

# INTRAGROUND N1 SERIES NON-METALLIC CONTROL STATIONS, RECEPTACLES, TUMBLER SWITCHES, CIRCUIT BREAKERS & MANUAL MOTOR STARTERS EXPLOSION-PROOF CLASS 1, DIVISION 1 & 2 GROUPS C & D

The intraground "N1D" Series enclosures are suitable for use in Class 1, division 1, Groups C & D hazardous (classified) locations as defined by the National Electrical Code. The N1D Series enclosures are suitable for installation in the various common hazardous environments listed below.

## GROUP C ATMOSPHERES

acetaldehyde  
allyl alcohol  
n-butyl formal  
butyl mercaptan  
n-butyraldehyde  
carbon monoxide  
crotonaldehyde  
n-decaldehyde  
dicyclopentadiene  
diethyl ether  
diethylamine  
diethylaminoethanol

diethylene glycol  
monobutyl ether

diethylene glycol  
monomethyl ether

di-isopropylamine  
dimethylamine  
n-n-dimethyl aniline  
1, 4-dioxane  
di-n-propylamine

dipropylene glycol  
methyl ether

ethylene

ethylene glycol  
monobutyl ether

ethylene glycol  
monobutyl ether acetate

ethylene glycol  
monoethyl ether

ethylene glycol  
monoethyl ether acetate

ethylenimine  
2-ethylhexaldehyde

ethyl mercaptan  
n-ethyl morpholine  
2-ethyl-3-propyl acrolein  
furfural  
furfuryl alcohol  
hydrazine  
hydrogen cyanide  
hydrogen selenide  
hydrogen sulfide  
isobutyraldehyde  
isodecaldehyde  
iso-octyl aldehyde  
isopropyl glycidyl ether  
methylacetylene

methylacetylene  
propadiene (stabilized)

methyl ether  
methyl formal  
methyl mercaptan  
monomethyl aniline  
monomethyl hydrazine  
morpholine  
nitroethane  
nitromethane  
l-nitropropane  
2-nitropropane  
propionaldehyde  
n-propyl ether  
tetrahydrofuran  
tetramethyl lead  
triethylamine

unsymmetrical  
dimethyl hydrazine (UDMH)

valeraldehyde

## GROUP D ATMOSPHERES

acetic acid  
acetic anhydride  
acetone  
acetone cyanohydrin

acetonitrile  
acrylic acid  
acrylonitrile  
adiponitrile  
ammonia  
n-amyl acetate  
sec-amyl acetate  
aniline  
benzene  
butane  
l-butanol  
2-butanol  
n-butyl acetate  
n-butyl acetate  
sec-butyl acetate  
t-butyl acetate  
n-butyl acrylate (inhibited)  
butylamine  
butylene  
t-butyl toluene  
n-butyric acid  
cresol  
cumene  
cyclohexane  
cyclohexanol  
cyclohexanone  
cyclohexene  
cyclopropane  
p-cymene  
n-decanol  
decene  
diacetone alcohol  
diethyl benzene  
di-isobutylene  
di-isobutyl ketone  
dimethyl formamide  
dimethyl sulfate  
dipentene  
dodecene  
ethane  
ethanol  
ethyl acetate  
ethyl acrylate (inhibited)  
ethylamine  
ethyl sec-amyl ketone  
ethyl benzene

ethyl butanol  
ethyl butyl ketone  
ethylenediamine

ethylene glycol  
monomethyl ether

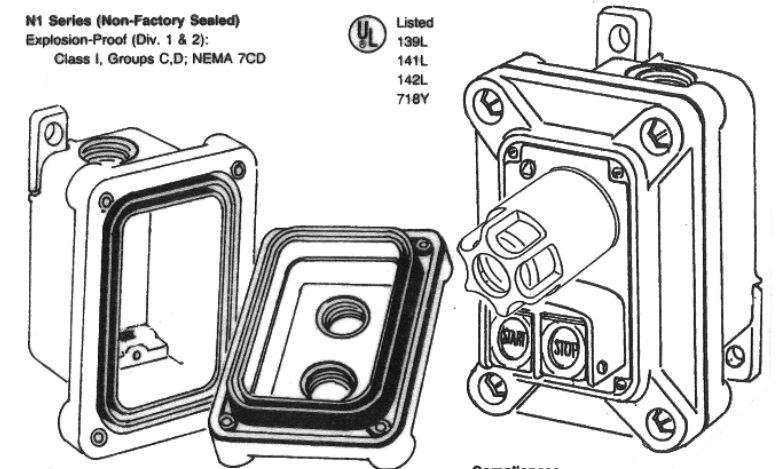
ethyl formate  
2-ethyl hexanol  
2-ethyl hexyl acrylate  
ethyl silicate  
formic acid (90%)  
fuel oils  
gasoline  
n-heptane  
n-heptene  
n-hexane  
hexanol  
2-hexanone  
hexenes  
sec-hexyl acetate  
isoamyl acetate  
isoamyl alcohol  
isobutyl acrylate  
isophorone  
isoprene  
isopropyl acetate  
isopropylamine  
isopropyl ether  
kerosene  
liquefied petroleum gas  
mesityl oxide  
methane  
methanol  
methyl acetate  
methyl acrylate  
methylamine  
methyl amyl alcohol  
methyl n-amyl ketone  
methylcyclohexane  
methylcyclohexanol  
methyl ethyl ketone  
2-methyl-5-ethyl pyridine  
methyl formate  
methyl isobutyl ketone  
methyl isocyanate

methyl methacrylate  
2-methyl-1-propanol  
2-methyl-2-propanol  
alpha-methyl styrene  
monoethanolamine  
monoisopropanolamine  
naphtha (coal tar)  
naphtha (petroleum)  
nitrobenzene  
n-nonane  
nonene  
nonyl alcohol  
octane  
octene  
n-octyl alcohol  
pentane  
l-pentanol  
2-pentanone  
l-pentene  
phenylhydrazine  
propane  
propiolactone  
propionic acid  
propionic anhydride  
l-propanol  
2-propanol  
n-propyl acetate  
propylene  
pyridine  
styrene  
tetrahydronaphthalene  
toluene  
n-tridecene  
triethylbenzene  
tripropylamine  
turpentine  
n-undecene  
vinyl acetate  
vinyl toluene  
xylenes

## Instructions for installation of N1D and N1DC Series Control Station, Tumbler Switch, Manual Motor Starter, Circuit Breaker and U-Line Receptacle Enclosures

N1 Series (Non-Factory Sealed)  
Explosion-Proof (Div. 1 & 2):  
Class I, Groups C,D; NEMA 7CD

UL Listed  
139L  
141L  
142L  
718Y



Compliances  
UL Standard 698.

### Applications

N1D and N1DC Series Push Button and Selector Switches are used in conjunction with contactors or magnetic starters for remote control of motors. They provide circuit control and/or selection. Pilot lights provide visual assurance that an electrical function is performed at remote or local locations. Circuit Breakers are used for short circuit protection and safe disconnect means for branch circuit for lighting, appliance and motor circuit. Tumbler Switches are used to connect or disconnect lighting and light power loads. Manual Motor Starters provide remote starting and stopping of motors and equipment. Manual Starters with heaters provide overcurrent protection of motors. U-Line Receptacles are used with stationary or portable electrically operated devices such as lighting systems, conveyors, heaters, motor generator sets, air conditioners, compressors and pumps. They are suitable for use in Class I Division 1 & 2, Groups C and D; hazardous (classified) areas as defined by the National Electrical Code, as well as in damp or corrosive locations indoors or outdoors.

**WARNING:** NOT SUITABLE FOR USE IN PARTIALLY HALOGENATED HYDROCARBON ATMOSPHERES SUCH AS ETHYLENE DICHLORIDE, EPICHLOROHYDRIN METHYLENE CHLORIDE & TRICHLOROETHANE.

## Instruction for Installation N1D Pushbutton and Selector Switch Unilets

### Installation

■ **WARNING:** Make sure that electrical power is off before starting installation or maintenance.

1 Loosen cover screws then carefully lift off the cover and set it aside to prevent damage to gasket and control devices. Do not remove control devices from cover.

■ **NOTE:** For field installation of control devices, refer to Instruction Sheet 501475.

2 Select a suitable mounting location that will provide strength and rigidity for supporting all contained wiring and controls. Install conduit in the entrance hub(s) of the enclosure securely with a 600 in-lb torque. When using 3/4" conduit, remove and discard the 3/4" to 1/2" reducer. Use a sealing material around conduit and on outer part of hub to provide complete corrosion protection.

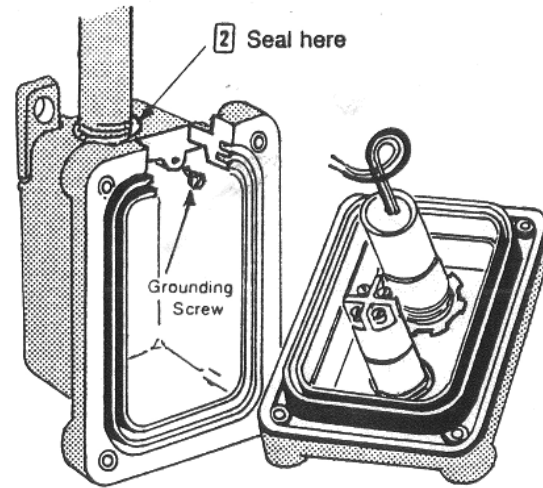
■ **NOTE:** Sealing fittings must be field installed adjacent to enclosure in each of the conduit runs.

3 **Bonding and grounding requirements:** The National Electrical Code requires that when more than one conduit enters the enclosure ground continuity between conduits must be maintained through proper grounding. Appleton Type N1DC (feed thru hub) is supplied with factory installed bonding wire connected to each metallic conduit entry. Type N1D (dead end) is supplied with a green colored grounding screw. If a separate grounding conductor is used, it must be connected to the conduit bonding system using the proper wire size and types as required by the NEC and any other applicable codes.

4 Pull the necessary control wires and make the proper electrical connections that will provide the desired control function of the control device. Switch units used for the pushbutton stations of a selector switch are marked "N.O." and "N.C." to indicate "normally open" or "normally closed" contacts of the switch. Pilot lights are furnished with pigtail leads for field wiring by use of wire nuts. Place cover on body and securely tighten cover screws. Power can be turned ON, as the assembly is now completed.

### SINGLE - GANG ENCLOSURES

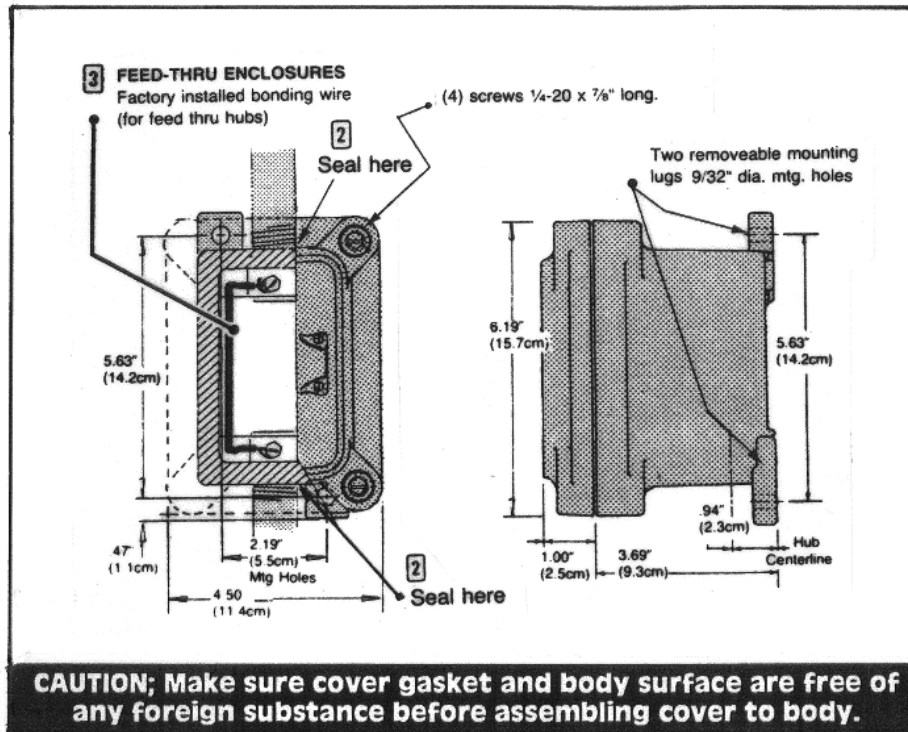
Furnished with a 3/4" to 1/2" reducer.



Dead-End

### DEAD-END ENCLOSURES

To provide complete corrosion protection after conduit is installed apply corrosion resistant material in hub recess and around exposed conduit threads.



**CAUTION; Make sure cover gasket and body surface are free of any foreign substance before assembling cover to body.**

U.S. Pat. 4,260,863 U.S. Pat. 3,699,276  
Patented Canada 1980 Patented Canada 1974

### Maintenance

A A schedule for maintenance check must be made at least once a year. It may be necessary to inspect frequently as necessary depending upon frequency of use and environment.

B If it is necessary to open enclosure for inspection, always disconnect from the supply power source before opening cover.

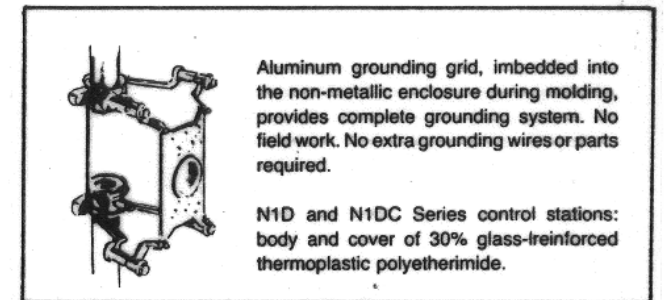
C Perform visual, electrical and mechanical checks on all components on a regular bases.

■ Visually check for undue heating which is evident by discoloration of wires and other components, damaged or worn parts, or leakage evidenced by water or corrosion inside enclosure.

■ Electrically check to make sure connections are tight and clean, contacts are properly making or breaking as required.

■ Mechanically check that all parts are properly assembled and all operating mechanisms are all moving freely.

**NOTE:** N1D and N1DC Series Receptacles are for use with Catalog Numbers ECP-1523, ECP-2023, and ECP-2023Z Plugs.



Aluminum grounding grid, imbedded into the non-metallic enclosure during molding, provides complete grounding system. No field work. No extra grounding wires or parts required.

N1D and N1DC Series control stations: body and cover of 30% glass-reinforced thermoplastic polyetherimide.