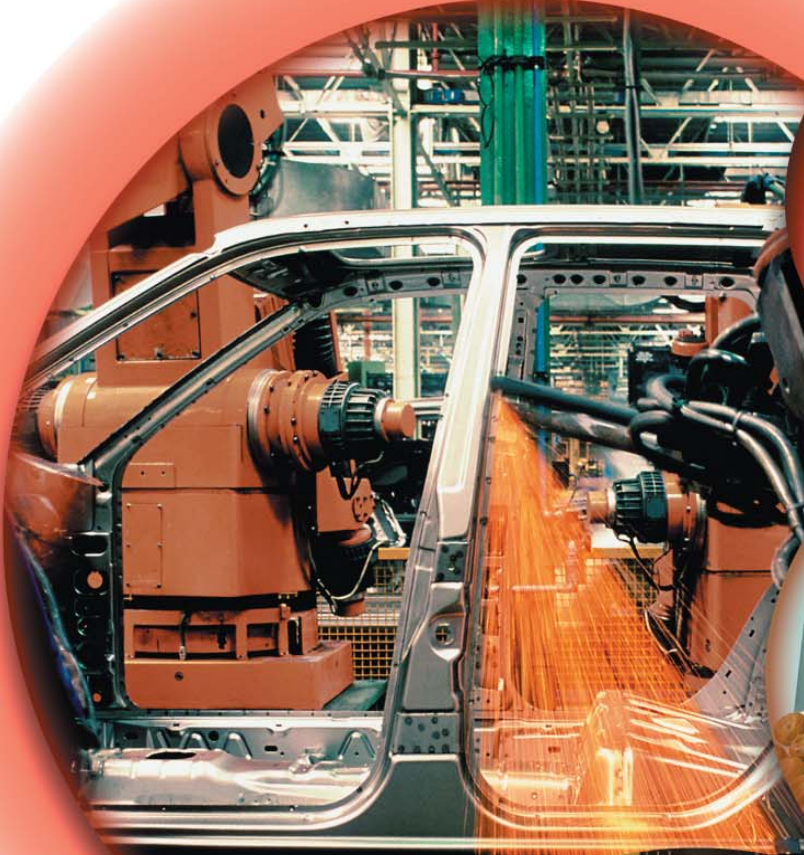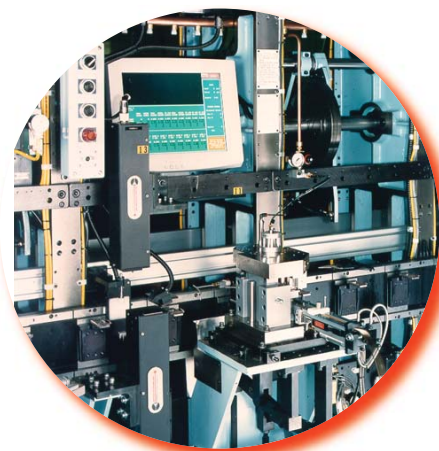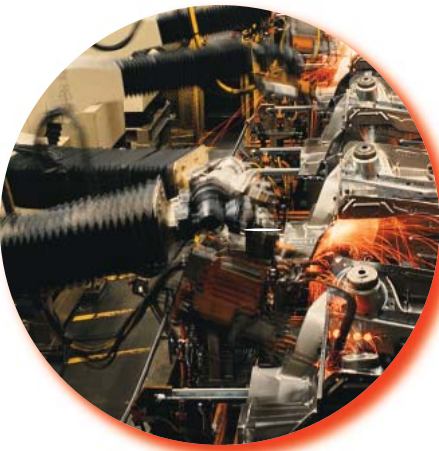# HI-IMPACT™

Complete Communication Solution for Harsh Environments.

From the most severe industrial to punishing commercial, HI-IMPACT™ System answers the call . . .

In today's competitive market the ability to access "Real Time" data is critical to customer satisfaction. "Real-Time" data supports the global trend of e-commerce, quick-response and vendor-managed inventory systems. Customers and suppliers now have the ability to look at all points in the supply chain, from raw material to finished goods. This ultimately improves responsiveness and provides a competitive edge to be best in class.

The global acceptance of Ethernet protocol has pushed RJ45 connectors from the corporate office to the more demanding industrial and harsh commercial environments. This trend has created the need for a more dynamic and robust solution. In these environments the typical mated connection may corrode, wear, clog with debris, and eventually fail. High maintenance costs, downtime and critical failure are the results, where dust, moisture, temperature extremes, EMI, and vibration are commonplace.

Hubbell's HI-IMPACT™ system is more than just a connection. It is a complete end-to-end communications solution designed to solve problems in the most severe industrial to punishing commercial environments.

. . . Spanning applications from A to Z.

Automated Tellers Machines
Billboards & Display
Educational
   K-12
   University
Entertainment & Hospitality
   Casinos
   Convention Center
   Entertainment
   Fast Food
   Hotels
   Resorts
   Restaurants
   Stadiums
   Theme Parks
Food
   Commercial Kitchens
   Fast Food Industry
   Food Processing
Geological Testing

Laboratories
Manufacturing
   Automation
   Automotive
   Finishing and Plating
   Foundries
   Material Handling
   Molding
   Paper Mills
   Pharmaceutical
   Process & Control
   Robotics Welding
   Stamping
   Tool & Die
   Warehouses
Marinas
Medical
   Hospitals
   Mobile Medical Units
Military

Mining Industries
Oil Industries
Retail
   Supermarkets
Transportation
   Airports
   Bus Stations
   Subways
   Train Stations
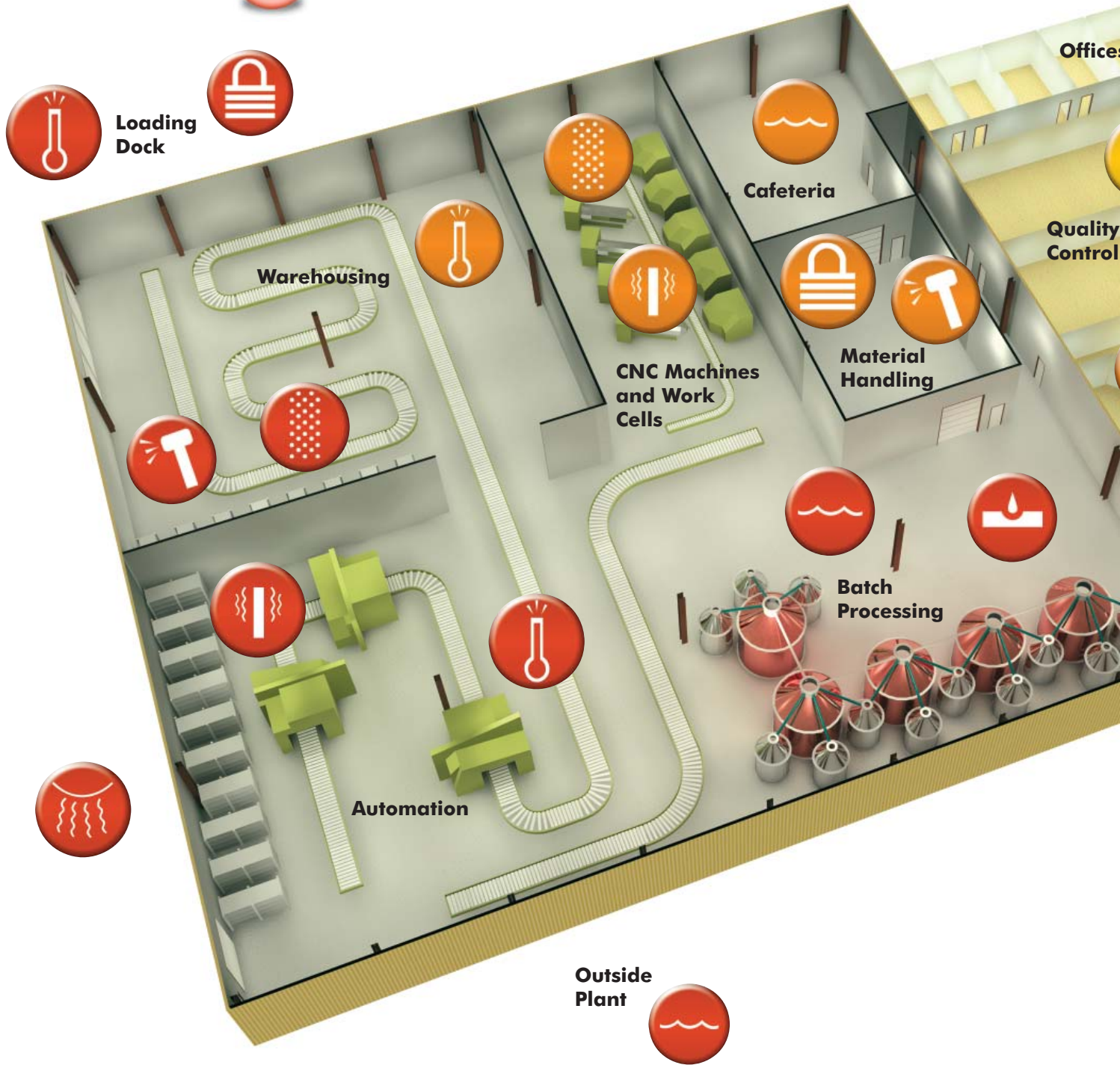Utility Companies
   Electric Utilities
   Refinement & Waste
   Treatment facilities
Vending Machines
Wireless
Zoos

HARSH-e A Comprehensive Rating System.

Loading Dock

Offices

Cafeteria

Quality Control

Warehousing

CNC Machines and Work Cells

Material Handling

Batch Processing

Automation

Outside Plant

The **H**ubbell **A**pplications **R**ating **S**ystem for **H**arsh **E**nvironments (HARSH-e) simplifies specifying the right product by categorizing environmental conditions into three classes – severe, harsh and tough.

For each environmental condition, identify the level that best describes your application in the HARSH-e table.

The most severe environmental condition dictates the HARSH-e level for your application.

See the page for the corresponding HARSH-e level for the product set and system components.

Research & Development

Laboratory

HARSH- e
Hubbell Application Rating System for Harsh Environments

	e3 Application Severe	e2 Application Harsh	e1 Application Tough
Dust	Enclosures: **NEMA 4X** Connectors: **IP67** and **IP66** Totally protected against dust (Dust-tight)	Enclosures: **NEMA 4/12/13** Connectors: **IP67** and **IP66** Protected against dust, Objects greater than 1 mm	Enclosures: **NEMA 3R** Connectors: **IP43** Objects greater than 1 mm i.e., tools, wires, small wires
Water	Enclosures: **NEMA 4X** Connectors: **IP67** and **IP66** Immersion and strong pressure jets	Enclosures: **NEMA 4/12/13** Connectors: **IP67** and **IP66** Protected against strong and low pressure jets	Enclosures: **NEMA 3R** Connectors: **IP43** Protected against sprays of water to 60° from vertical
Corrosion	Enclosures: **NEMA 4X** Stainless Steel: Dust, water and corrosive liquids Connectors: PBT Common oils, chemicals and cleaning agents	Enclosures: **NEMA 4/12/13** Ice, dust, water, non-corrosive liquids Connectors: PBT Common oils	Enclosures: **NEMA 3R** Falling rain, sleet Connectors: N/A
Impact	Enclosures: 14 ga., 304 SS Connector Housing: PBT	Enclosures: 14 ga., steel Connector Housing: PBT	Enclosures: 14 ga., steel Connectors: Thermoplastic
Tamper	Enclosures: Protected, secured and locked	Enclosures: Protected, and optional locked	Enclosures: Protected, but not secured
Temperature	TIA/EIA-568-B.2 TIA/TR 42.9 pending	TIA/EIA-568-B.2	TIA/EIA-568-B.2
Vibration	TIA/TR 42.9 10-500Hz 5g Acceleration	TIA/TR 42.9 10-500Hz 2g Acceleration	TIA/TR 42.9 10-500Hz 0.7g Acceleration
Ultra-Violet	Protected	Protected	Not Protected

HI-IMPACT™

Connector Hardware for Harsh Environments.

Vibration TIA-568-B.2
Transmission integrity

O-Ring Seal
Reliable IP67 and IP66

Maximum Cable Strain Relief
Resists pull-out
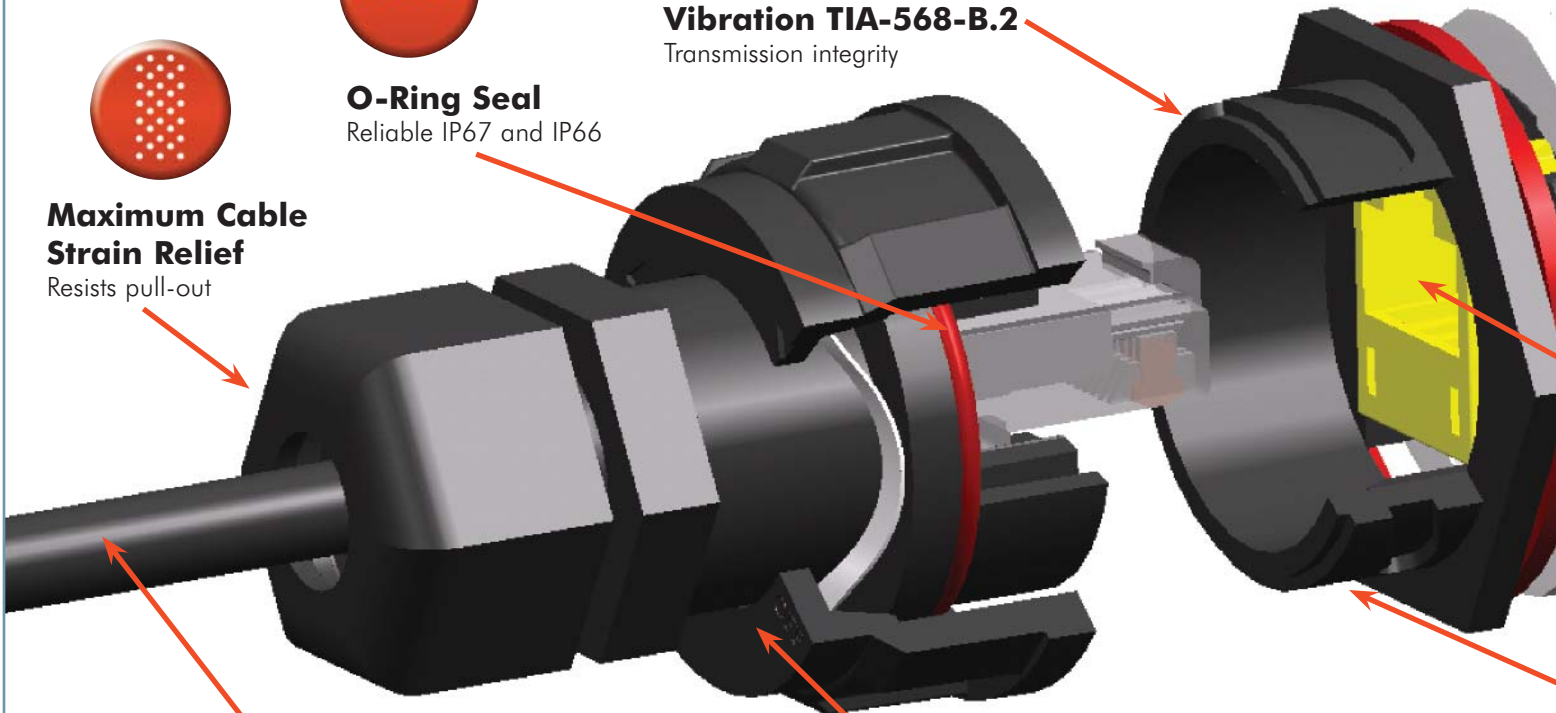
Flexible Double Jacketed Patch Cable
Resistant to UV, chemicals, cleaning agents and oils

PBT Construction
Resistant to temperature extremes and impact

Connectors

Patch Cords

Plates

Standard ¾″ Knockout
Simplifies installation
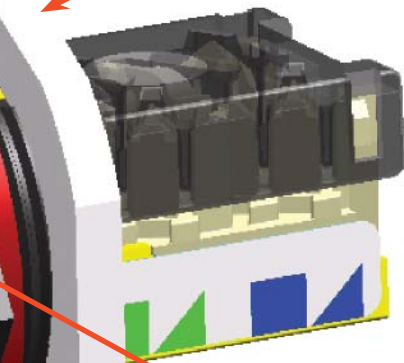
Standard Hubbell Keystone Opening
Provides migration path

User-Friendly Quick Connect
Positive indication when fully engaged
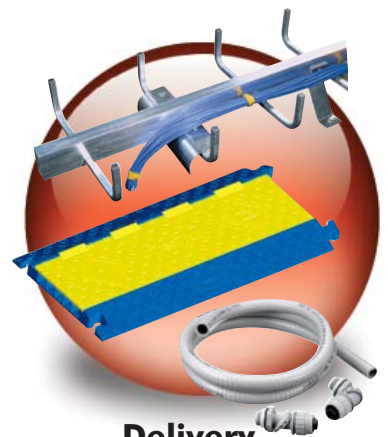
CONNECTOR SPECIFICATIONS

Environmental
• Ingress Protection: IP67 and IP66 (dust and water)
• Corrosion: Resistant to most common chemicals, cleaning agents and oils
• UV: UV resistant (HI-IMPACT Housing)
• Temperature Range: TIA/EIA-568-B.2
  TIA/TR 42.9 (product pending)

Mechanical
• Vibration
  - Frequency Range: 10-500Hz
  - Acceleration: 5g
• Mating Cycles: 750 minimum
• UL 1863 listed

Material
• Connector Housing: PBT, UL94V-0
• Nose Contacts: Beryllium copper with a minimum of 50 micro-inch gold plating over nickel under plating
• IDC 110 Contacts: Phosphor bronze with 100 micro-inch tin lead 60/40 plating over nickel under plating

Electrical
• ANSI/TIA/EIA-568-B.2-1 (Category 6)
• ANSI/TIA/EIA-568-B.2 (Category 5e)
• Supports TIA/TR42.9 Industrial Draft
• Supports 4 times IEEE 802.3af DTE power specifications
• Exceeds IEEE 802.3ab Gigabit specifications to $< 1 * 10^{-13}$

Certifications
• UL Listed
• cUL Listed
• CSA Certified
• 3rd Party Verified Category 6 and 5e component

Boxes

Cabinets

Delivery

e3 Severe Environments

HARSH-e3 applications are punishing environments where extreme temperatures, EMI, vibration and exposure to corrosive materials may be present.

Typical Severe Environment Applications

- ■ Food Processing
- ■ Manufacturing
  Automation
  Automotive
  Finishing and
  Plating
  Foundries
  Molding
  Paper Mills
  Process & Control
  Robotics Welding
  Stamping
  Tool & Die
- ■ Marinas
- ■ Pharmaceutical

- ■ Utility
  Electric Utilities
  Oil & Mining
  Refinement & Waste
  Treatment Facilities

HI-IMPACT™ Product Solutions

Connectors
- Cat 5e
- Cat 5e Coupler
- *F-Connector
- *Cat 6
- *M12

Patch Cords
- Cat 5e
- Cat 6
- Hybrid Series
- M12 to RJ45

Enclosures NEMA 4X
- REBox®
- Consolidation
  Point
- *Wireless

Plates and Boxes
- FS/FD Plates
- NEMA 4X Control
  Boxes
- Portable Outlet
  Boxes
- Weatherproof Box

Delivery
- Center Rack
- TrukTrak®
- LiquidTight®
  Systems
- Cord Connectors

* Coming soon 2004

e²2 Harsh Environments

HARSH-e2 applications are harsh environments where hardware is exposed to regular abuse.

Typical Harsh Environment Applications

- **Automated Tellers Machines**
- **Billboards and Display**
- **Food**
  Commercial Food
  Fast Food
  Restaurants
- **Laboratories**
- **Manufacturing**
  Automation
  Material Handling
  Warehouses
- **Medical**
  Mobile Med Units
- **Pharmaceutical**
- **Retail**
- **Transportation**
  Airports
  Bus Stations
  Subways
  Train Stations
- **Zoos**
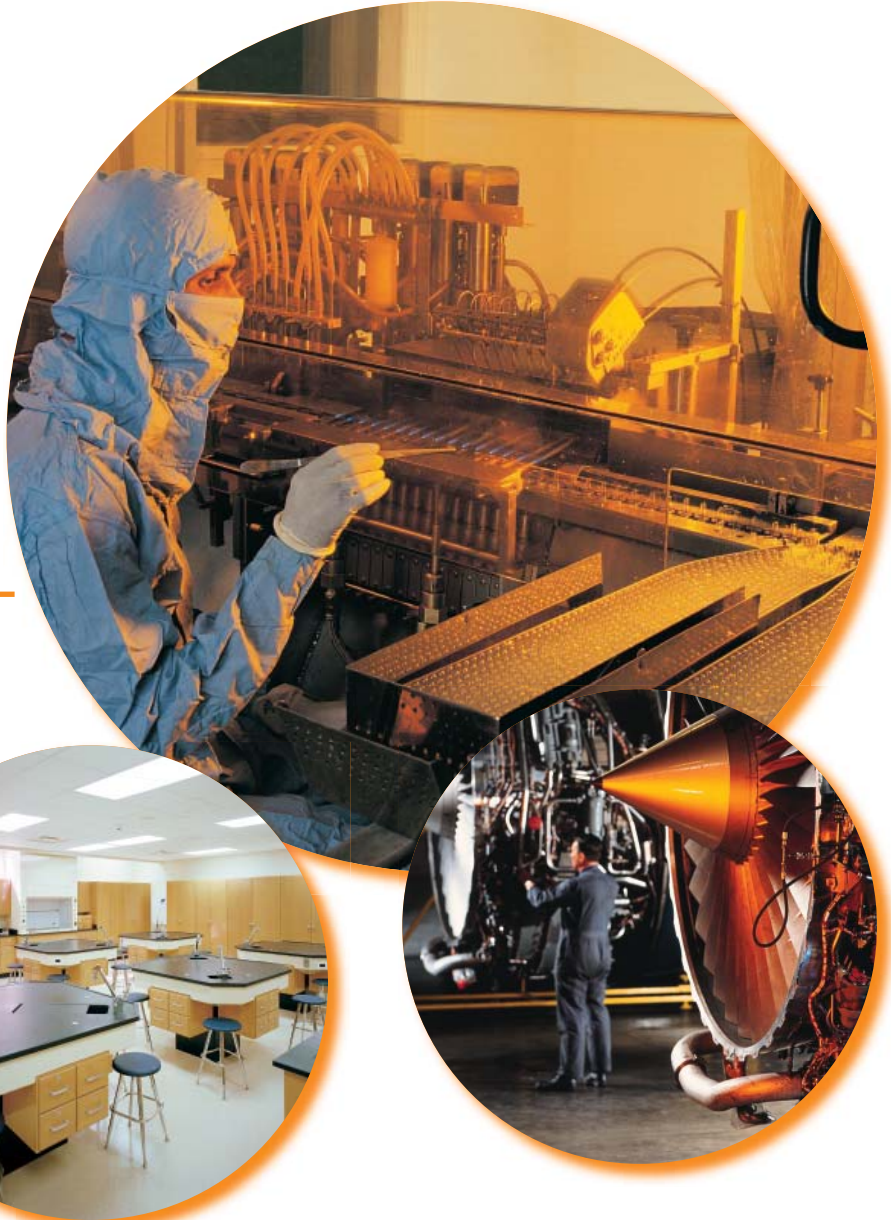
HI-IMPACT™ Product Solutions

Connectors
- Cat 5e
- Cat 5e Coupler
- *F-Connector
- *Cat 6

Patch Cords
- Cat 5e
- Cat 6

Enclosures NEMA 4/12/13
- REBox®
- Consolidation Point
- *Wireless

Plates and Boxes
- Plates
- NEMA 4/12/13 Control Boxes
- Portable Outlet Boxes
- Die-cast Box

Delivery
- Center Rack
- TredTrak®
- LiquidTight® Systems

* Coming soon 2004

e1
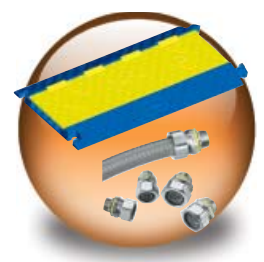
Tough Environments

HARSH-e1 applications are more demanding than typical commercial environments. Hardware is exposed to occasional rough use.

Typical Tough Environment Applications

- ■ **Hospitality and Entertainment**
  - Aquariums
  - Amusement and Family Entertainment
  - Casinos
  - Convention Centers
  - Hotels
  - Resorts
  - Stadiums
  - Theme Parks
- ■ **Educational**
  - K-12
  - University
- ■ **Grocery/Deli**

HI-IMPACT™ Product Solutions

Connectors
- Cat 5e
- Cat 6
- Cat 5e Coupler

Patch Cords
- Cat 5e
- Cat 6

Enclosures NEMA 3R
- REBox®
- *Wireless

Plates and Boxes
- Communication Frames
- Flip Covers
- Bell® Boxes
- Work Boxes
- Secure-IT™ Plate

Delivery
- Center Rack
- TredTrak®
- LiquidTight® Systems

HARSH-e A Comprehensive Rating System.

Dust

Corrosion

Tamper

Ultra-Violet

Water

Impact

Temperature

Vibration

1 TOUGH Environments

2 HARSH Environments

3 SEVERE Environments

HI-Impact™ Connectors
Call for additional product information

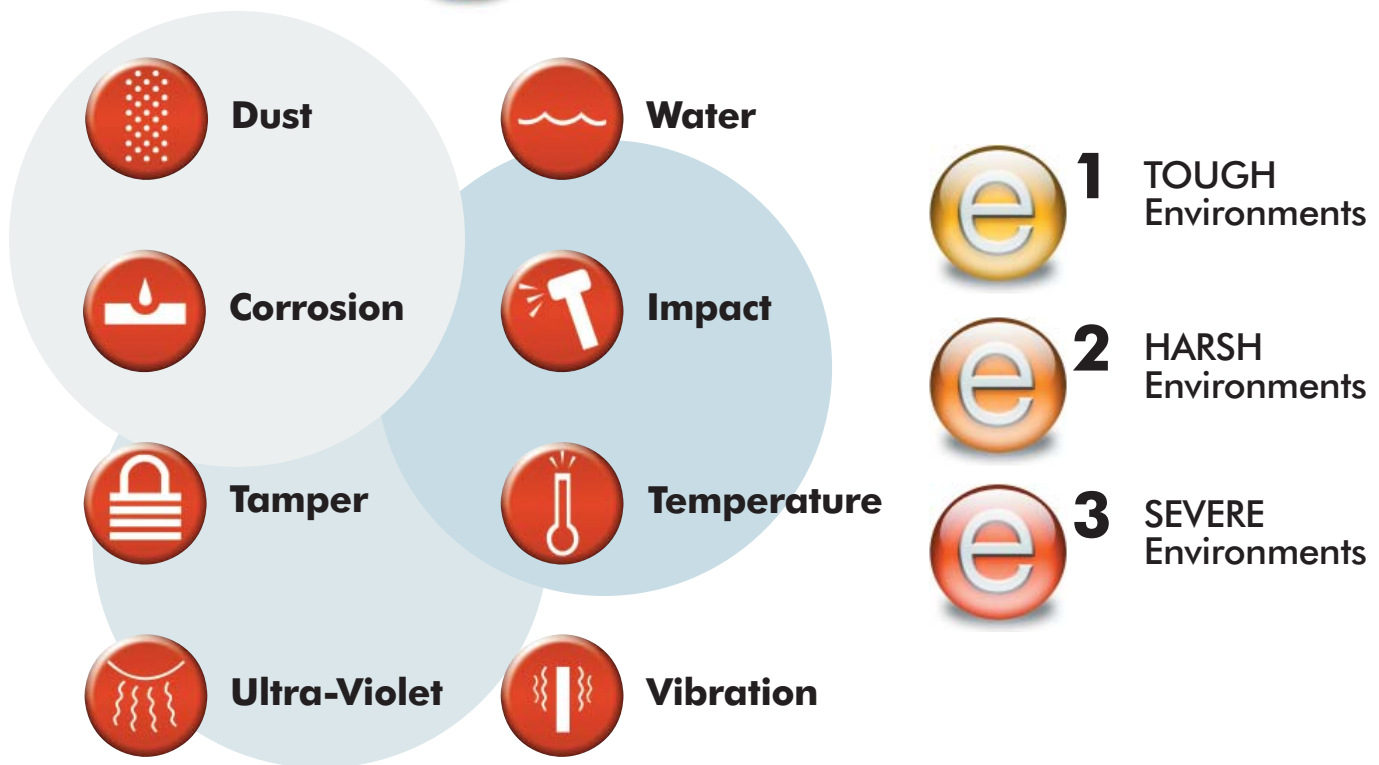| Type	Cat. No.
Cat 6	**HBLHI6***
Cat 5e	**HBLHI5E**
Cat 5e In-Line Coupler	**HBLHI5EC**
Cat 5e Shielded	**HBLHI5ESC**
M12 MicroQuick, 4-position, Male	**MBMS14314**

* Available Q2-2004.

Communication Jacks

Description	Cat. No.
Category 6	**HBL6XX**
Category 5e	**HBL5EXX**

XX = Color

BK = Black	**B** = Blue	**EI** = Electric Ivory
GY = Gray	**GN** = Green	**OW** = Office White
OR = Orange	**R** = Red	**TI** = Telco Ivory
W = White	**Y** = Yellow	

Multimedia Connector

Description	Cat. No.
F-type	**HBLHIF***

** Available Q3-2004.

Connector Cover

Description	Cat. No.
Protective Cover	**HBLHIC**

HI-Impact™ Frames
Call for additional product information

StyleLine® Frames

Ports	Cat. No.
2	**FCX244XX**
3	**FCX344XX**
4	**FCX444XX**
6	**FCX644XX**

Duplex Frames

Ports	Cat. No.
2	**DJOXX**
4	**DJ106XX**

xx = Color

BK = Black	**EI** = Electric Ivory
GY = Gray	**OW** = Office White
W = White	

HI-Impact™ Plates
Call for additional product information

Stainless Steel

Ports	Gang	Cat. No.
1	1	**HBLHISF11**
2	1	**HBLHISF12**
2	2	**HBLHISF22**
4	2	**HBLHISF24**

Thermoplastic, 4-Point FS/FD, 1-Gang

Ports	Color	Cat. No.
1	Gray	**HBLHI14GY**
2	Gray	**HBLHI24GY**
1	Yellow	**HBLHI114PY**
2	Yellow	**HBLHI124PY**

Flip-Cover, Die-Cast Aluminum, Vertical, 1-Gang

Type	Cat. No.
Device	**WP26**
FS/FD	**WPFS26**

Flip-Cover, Thermoplastic, Vertical, 1-Gang

Type	Cat. No.
Device	**HBL5222**
FS/FD	**HBL5221**

Weatherproof, NEMA 3R

Horizontal	Gang	Cat. No.
Weatherproof	1	**WP826MHP**

Vertical	Gang	Cat. No.
Weatherproof	1	**WP826MP**
Weatherproof	2	**WP8262MP**

Vertical	Gang	Cat. No.
Secure-IT™	1	**HBLTWPF1GY**

HI-Impact™ Boxes
Call for additional product information

Fiberglass Weatherproof Device Box with Lugs

Knockout	Color	Cat. No.
¾"	Yellow	**HBL60CM83**

Cast Aluminum Device Box with Lugs

Knockout	Color	Cat. No.
½"	Gray	**HBLHIFD1L***
¾"	Gray	**HBLHIFD2L***

* Available Q2-2004.

Cast Aluminum Weatherproof Device Box with Lugs

Knockout	Color	Cat. No.
½"	Gray	**HBLHIWP05GY***
¾"	Gray	**HBLHIWP75GY***

* Available Q2-2004.

NEMA 4X Box

Thermoplastic, Gray

Ports	Cat. No.
1	**HBLHI14XGY***
2	**HBLHI24XGY***
4	**HBLHI44XGY***
6	**HBLHI64XGY***

Stainless Steel

Ports	Cat. No.
1	**HBLHI1CBSS***
2	**HBLHI2CBSS***

* Available Q2-2004.

NEMA 4/12 Box

Stainless Steel, Gray

Port	Cat. No.
1	**HBLHI1CBG***
2	**HBLHI2CBG***

* Available Q2-2004.

Portable Outlet with Strain Relief Kit

Port	Cat. No.
1	**HBLHI1POB***
Multiport	**HBLHIPOB***

* Available Q3-2004.

HI-Impact™ Cords
Call for additional product information
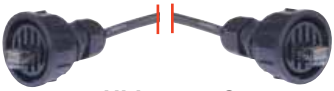
HI-Impact to HI-Impact Connector

Type	Cat. No.
Cat 6	HBLHI6XXEE*
Cat 5e	HBLHI5EXXEE
Cat 5e, Shielded	HBLHI5ESXXEE**
F-type	HBLHIFXXEE**
M12, 4-position female	HBLHIM12XXEE**

HI-Impact Connector to RJ-45

Type	Cat. No.
Cat 6	HBLHI6XXAE*
Cat 5e	HBLHI5EXXAE
Cat 5e, Shielded	HBLHI5ESXXAE**
F-type	HBLHIFXXAE**
M12, 4-position female	HBLHIM12XXAE**

HI-Impact RJ-45 to RJ-45

Type	Cat. No.
Cat 6	HBLHI6XXAA*
Cat 5e	HBLHI5EXXAA
Cat 5e, Shielded	HBLHI5ESXXAA**

XX = Length

03 = 3'	**05** = 5'	**07** = 7'
10 = 10'	**12** = 12'	**15** = 15'
20 = 20'	**25** = 25'	

* Available Q2-2004.   ** Available Q3-2004.

HI-Impact™ Plugs and Cable
Call for additional product information

Type	Cat. No.
Cat 5e Plug	HBLHI5EP
Cat 5e Patch Cable, 100'	HBLHIPC100
F-type Connector	HBLHIFP**
RG-59 Patch Cable, 100'	HBLHIFC100**

** Available Q3-2004.

HI-Impact™ Cord Connectors & Grips
Call for additional product information

Cord Connectors, 0.250" - 0.375"

Description	Cat. No.
SS, ½"	SHC1022SS
Aluminum, ½"	SHC1022
Aluminum, ¾"	SHC1032
Nylon, Gray, ¾"	SHC1022CR

Deluxe Cord Connectors, 0.250" - 0.375"

Description	Cat. No.
SS, ½"	07401006
SS, ¾"	07401013
Aluminum, ½"	CG406NM
Nylon, Gray, ½"	074011332

HI-Impact™ Enclosures
Call for additional product information

REBOX® NEMA 4/12/13, Gray

Height	Type	Cat. No.
24"	Unloaded	HBLIR2UG
36"	Unloaded	HBLIR3UG
48"	Unloaded	HBLIR4UG
36"	Loaded	HBLIR3PG
48"	Loaded	HBLIR4PG

REBOX® NEMA 4X, Stainless Steel

Height	Type	Cat. No.
24"	Unloaded	HBLIR2USS*
36"	Unloaded	HBLIR3USS*

REBOX® NEMA 3R, Gray

Height	Type	Cat. No.
24"	Unloaded	HBLIR2U2R
36"	Unloaded	HBLIR2U3R

REBOX® Accessories

Description	Cat. No.
Plywood Backboard	
20"H x 19"W	HBLREKBB20
30"H x 19"W	HBLREKBB30
40"H x 19"W	HBLREKBB40
Equipment Mounting Bracket, 5U	HBLREKZ
110/66 Block Mounting Rails (accepts five 100-pair/110-pair blocks)	HBLREK110
Patch Panel Bracket Bottom-hinged, 4U	HBLREK19
Fiber Patch Panel Bracket (accepts 1 FSP panel)	HBLREKFP
Economy Power Supply Kit, 15A	HBLREKP

DIN Rail Utility Box, Duplex

Description	Cat. No.
15A/5A Breaker	DRUBTVSS15
Duplex, Comm., 2-port	HBLHIDRUBC2**
Duplex, Comm., 4-port	HBLHIDRUBC4**

** Available Q3-2004.

Consolidation Point

Type	Size	Cat. No.
SS	NEMA 4X	HBLHICPSS*
Gray	NEMA 4/12	HBLHICP412G*

* Available Q2-2004.

HI-Impact™ Delivery
Call for additional product information

PolyTuff Conduit

Size	Feet	Cat. No.
½"	100	G1050
¾"	100	G1075

LiquidTight, Metallic Fittings

Size	Fitting Type	Cat. No.
½"	Straight Male	H0501A
¾"	Straight Male	H0751A

LiquidTight, Non-Metallic Fittings

Size	Fitting Type	Cat. No.
½"	Straight Male	P050NGYA
¾"	Straight Male	P075NGYA
½"	SwivelLok® Male	PS0509NGY
¾"	SwivelLok® Male	PS0759NGY

TredTrak, 5-Channel
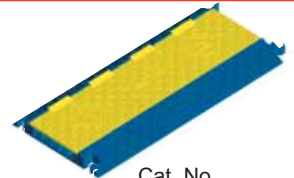
Description	Cat. No.
Track, 3' Section	HBLTRED5B
End Caps	HBLTRED5ECB
"X" Section	HBLTRED5XB
"Y" Section	HBLTRED5YB

TrukTrak, 5-Channel

Description	Cat. No.
Track, 3' Section	HBLTT5B
End Caps	HBLTT5ECB
Right Turn	HBLTT545RB
Left Turn	HBLTT545LB

H5148LC 03/04

www.hubbell-solutions.com/HI-Impact

Find out more about your Hubbell HI-IMPACT™ Solution.