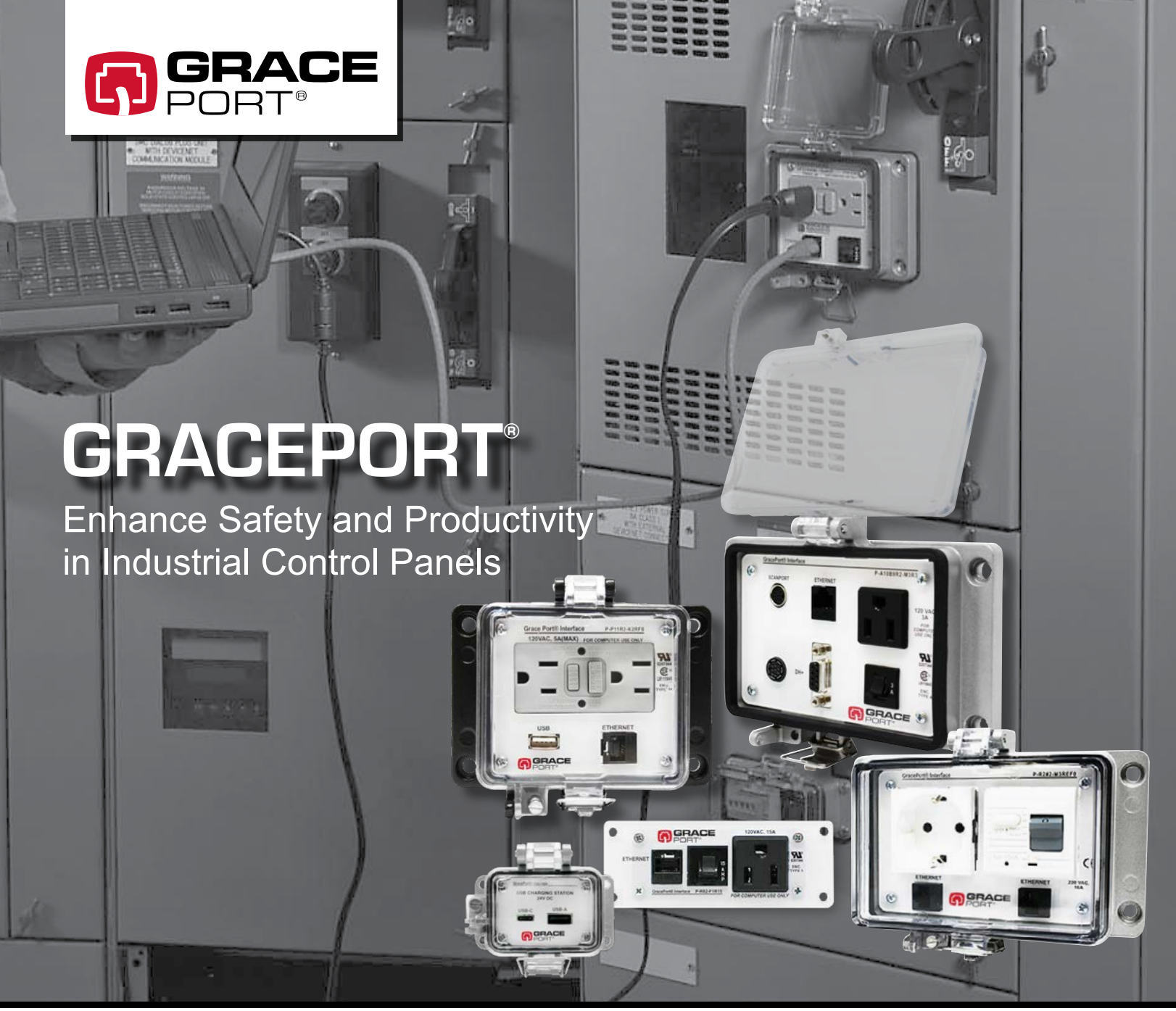


GRACEPORT®

Enhance Safety and Productivity in Industrial Control Panels

GRACEPORT® FEATURES

- **GracePorts®** are panel interface connectors that provide safe access to PLC control panels through closed doors.
- Our **GracePorts®** can be fully customized with a variety of components, housings, domestic and international power options to match your specific application. We can also add your logo or custom text to make your configuration unique to you.
- We offer quick assembly and delivery and ship each **GracePort®** within 2-3 business days.
- Thru-door access enabled by **GracePorts®** enhances compliance to OSHA, NEC & NFPA 70E/CSA Z462.

Actual product certification will vary with component selection.

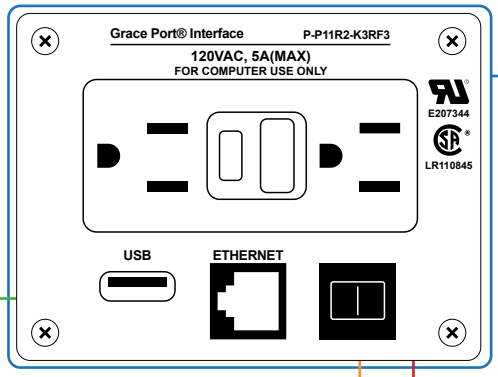
FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

BUILD YOUR CUSTOMIZABLE GRACEPORT®

This is what sets a GracePort® apart from other communication ports. We can create a custom-built GracePort®, including special text, cut-outs, cable lengths, and even adding your company logo, all in just a few days. Assembled in the USA and created just the way you want it.

Components

There are various connectors available and are represented by a two to three digit code found in between the first two dashes of our GracePort® part number layout. Multiple connectors in a GracePort® are listed alpha-numerically and multiples of the same component are followed by # and the quantity. See the next page for some of our common components.



Housing Size & UL Rating

Several housing types are available to meet your needs. The size of your housing depends on several variables including the kinds of components you choose, the power option you want and, in some cases, the UL rating you need. UL ratings offered include UL Type 1, 3R, 4, 4X, and 12.

Circuit Breaker / Power Option

Many power options for international and domestic use are available and are represented by a one to two or three letter code. Because circuit breakers offer the ability to limit what devices can be run through the GracePort®, we offer different amperages as well.

Over 15,000 unique GracePorts® created and shipped in 2-3 business days!

Shop Now

NEW TECHNOLOGY

The latest GracePort® component features a USB-C charging functionality that allows service technicians and PLC programmers to safely charge laptops and other handheld devices from outside the door. USB-C connections are quickly becoming an industry-standard connector for transmitting both data and power through a single cable.

P-C1-B3RX

Under OSHA directives and NFPA 70E guidelines, voltages operating below 50 Volts do not require guarding against accidental contact which is required by OSHA under 29 CFR 1910.303(g)(2)(i). The USB-C component features a 24VDC-powered charging option that eliminates shock and arc flash hazard risk.

FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

Actual product certification will vary with component selection.

HOUSING OPTIONS

UL Type 1
Indoor use primarily to provide protection against contact with the enclosed equipment and against a limited amount of falling dirt. Choose from our standard sizes and interfaces or a custom interface to fit your exact requirements. Units can be built with gasketing to offer an extra measure of protection against dust and other contaminates.

UL Type 4
Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water and hose-directed water; undamaged by the formation of ice on the enclosure.

UL Type 4X
Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water and hose-directed water; undamaged by the formation of ice on the enclosure; resists corrosion.

UL Type 3R
In-use extra-duty housings allow items to be plugged in while the cover is closed, which offers added protection against moisture. Outdoor use to provide a degree of protection against falling rain; undamaged by the formation of ice on the enclosure. Designed for wet or damp locations.

UL Type 12
Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water and external condensation of noncorrosive liquids.

Stainless Steel
Keep stainless steel enclosures closed with the #304 or #316 stainless steel GracePort® interface. The 100% stainless steel GracePort® housing is designed to meet rigorous environments. Also available in a low-profile design.

Surface Mount Heavy Duty
Surface Mount Housings are made from a cast alloy base and are IP65 Rated when installed. These housings provide excellent protection for GracePort® components and power options from contaminants such as dust and debris as well as protection from water entry. This makes these types of housings suitable for corrosive environments and/or areas that require frequent wash downs.

Hazardous Location
The Hazardous Location GracePort® (M7) is intended for environments where the user must perform a “sniff test” and typically obtain a “Hazardous Work Permit” before opening the enclosure. The housing is especially well suited for use with the GracePort Low Profile Circuit Board for ease of field wiring.

Need to cover an existing HMI or UL Type 1 GracePort®? GracePort®+ has you covered - refer to the GracePort+ Datasheet for more information.

FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

Actual product certification will vary with component selection.

BUILDING YOUR CUSTOM GRACEPORT®

Varieties of components are available and can be paired together in your fully customized GracePort®. Whether you need something as common as an RJ45 or as unique as a DVI female-to-female feed-thru bulkhead, Grace Technologies can design and create a GracePort® for you.

Components

Ethernet & Network Interfaces

DESCRIPTION	TYPE	GENDER FRONT	GENDER BACK	CODE
Category 5e Ethernet	Bulkhead	RJ45Female	RJ45Female	R2
Category 5 with M/M patch cable	Bulk head	RJ45Female	RJ45Female	R13
Category 5e Shielded	Bulkhead	RJ45Female	RJ45Female	R33
Category 6 Ethernet	Bulkhead	RJ45Female	RJ45Female	R62
Category 6 Shielded	Bulkhead	RJ45Female	RJ45Female	R31
Ethernet Switch (5 ports)	Unmanaged	RJ45Female (1)	RJ45Female (4)	E5
Antenna with Coaxial Coupler	Cable	SMA F/F	SMA F/F	Q43

Keyboard, Mouse & Monitor

Keyboard (PS/2)	Cable	6MDINFemale	6MDINMale	P3
Keyboard (USB)	Cable	USBAFemale	USBAMale	P28
Modem	Bulkhead	RJ12Female	RJ12Female	P7
Mouse (PS/2)	Cable	6MDINFemale	6MDINMale	P5
Mouse (USB)	Cable	USBAFemale	USBAMale	P29
VGA Monitor	Cable	HDDB15Female	HDDB15Male	P6
HDMI	Bulkhead	HDMIFemale	HDMIFemale	P38
DisplayPort	Bulkhead	DisplayPort Female	DisplayPort Female	P39

Parallel Pin-to-Pin Extension Cables

8 Pin MiniDIN	Cable	8MDINFemale	8MDINMale	R8
8 Pin MiniDIN Locking	Cable	8MDINFemale	8MDINMale	R28
DB15 F/M	Cable	DB15Female	DB15Male	R11
DB15 M/F	Cable	DB15Male	DB15Female	R10
DB15HDM F/M (Not for VGA)	Cable	Female	Male	R45
DB15HDM M/F (Not for VGA)	Cable	Male	Female	R44
DB25 F/M	Cable	DB25Female	DB25Male	P2
DB9 F/M	Cable	DB9Female	DB9Male	R3
DB9 M/F	Cable	DB9Male	DB9Female	P1

Serial, Parallel

DB25 Parallel	Cable	DB25Female	DB25Male	P2
DB9 Serial	Cable	DB9Male	DB9Female	P1

Universal Serial Bus

DESCRIPTION	TYPE	GENDER FRONT	GENDER BACK	CODE
USB 4 to 1 Hub	Bulkhead	USB-BFemale	USB-BFemale	P44
USB Memory Stick	Cable	USB-AFemale	USB-AMale	P50
USB Mini Type B 5 POS	Cable	USB-BFemale	USB-BMale	P42
USB Type A/B F/F	Bulkhead	USB-AFemale	USB-BFemale	Q50
USB Type A-A Cable	Cable	USB-AFemale	USB-AMale	P11
USB Type A-A F/F	Bulkhead	USB-AFemale	USB-AFemale	P22
USB Type B/A F/F	Bulkhead	USB-BFemale	USB-AFemale	Q51
USB Type B/B F/F	Bulkhead	USB-BFemale	USB-BFemale	P27
USB Type B/B M/M	Bulkhead	USB-BMale	USB-BMale	P31
USB Type B/F to USB Type B/M (6' integrated cable)	Cable	USB-BFemale	USB-BMale	P15
USB-A (3.0) with 1.5' cable	Cable	USB-AFemale	USB-BMale	P13
Type A to B	Bulkhead	USB-AFemale	USB-BFemale	P19
USB-A (3.0)		USB-AFemale	USB-AFemale	P33
USB-C Charging Adapter	Cable	USB-C & A Female	24V Terminal	C1
SD Card Adapter	Cable	SD Card Female	SD Card Male	P46

Banana Jacks

Black Banana Jack (sheathed)	Bulkhead	Female	Solder Terminal	Q85
Black Banana Jack (unsheathed)	Bulkhead	Female	Solder Terminal	Q75
Green Banana Jack (sheathed)	Bulkhead	Female	Solder Terminal	Q86
Green Banana Jack (unsheathed)	Bulkhead	Female	Solder Terminal	Q76
Red Banana Jack (sheathed)	Bulkhead	Female	Solder Terminal	Q84
Red Banana Jack (unsheathed)	Bulkhead	Female	Solder Terminal	Q74

Connector to Terminal Block PCB

DB9F (PCB Pins 1-9 to Terminal Block)	Term	DB9Female	Terminal Block	R1
DB9M (PCB Pins 1-9 to Terminal Block)	Term	D9Male	Terminal Block	R12
RJ-45 (PCB Pins 1-8 to Terminal Block)	Term	RJ45Female	Terminal Block	R15

The code in this area depends on whether you need a custom logo or text added. The GracePort® logo is the default.

DESCRIPTION	TYPE	GENDER FRONT	GENDER BACK	CODE
Data Switch				
DB9F 2:1	Custom	Female	Female	R38
DB9F 4:1	Custom	Female	Female	R39
Crossover – Generic DB9F	Custom	Qty (2) DB9	–	R49
Generic Bulkhead Interfaces				
4MDIN F/F	Bulkhead	Female	Female	Q26
50 ohm BNC	Bulkhead	Female	Female	Q42
6MDIN F/F	Bulkhead	Female	Female	Q28
75 ohm Bulkhd, Feed-Thru, Coaxial F/F (non BNC)	Bulkhead	Female	Female	Q40
8MDIN F/F	Bulkhead	Female	Female	Q29
DB-15 F/F	Bulkhead	Female	Female	Q35
DB-15 F/M	Bulkhead	Female	Male	Q37
DB-15 M/F	Bulkhead	Male	Female	Q38
DB-15 M/M	Bulkhead	Male	Male	Q36
DB-15HD F/F	Bulkhead	Female	Female	Q18
DB-15HD F/M	Bulkhead	Female	Male	Q11
DB-15HD M/F	Bulkhead	Male	Female	Q12
DB-15HD M/M	Bulkhead	Male	Male	Q19
DB-15HDVGA F/F	Bulkhead	Female	Female	Q22
DB-15HDVGA F/M	Bulkhead	Female	Male	Q24
DB-15HDVGA M/F	Bulkhead	Male	Female	Q23
DB-15HDVGA M/M	Bulkhead	Male	Male	Q25
DB-25 F/F	Bulkhead	Female	Female	Q4
DB-25 F/M	Bulkhead	Female	Male	Q8
DB-25 M/F	Bulkhead	Male	Female	Q10
DB-25 M/M	Bulkhead	Male	Male	Q16
DB-9 F/F	Bulkhead	Female	Female	Q3
DB-9 F/M	Bulkhead	Female	Male	Q7
DB-9 M/F	Bulkhead	Male	Female	Q9
DB-9 M/M	Bulkhead	Male	Male	Q15
RJ-11/12 F/F	Bulkhead	Female	Female	Q6
RJ-45 F/F	Bulkhead	Female	Female	Q17

Circuit Breaker Codes

No Breaker	0
1 AMP	1
2 AMP	2
3 AMP	3
5 AMP	5
6 AMP	6
8 AMP	8
10 AMP	10
15 AMP	15

Housing Options

HOUSING CODE	UL RATING
A	1, 3R, 4, 4X, and 12 *Not all housings are available in all UL Ratings* Sample Housing Code: B2 **First letter depicts size only** **Numeral refers to the environmental ratings below** 1 = UL TYPE 1 2 = UL TYPE 4X (IP-65) 3 = UL TYPE 4 (IP-65) 4 = UL TYPE 12 8 = UL TYPE 3R
B	
F	
G	
H	
JB7	
K	
L	
M	
M5	
M6	

Power Options

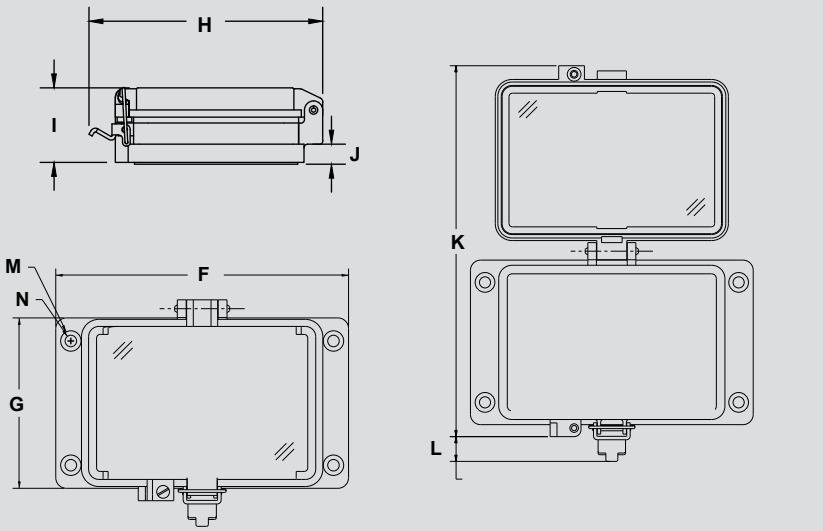
DESCRIPTION	VAC	AMPS	POWER CODE
Simplex	120	15	R
Duplex Outlet	125	20	RD
GFCI Inside-Outlet Rear Outlet 15 AMP, (UL recognized for 15 AMPs)	125	15	RF
IEC 320 Male Power Entry Module	250	15	RM
IEC 320 Female Power Entry Module	250	10	RP
TWIST LOCK Receptacle	125	15	RN
Power AC Inlet with On/Off Switch, 2 Pole	250	10	RS
12-24V Vehicle Style Accessory Socket	12	5	RC
USB Charger Receptacle: 2 Port, 3 amp, 5 VDC USB	125	15	RDC
Australia, New Zealand & People's Republic of China	250	10	RA
United Kingdom, Hong Kong, Ireland, Singapore & Malaysia	250	13	RB
United Kingdom with GFCI	250	16	RBF
Continental Europe "Schuko" (Germany, Finland, Netherlands, Norway, Sweden, Portugal, Spain, Greece, Soviet Republic & Eastern Bloc)	250	16	RE
France & Belgium	250	16	RH
India	250	15	RU
	250	6/16	RIN
Thailand	250	15	RW
Brazil	250	15	RQB
Israel	250	16	RZ
Argentina	250	10	RAG
Continental Europe with GFCI	230	16	REF
Italy	250	16	RI
Switzerland	250	10	RSW
Universal International	250	20	RUV

Need manufacturer specific components? See our complete listing of components at: www.graceport.com

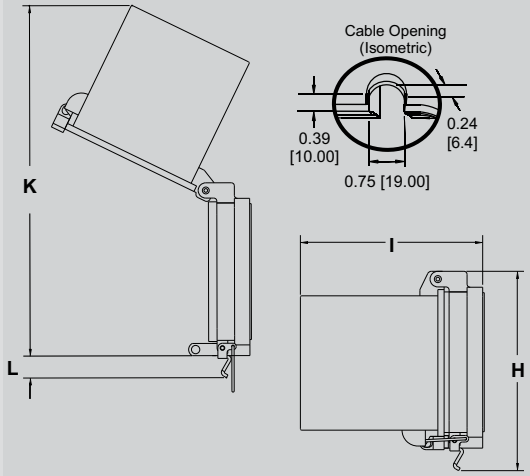
FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

OVERALL HOUSING SPECIFICATIONS *INCHES (MM)*

Thru-View Housings (Type 4, 4X, 3R, and 12)

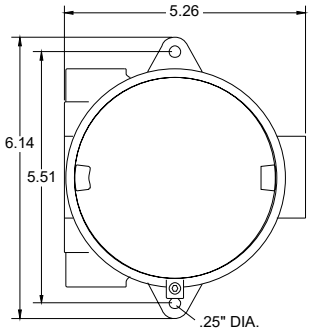


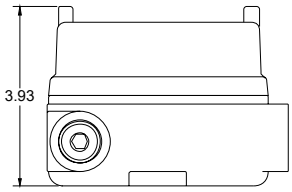
M8 HOUSING DETAIL ONLY



HOUSING CODE	F	G	H	I	J	K	L	MØ	NØ
B2, B3, B4	3.15 (80.0)	1.72 (43.6)	3.20 (81.2)	1.60 (40.7)	.20 (5.0)	4.33 (110.1)	.96 (24.4)	N/A	.18 ± .004 (4.6 ± .1)
F2, F3, F4	4.45 (113.0)	1.72 (43.6)	3.20 (81.2)	1.60 (40.7)	..20 (5.0)	4.87 (123.7)	.57 (14.4)	N/A	.18 ± .004 (4.6 ± .1)
H2, H3, H4	5.51 (140.0)	1.72 (43.6)	3.20 (81.2)	1.60 (40.7)	.20 (5.0)	4.87 (123.7)	.57 (14.4)	N/A	.18 ± .004 (4.6 ± .1)
K2, K3, K4	5.08 (129.0)	3.54 (90.0)	4.79 (121.6)	1.60 (40.7)	0.43 (11.0)	8.28 (210.2)	.45 (11.4)	.45 .22 (11.5 .5.5)	.26 ± .004 (6.5 ± .1)
M2, M3, M4	6.50 (165.0)	3.78 (96.0)	5.02 (127.6)	1.60 (40.7)	0.43 (11.0)	8.52 (216.4)	.57 (14.4)	.45 .20 (11.5 5.2)	.26 ± .004 (6.5 ± .1)
M8	6.50 (165.0)	3.78 (96.0)	5.02 (127.6)	4.59 (116.7)	0.43 (11.0)	9.03 (229.4)	0.57 (14.4)	.45 .20 (11.5 5.2)	.26 ± .004 (6.5 ± .1)

GracePort® Hazardous Location Housing





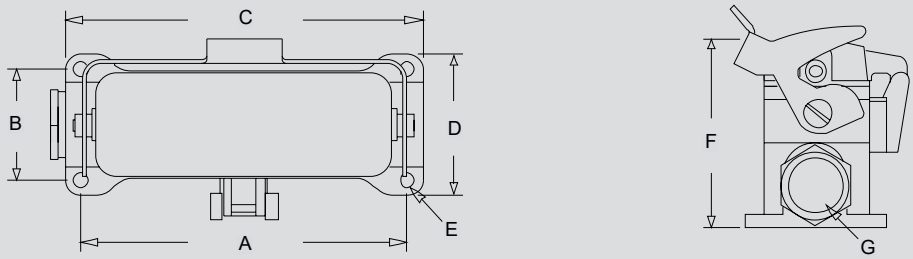
Class I, Div. 1 & 2, Groups A,B,C,D
Class I, Zones 1 & 2, Groups IIB +H2, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
NEMA 3,4,7 (B,C,D), 9 (E,F,G)
CENELEC - EEx D IIB IP66

UL Type 1

HOUSING ENVIRONMENT	SIZE: (H x W, INCHES)
B1	1.72 x 3.15
F1	1.72 x 4.45
H1	1.72 x 5.51
K1	3.54 x 5.08
M1	3.79 x 6.50
S1	Custom panel

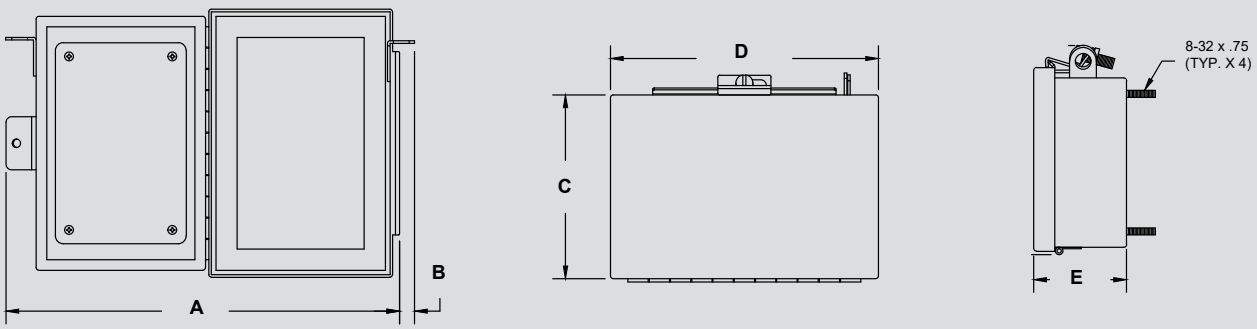
FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

Surface Mount UL Type 4



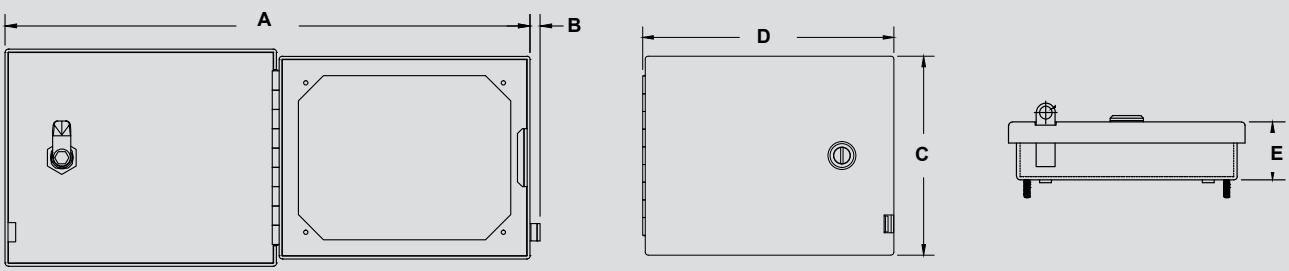
HOUSING CODE	WEIGHT (OZ)	A	B	C	D	E	F	G
A3	7.5	2.76[70]	1.57[40]	3.22[82]	2.05[52]	.22[5.5]	2.64[67]	1/2" NPT
G3	11.9	5.20[132]	1.77[45]	5.67[144]	2.24[57]	.22[5.5]	2.80[71]	3/4" NPT
L3	45.2	4.37[111]	4.17[106]	5.55[141]	4.72[120]	.25[6.4]	4.65[118]	1" NPT

Stainless Steel Housing Type 4X



HOUSING CODE	A	B	C	D	E	STAINLESS STEEL USED
M5	9.29 (236.1)	0.35 (9.0)	4.34 (110.2)	6.33 (160.8)	2.20 (55.8)	#304
M6	9.29 (236.1)	0.35 (9.0)	4.34 (110.2)	6.33 (160.8)	2.20 (55.8)	#316

Low-Profile Stainless Steel Housing NEMA Type 4



HOUSING CODE	A	B	C	D	E	STAINLESS STEEL USED
JB7	13.60 (345.5)	0.26 (6.6)	5.63 (142.9)	7.10 (180.4)	1.38 (34.9)	#304

FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

FREQUENTLY ASKED QUESTIONS

Q: Do you have CAD drawings for GracePort® Housings?

A: Absolutely! We have 2D PDF, 2D DWG, and 3D STP files available. Visit your configuration at www.graceport.com to download or email: sales@gracetechnologies.com.

Q: What is the SCCR rating for the accessory power outlets/ receptacles used with GracePorts®?

A: Since GracePorts® are offered with variety of power outlet options, the default SCCR ratings as defined in the UL 508A Table SB4.1 apply to the power outlet offerings. OEMs are required to use current limiting fuses of Class CC type in the upstream to increase the SCCR rating for the accessory power outlets used in the GracePorts® to match with their panel SCCR ratings. Below is the Short Circuit Current Rating of the various receptacle outlets offered with GracePorts®.

- *Any outlet with a Circuit Breaker: 0.2kA*
- *Standard GFCI (RF): 2kA*
- *Simplex (R): 10kA*
- *Duplex (RD): 10kA*
- *High Interrupt GFCI (RX-K10): 10kA*

Q: I work for a UL 508 panel shop, do I need to match the housing rating to my enclosure?

A: For UL 508 panel shops, the UL rating of the housing must match the rating of the enclosure. It cannot exceed in order to pass (i.e. use UL 4X GracePort on UL 4 rated enclosure). If UL 508 is not needed or desired, a housing can exceed the rating of the enclosure with no problems.

Q: What is the difference between a GFCI and Circuit Breaker?

A: A GFCI is designed with the goal of keeping the operator safe, if a current leak is detected the current will be interrupted. This trip can be caused by any imbalance between hot and neutral lines, even something as small as 4 to 5 milliamps or if any power is flowing through anything other than the circuit (such as a human). A circuit breaker is designed to protect your equipment by not allowing your circuit to overheat. For example, a 5A circuit breaker will not allow over 5A of current through the circuit.

Q: What is the GFCI rated for and does the GFCI protect all three outlets?

A: The exterior duplex outlet and the inside is rated for 15A. All three outlets are protected by GFCI. For an exterior 20A option (F2 exception code) contact your local sales representative.

Q: Do you sell components separately?

A: Unfortunately no, we do not sell components separately.

Q: What's the difference between Shielded and Unshielded Ethernet Ports? Do I need a Shielded Port?

A: Shielded Ethernet cables and ports are typically used when there is high electromagnetic power presence that will interfere with communication. This is oftentimes found in welding applications. Typically if you are not aware that you have a high EMI (Electro-Magnetic Interference) environment, you will not need the shielded port or cable.

Q: Do Grace Permanent Electrical Safety Devices (PESDs) work with these housings as well?

A: The Voltage Test Station, which contain a Voltage Indicator and the Safe-Test Point, will fit within the "M" size housings. Individual PESD Products can be placed in smaller size housing depending on the application. For more information on PESDs, please go to www.PESD.com or contact your local sales representative to customize your GracePort®.

Q: I have an urgent order, can it ship today?

A: We have many GracePort® components readily in stock. If your GracePort® uses common components and the order is recieved by 11:00am CST many times your GracePort® can ship that day. Expedite fees apply.

Q: Can I get my company logo printed on the faceplate?

A: Absolutely! Custom logo and text options are available on the GracePort® faceplate. The recommended file resolution is 600dpi .jpg for submitted text and logos. Contact your local sales representative for more details.

FOR MORE INFORMATION VISIT GRACEPORT.COM OR CALL 1.800.280.9517

GRACE TECHNOLOGIES