- **Nominal voltage:** regulated 12 VDC/FWR or regulated 24 VDC/FWR. ***NOTE:*** *Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.*
- **Operating voltage range:** 8 V to 17.5 V (12 V nominal); or 16 V to 33 V (24 V nominal). ***NOTE:*** *P, S, PC, and SC products will operate at 12 V nominal only for 15 cd and 15/75 cd.*
- **Input terminal wire gauge:** 12 to 18 AWG (3.31 to 0.821 mm²).
- **Ceiling-mount dimensions (including lens):** 6.8" diameter x 2.5" deep (17.3 cm diameter x 6.4 cm deep).
- **Wall-mount dimensions (including lens):** 5.6" H x 4.7" W x 2.5" D (14.2 cm H x 11.9 cm W x 6.4 cm D).
- **Horn dimensions:** 5.6" H x 4.7" W x 1.3" D (14.2 cm H x 11.9 cm W x 3.3 cm D).

Agency Listings and Approvals

The listings and approvals below apply to SpectrAlert Advance Selectable Output Notification Devices. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **ULC** Listed: file S5512
- **FM Approved**

Strobe Current Draw, ULC Maximum (mA RMS)

Candela		8 – 17.5 V		16 – 33 V	
		DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	N/A	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High Candela Range	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

Horn Current Draw, ULC Maximum (mA RMS)

Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
		DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

Horn and Horn/Strobe Rotary Switch Setting

Setting	Repetition Rate	dB Level
1	Temporal horn	High
2	Temporal horn	Medium
3	Temporal horn	Low
4	Normal horn	High
5	Normal horn	Medium
6	Normal horn	Low
7*	Externally coded	High
8*	Externally coded	Medium
9*	Externally coded	Low

**NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.*

Horn and Horn/Strobe Output (dBA)

Switch Position	Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
			DC	FWR	DC	FWR
1	Temporal	High	96	93	101	99
2	Temporal	Medium	89	89	95	95
3	Temporal	Low	86	87	91	92
4	Non-temporal	High	90	86	96	93
5	Non-temporal	Medium	82	82	90	89
6	Non-temporal	Low	79	80	86	86
7*	Coded	High	90	87	96	93
8*	Coded	Medium	82	82	90	89
9*	Coded	Low	78	80	86	86

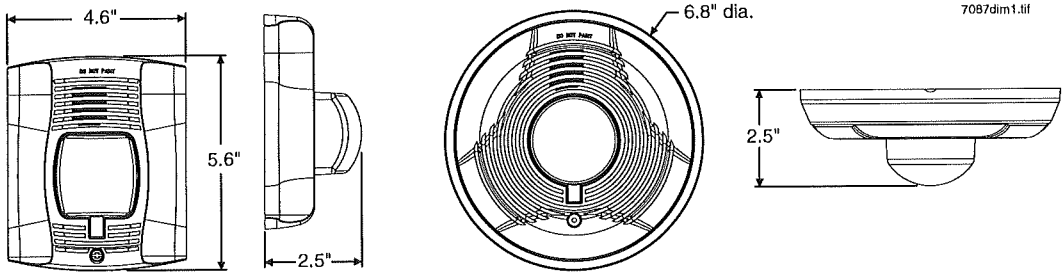
**NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.*

Two-Wire Horn/Strobe, *STANDARD* Candela Range (15 – 115 cd), ULC Maximum Current Draw (mA RMS)

Input, Sound Pattern, dB Level	8 – 17.5 V		16 – 33 V						
	15	15/75	15	15/75	30	75	95	110	115
DC Input, Temporal, High	137	147	79	90	107	176	194	212	218
DC Input, Temporal, Medium	132	144	69	80	97	157	182	201	210
DC Input, Temporal, Low	132	143	66	77	93	154	179	198	207
DC Input, Non-temporal, High	141	152	91	100	116	176	201	221	229
DC Input, Non-temporal, Medium	133	145	75	85	102	163	187	207	216
DC Input, Non-temporal, Low	131	144	68	79	96	156	182	201	210
FWR Input, Temporal, High	136	155	88	97	112	168	190	210	218
FWR Input, Temporal, Medium	129	152	78	88	103	160	184	202	206
FWR Input, Temporal, Low	129	151	76	86	101	160	184	194	201
FWR Input, Non-temporal, High	142	161	103	112	126	181	203	221	229
FWR Input, Non-temporal, Medium	134	155	85	95	110	166	189	208	216
FWR Input, Non-temporal, Low	132	154	80	90	105	161	184	202	211

Two-Wire Horn/Strobe, *HIGH* Candela Range (135 – 185 cd), ULC Maximum Current Draw (mA RMS)

DC Input	16 – 33 V				FWR Input	16 – 33 V			
	135	150	177	185		135	150	177	185
DC, Temporal, High	245	259	290	297	FWR, Temporal, High	215	231	258	265
DC, Temporal, Medium	235	253	288	297	FWR, Temporal, Medium	209	224	250	258
DC, Temporal, Low	232	251	282	292	FWR, Temporal, Low	207	221	248	256
DC, Non-temporal, High	255	270	303	309	FWR, Non-temporal, High	233	248	275	281
DC, Non-temporal, Medium	242	259	293	299	FWR, Non-temporal, Medium	219	232	262	267
DC, Non-temporal, Low	238	254	291	295	FWR, Non-temporal, Low	214	229	256	262



Ordering Information

Model	Description*	Model	Description
WALL HORN/STROBES		*CEILING HORN/STROBES*	
P2RA	2-wire horn/strobe, standard cd, red.	PC2RKA	2-wire horn/strobe, standard cd, red, outdoor.
P2RHA	2-wire horn/strobe, high cd, red.	PC2RHKA	2-wire horn/strobe, high cd, red, outdoor.
P2RKA	2-wire horn/strobe, standard cd, red, outdoor.**	PC2WA	2-wire horn/strobe, standard cd, white.
P2RHKA	2-wire horn/strobe, high cd, red, outdoor.	PC2WHA	2-wire horn/strobe, high cd, white.
P2WA	2-wire horn/strobe, standard cd, white.	PC4RKA	4-wire horn/strobe, standard cd, red, outdoor.
P2WHA	2-wire horn/strobe, high cd, white.	PC4RHKA	4-wire horn/strobe, high cd, red, outdoor.
P4RA	4-wire horn/strobe, standard cd, red.	PC4WA	4-wire horn/strobe, standard cd, white.
P4RHA	4-wire horn/strobe, high cd, red.	PC4WHA	4-wire horn/strobe, high cd, white.
P4RKA	4-wire horn/strobe, standard cd, red, outdoor.	*HORNS*	
P4RHKA	4-wire horn/strobe, high cd, red, outdoor.	HRA	Horn, red.
P4WA	4-wire horn/strobe, standard cd, white.	HRKA	Horn, red, outdoor.
P4WHA	4-wire horn/strobe, high cd, white.	HWA	Horn, white.
ACCESSORIES		*WALL STROBES*	
BBS-2	Backbox skirt, wall, red.	SRA	Strobe, standard cd, red.
BBSW-2	Backbox skirt, wall, white.	SRHA	Strobe, high cd, red.
BBSC-2	Backbox skirt, ceiling, red.	SRKA	Strobe, standard cd, red, outdoor.
BBSCW-2	Backbox skirt, ceiling, white.	SRHKA	Strobe, high cd, red, outdoor.
CEILING STROBES		SWA	Strobe, standard cd, white.
SCRKA	Strobe, standard cd, red, outdoor.	SWHA	Strobe, high cd, white.
SCRHKA	Strobe, high cd, red, outdoor.		
SCWA	Strobe, standard cd, white.		
SCWHA	Strobe, high cd, white.		

NOTE: *For strobes and horn/strobes, add suffix "-F" for French or "-B" for Bilingual.*

NOTE: **"High cd" refers to strobes that include 135, 150, 177, and 185 candela settings. "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings.*

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ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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EOL-CR, EOL-CW

Universal End-of-Line Device Mounting Plates

NOTIFIER® by Honeywell

Miscellaneous

General

The EOL-CR and EOL-CW Universal End-of-Line Device Mounting Plates are used, when required, to place the end-of-line device at an accessible height. The EOL-CR/-CW consists of a terminal strip mounted on a heavy gauge metallic single-gang faceplate, finished in red or white baked enamel; it fits on a standard single-gang electrical box. The end-of-line device is included with the corresponding module in the central equipment.

Architectural/Engineering Specifications

The End-of-Line Device Mounting Plate shall be model EOL-CR/-CW. It shall consist of a terminal strip, mounted on a single-gang faceplate, made of heavy-gauge metal, finished in red (EOL-CR) or white (EOL-CW), and shall fit on a standard single-gang electrical box.

Agency Listings and Approvals

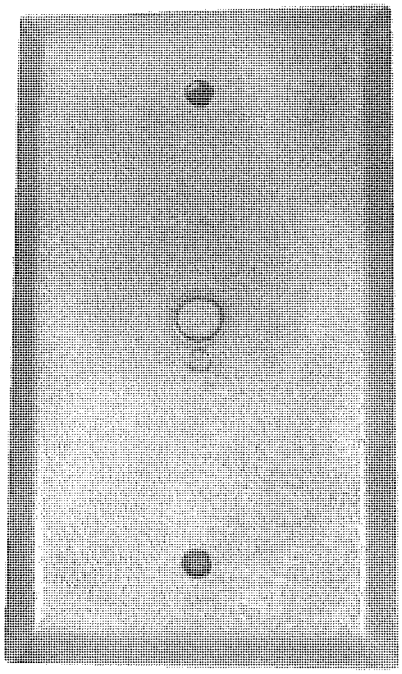
The listings and approvals below apply to the EOL-CR and EOL-CW Mounting Plates for End-of-Line Devices. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in progress. Consult factory for latest listing status.

- **ULC Listed:** File S7547

Ordering Information

EOL-CR: End-of-line device mounting plate (red). Shipping weight 0.17 kg (6 oz.).

EOL-CW: End-of-line device mounting plate (white). Shipping weight 0.17 kg (6 oz.).



EOL-CR

ZONES + SIGNAL CCTS + SPRINKLER PTS.