Inside-Outlet®
GFCI Utility Receptacle

outside your panel...

Power IN... → Power OUT...

...inside your panel

Grace Engineered Products' Inside-Outlet® is unique because it has three GFCI-protected receptacles - two outside and one inside the panel. Additionally, this GFCI receptacle's purpose is to provide companies a trouble-free step toward complying with NFPA 79, which states all externally-mounted utility receptacles must be GFCI protected and tested every 30 days. Accomplishing this directive is simple and time efficient with Inside-Outlet®. The non-GFCI outlets inside a panel can be wired through the Inside-Outlet®, which is then externally mounted on the panel door. Now testing is easy! Just walk up to the door, flip the protective cover, and push the button.

FEATURES

► **TEST/RESET** Safely Outside the Panel
► Finger Safe
► Outgoing Terminals for GFCI Protected Power
► Maintains Enclosure Rating
► NEMA 1, 12/4 or 4X
► Stand Alone Outlet or with a GracePort®

Inside-Outlet® GFCI Outlets	Part Numbers
NEMA 12/4	**H-RF0-K3**
with 15A CB	**H-RF15-K3**
with 20A CB	**H-RF20-K3**
with Class CC Fuse Holder*	**H-RF030-M3-H**
NEMA 4X	**H-RF0-K2**
with 15A CB	**H-RF15-K2**
with 20A CB	**H-RF20-K2**
with Class CC Fuse Holder*	**H-RF030-M2-H**
NEMA 1	**H-RF0-K1**
with 15A CB	**H-RF15-K1**
with 20A CB	**H-RF20-K1**
with Class CC Fuse Holder*	**H-RF030-M1-H**

*For higher interrupting rating, class CC Fuseholder (30A) included requires larger "M" sized housing. Fuse by customer.

NFPA 79: GFCI's....The Control Panel Utility Receptacle Standard:(2)

➤ *All* Utility Receptacles must be GFCI Protected
➤ *All* External Utility Receptacles must be Covered
➤ *All* Covers must Maintain Enclosure Rating

1.) OSHA requires monthly testing of all GFCI outlets
2.) NFPA 79 Electrical Machinery Safety Standard 2002 Edition Sections 16.1.1 (6), 16.1.2
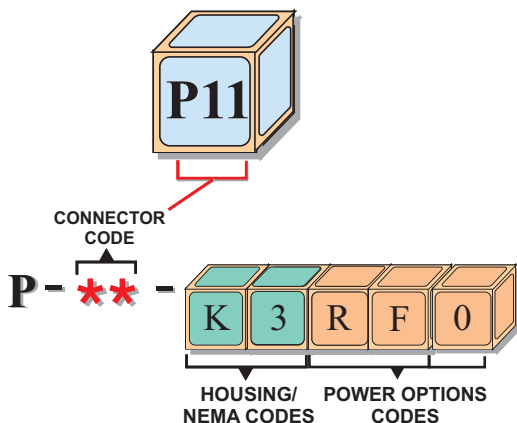
UL® RoHS CSA®

US Patents 6,700,062 and 6,831,226 B2

P11

CONNECTOR CODE

P - ✱✱ -

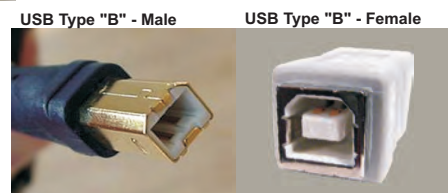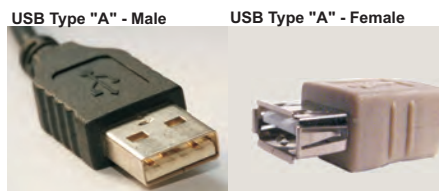| K | 3 | R | F | 0 |

HOUSING/ NEMA CODES   POWER OPTIONS CODES

GracePort® USB
Universal Serial Bus

A Universal Serial Bus (USB) is a staple in interface devices, and Grace Engineered Products is your world-wide headquarters for any combination of USB port.
All USB GracePorts® offered by Grace Engineered Products are pass-through, 2.0 connectors that do not alter the electrical signal in anyway. Grace offers both Type A and Type B connectors and custom makes every USB GracePort® according to the customer's precise specifications.

P-P11#2-K3RF0

USB Type "A" - Male   USB Type "A" - Female

USB Type "B" - Male   USB Type "B" - Female

Type A to Type A
Male to Male

Type B to Type A
Male to Male

Type A to Type A
Male to Female

Thru-door Flash Drive!

Maintain your NEMA rating by having this thru-door, recessed USB access. You can insert your flash drive and close the lid while you run your program.*

*Maximum flash drive dimensions are 2.25L x 0.68W x 0.35H. Please call with questions. Remember, we customize!

P-P50-B3RX

CONNECTOR CODES	USB TYPE - Front to Back	GENDER OUTSIDE	GENDER INSIDE
P11	TYPE "A" TO "A" with 10' cable	FEMALE	MALE
P15	TYPE "B" TO "B" with 6' cable	FEMALE	MALE
P19	TYPE "A" TO "B" Bulkhead	FEMALE	FEMALE
P22	TYPE "A" TO "A" Bulkhead	FEMALE	FEMALE
P27	TYPE "B" TO "B" Bulkhead	FEMALE	FEMALE
P28	USB KEYBOARD with 10' cable	N/A	N/A
P29	USB MOUSE with 10' cable	N/A	N/A
P50	USB FLASH DRIVE* Port with 10' cable	FEMALE	MALE
Q50	TYPE "A" TO "B" Bulkhead	FEMALE	FEMALE
Q51	TYPE "B" TO "A" Bulkhead	FEMALE	FEMALE

FEATURE PRODUCT!

*Flash drive is not included.

GracePorts® are intended to be mounted in or on an enclosure product. Installation should be performed by a qualified technician and adhere to applicable regulatory codes. These devices are for mounting on the flat surface of enclosures having the same type enviornmental ratings.

SPECIFICATIONS: ELECTRICAL
Low voltage (data), limited to 30 VDC
High voltage supply (for computer use only)
120 VAC, 15A (UL), 5A (CSA)
230-240 VAC, 16A (CE only)

SPECIFICATIONS: MECHANICAL
Housing: Cast aluminum base
Latch: Type 304 Stainless Steel (1CR18NI19)
Cover: Polycarbonate, UV rated, V-O Flame rated
Gasket: Thermoplastic elastomer
Insert Material: Acrylic UL94HB

APPROVALS
UL: RECOGNIZED: E207344 (Outdoor Use)
CSA: LR110845 (not for interrupting circuit)
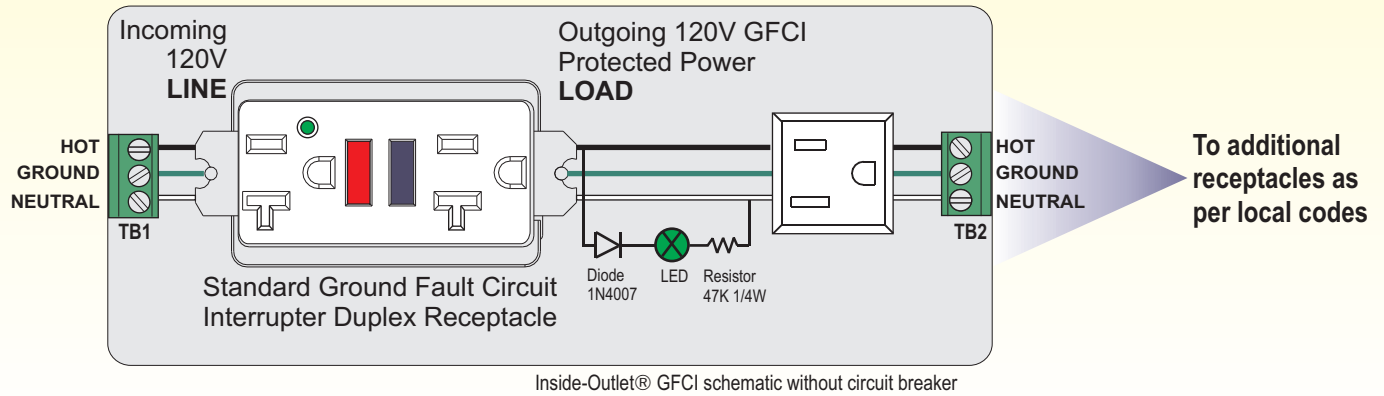**CE:** EN61010/EN60950 (Foreign Power Outlets)

CSA® UL® CE

GRACE ENGINEERED PRODUCTS, INC

Data:USB:10/2007

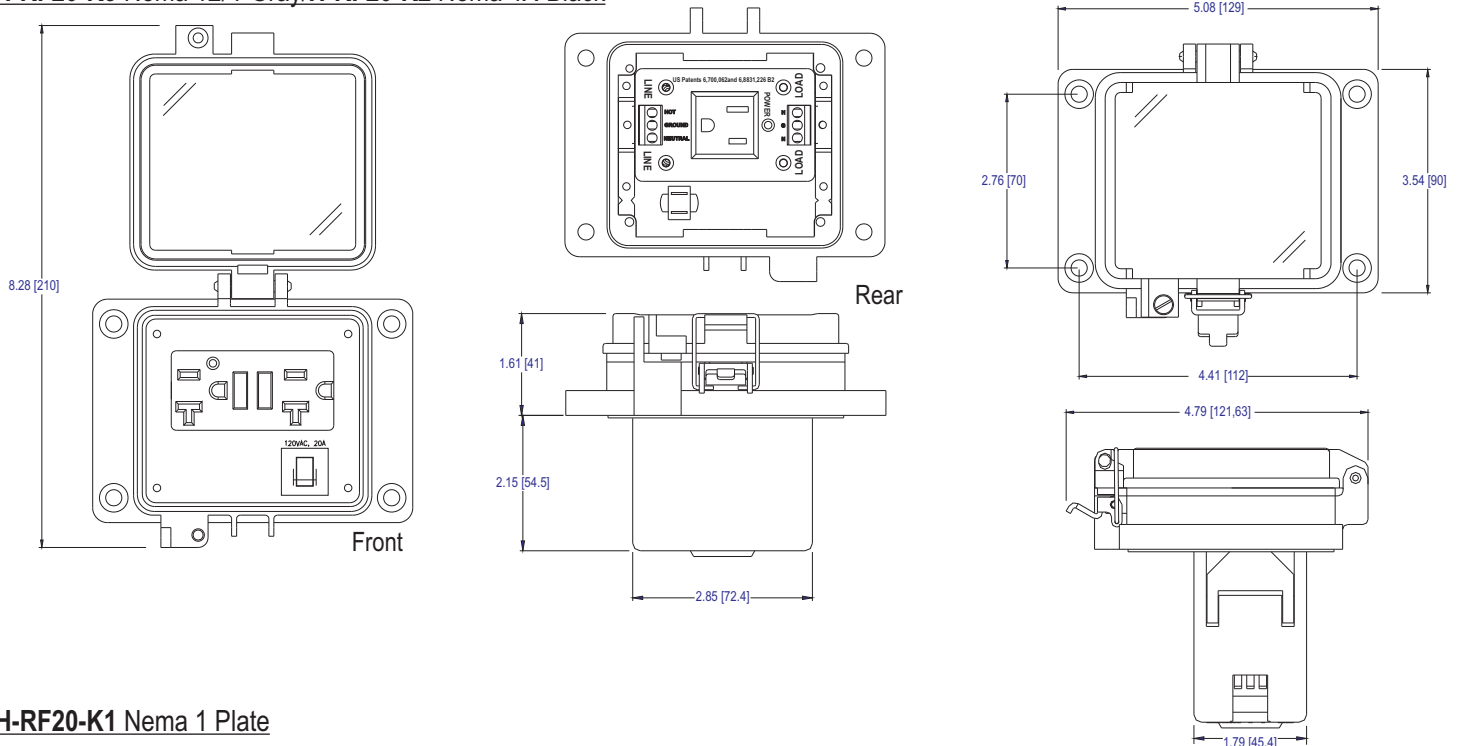**5001 Tremont Avenue
Davenport, IA 52807
(800) 280-9517   Fax: (563) 386-9639**

www.graceport.com

Inside-Outlet® Installation Instructions

Incoming 120V **LINE**

Outgoing 120V GFCI Protected Power **LOAD**

HOT
GROUND
NEUTRAL
TB1

HOT
GROUND
NEUTRAL
TB2

To additional receptacles as per local codes

Standard Ground Fault Circuit Interrupter Duplex Receptacle

Diode 1N4007   LED   Resistor 47K 1/4W

Inside-Outlet® GFCI schematic without circuit breaker

H-RF20-K3 Nema 12/4-Gray/**H-RF20-K2** Nema 4X-Black

8.28 [210]

Front

US Patents 6,700,062and 6,8831,226 B2

Rear

1.61 [41]

2.15 [54.5]

2.85 [72.4]

5.08 [129]

2.76 [70]

3.54 [90]

4.41 [112]

4.79 [121,63]

1.79 [45.4]

120VAC, 20A

H-RF20-K1 Nema 1 Plate

3.54 [90]

5.08 [129]

120VAC, 20A

Panel Cutout (Nema 1,12/4,4X)

2.9 [74]

3.4 [86]
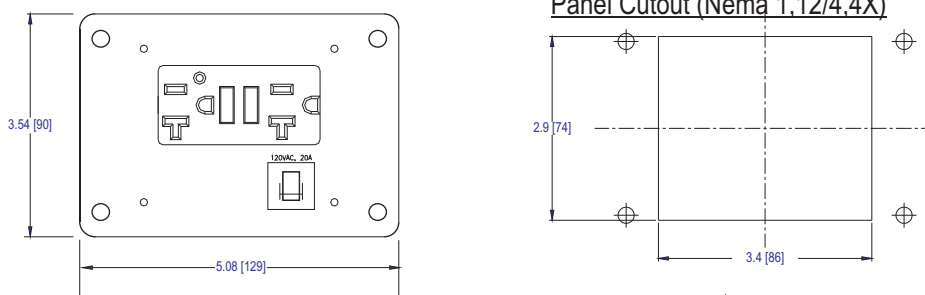
⚠ INSTALLATION

Inside-Outlet® receptacles are intended to be mounted in or on an enclosure product. Installation should be performed by a qualified electrician and adhere to applicable regulatory codes. These devices are for mounting on the flat surface of enclosures having the same type environmental ratings.

1) Cut panel opening and mount Inside-Outlet® receptacles to enclosure with gasket.

2) Connect input power to LINE terminal (TB1) as per local codes.

3) Additional receptacles may be wired as per local codes to the LOAD terminals (TB2).

SPECIFICATIONS: MECHANICAL

Housing: Cast aluminum base
Latch: Type 304 Stainless Steel (1CR18NI19)
Clear Housing Cover: Polycarbonate, V-O & UV rating
Inside-Outlet® Gray Shroud: V-O Flame Rating
Gasket: Thermoplastic elastomer
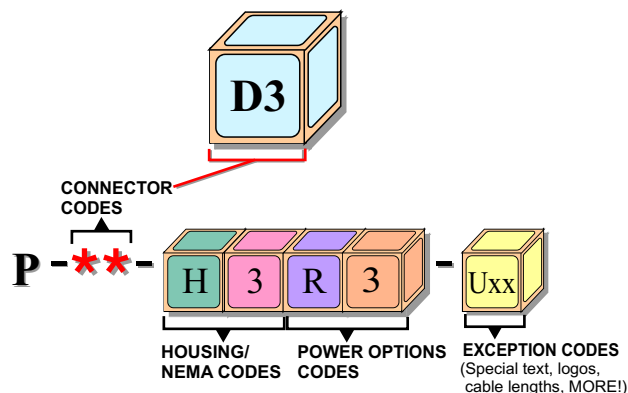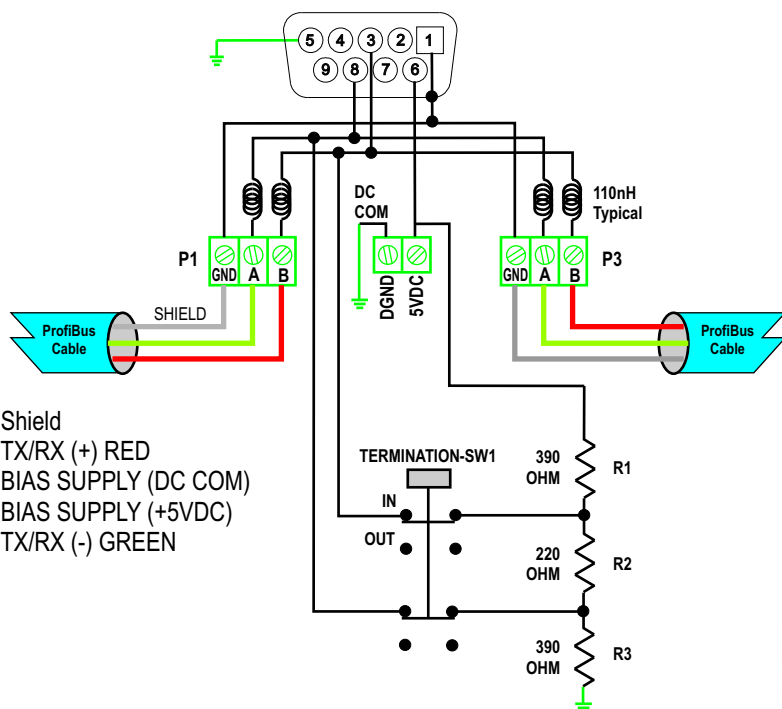Insert Material: Acrylic UL94HB

APPROVALS

UL: Recognized: E207344 Type 4 (Gray), 4X(Black), IP-65 (Outdoor Use)
CSA: LR110845

UL® CSA® RoHS

GracePort®
ProfiBus Network Tap
Data Sheet

CONNECTOR CODES

P-**-H 3 R 3-Uxx

HOUSING/NEMA CODES
POWER OPTIONS CODES
EXCEPTION CODES
(Special text, logos, cable lengths, MORE!)

1: Shield
3: TX/RX (+) RED
5: BIAS SUPPLY (DC COM)
6: BIAS SUPPLY (+5VDC)
8: TX/RX (-) GREEN

P-D3-H3R3

P-D3-M3RF0
NEMA 12/4 ProfiBus Network Tap with an **Inside-Outlet™** GFCI Convenience Receptacle (Standard on all GracePorts® with GFCI's)

FREE Receptacle with GFCI!

⚠️ **Installation:**

The GracePort® ProfiBus D3-Series interface board incorporates network balance inductors which are required for transfer rates up to 12MB.

1.) Mount the GracePort® on the panel as per Grace Engineered Products Installation Instructions. ProfiBus cable installation should be done by qualified personnel. Carefully adhere to Standard Profibus Cabling Guidelines.

2.) If the Profibus DP D3-Code interface is the last node on the network, then switch "SW1" to the "ON" position and connect a 5VDC power supply between terminal +5VDC and DGND.

3.) Programming requires a standard pin-to-pin extension ProfiBus cable under 3 feet length. *Or use Grace Part Number Z-020-1058-003.*

NFPA 70E Compliant

RoHS Upon Request

SPECIFICATIONS: ELECTRICAL
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120 VAC, 15A (UL), 5A (CSA)
230-240 VAC, 16A (CE only)

SPECIFICATIONS: MECHANICAL
Housing: Cast aluminum base
Latch: Type 304 Stainless Steel (1CR18NI19)
Cover: Polycarbonate, UV rated, V-O Flame rated
Gasket: Thermoplastic elastomer
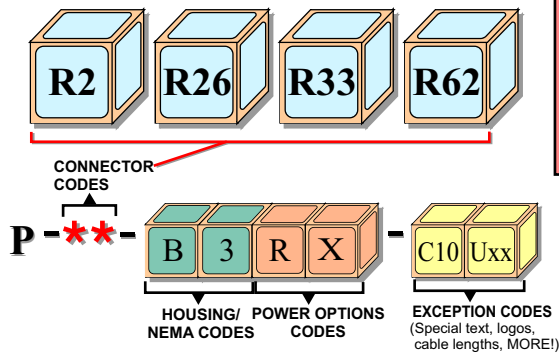Insert Material: Acrylic UL94HB

APPROVALS

UL RECOGNIZED: E207344 (Outdoor Use)
CSA: LR110845 (not for interrupting circuit)
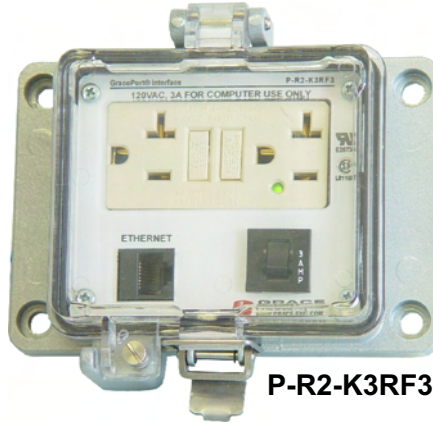**CE**: EN61010/EN60950 (Foreign Power Outlets)

GracePort® Ethernet Port Connector Code Data Sheet

R2 R26 R33 R62

CONNECTOR CODES

P - ** - **B 3** **R X** - **C10 Uxx**

HOUSING/ NEMA CODES

POWER OPTIONS CODES

EXCEPTION CODES (Special text, logos, cable lengths, MORE!)

P-R2-K3RF3

P-R2-B3RX

P-R2-F3R0

Grace has *your* ethernet access solution.

CONNECTOR CODE	DESCRIPTION
R2	**CATEGORY 5 RJ45 F/F BULKHEAD**
R26	**CATEGORY 5 RJ45 F/IDT BULKHEAD**
R33	**CATEGORY 5 SHIELDED RJ45 F/F BULKHEAD**
R62	**CATEGORY 6 RJ45 F/F BULKHEAD**

⚠ INSTALLATION

GracePorts® are intended to be mounted in or on an enclosure product. Installation should be performed by a qualified technician and adhere to applicable regulatory codes. These devices are for mounting on the flat surface of enclosures having the same type of environmental rating.

SPECIFICATIONS: ELECTRICAL
Low voltage (data), limited to 30 VDC
High voltage supply (for computer use only)
120 VAC, 15A (UL), 5A (CSA)
230-240 VAC, 16A (CE only)

SPECIFICATIONS: MECHANICAL
Housing: Cast aluminum base
Latch: Type 304 Stainless Steel (1CR18NI19)
Cover: Polycarbonate, UV rated, V-O Flame rated
Gasket: Thermoplastic elastomer
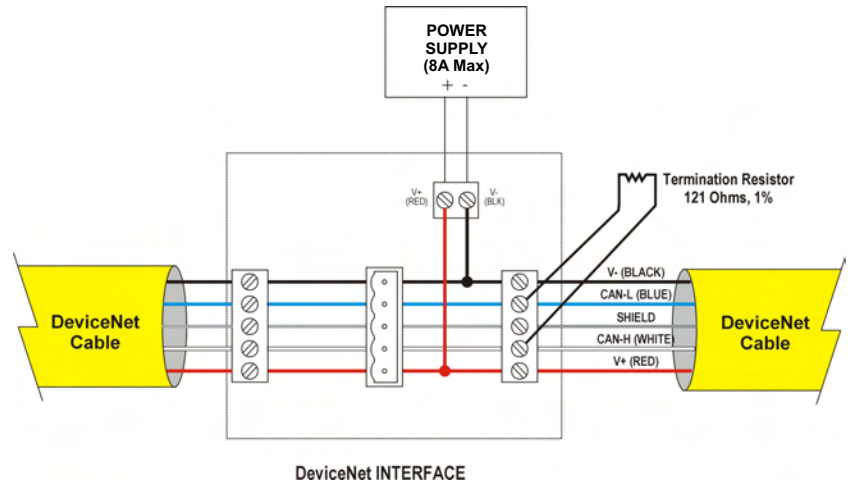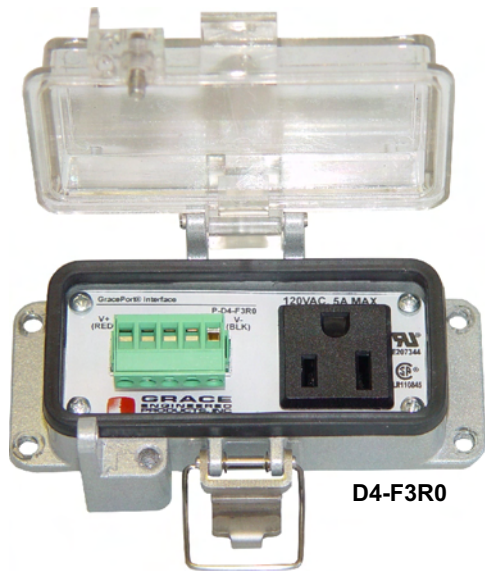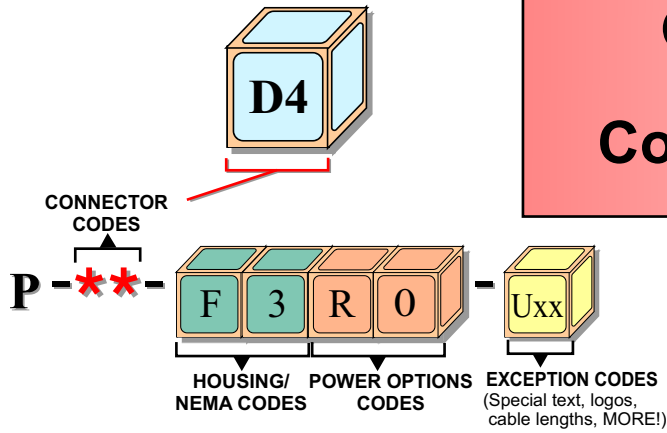Insert Material: Acrylic UL94HB

APPROVALS 🆄🅻® 🅲🆂🅰® RoHS
UL RECOGNIZED: E207344 (Outdoor Use)
CSA: LR110845 (not for interrupting circuit)
CE: EN61010/EN60950 (Foreign Power Outlets)

GRACE ENGINEERED PRODUCTS, INC
www.GracePort.com

GracePort® DeviceNet
Connector Code Data Sheet

D4

CONNECTOR CODES

P - **✱✱** - F 3 R 0 - Uxx

HOUSING/ NEMA CODES   POWER OPTIONS CODES   EXCEPTION CODES (Special text, logos, cable lengths, MORE!)

D4-F3R0

POWER SUPPLY (8A Max)

Termination Resistor 121 Ohms, 1%

DeviceNet Cable

V- (BLACK)
CAN-L (BLUE)
SHIELD
CAN-H (WHITE)
V+ (RED)

DeviceNet Cable

DeviceNet INTERFACE

⚠ INSTALLATION

GracePorts® are intended to be installed by a qualified technician and adhere to applicable regulatory codes. This device is for mounting on the flat surface of enclosures having the same type environmental ratings.

Instructions: Mount the interface on the panel as per Installation Instructions. Terminate the DeviceNet Network Cable to the appropriate marked terminal blocks as per your manufacturer's standard DeviceNet Cabling Instructions. If the interface is the last station, install a 121 Ohm 1% termination resistor as shown on Figure 1.

The GracePort® Interface has terminals to connect an 8 Amp "DeviceNet" power supply as shown in Figure 1.

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120 VAC, 15A (UL), 5A (CSA)
230-240 VAC, 16A (CE only)

SPECIFICATIONS: MECHANICAL
Housing: Cast aluminum base
Latch: Type 304 Stainless Steel (1CR18NI19)
Cover: Polycarbonate, UV rated, V-O Flame rated
Gasket: Thermoplastic elastomer
Insert Material: Acrylic UL94HB

APPROVALS   ᴿᵁ   CSA   RoHS Upon Request

UL RECOGNIZED: E207344 (Outdoor Use)
CSA: LR110845 (not for interrupting circuit)
CE: EN61010/EN60950 (Foreign Power Outlets)