A Pre-Configured Industrial Distribution Frame (IDF) reduces deployment time and cost for high-density 19" rack-mounted network switches

1 **Enclosure**

A wall- or column-mount UL Type 4/12, IP66 double-hinged enclosure ready to accept up to (5) 19" rack-mount switches. Thermally validated with best practice cable management.

3, 4, 5 **Fiber**

Fiber uplink trunk cable is routed to a fiber enclosure and terminated to a Fiber Adapter Panel (FAP). Patch cords connect switch uplink port to FAP connector.

Distribution Switch

Access Layer Switch

2 **DIN Rail Tier**

DIN rail tier(s) are used for industrial switch applications

13 **UPS Intelligent Power Solutions**

Highly reliable, efficient power distribution with secure access and manageability

14 **Intelligent PDU**

Reliable power monitoring; Optional condition monitoring sensors, access control door handle.

7 Industrial Grade Category 6A Cable

8 Category 6A Cable

Door not shown

Front View

Fiber in Conduit

Conduit

12 **Power Cord Strain Relief**

Power cords are held securely with a strain relief bar with integral clips.

Double Hinged

Wall or Column

Door | Movable Side | Fixed Side

Keyed Latch

5 Fiber Patch Cords

6 D-Ring Cable Manager

9 Small Diameter Patch Cords

10 Patch Panel

11 Category 6A Jack

Designed Depth

Extra depth allows more room for cable management, power management, and switch stack cables accommodating proper bend radius

Air Conditioner Access Cover

Hook & Loop Cable Tie

Service Loop Top View

Strain Relief Bar

12

Power

A conduit is connected to a metallic box with 2 receptacles. Each receptacle has its own 110/220V circuit; one for switches the other for the air conditioner.

Side View

Conduit with Power

Use this drawing when:
- Deploying 19" rack mounted switches
- Network has numerous links
- Tying together a large installation

PCD010-AUG23-ENG

PANDUIT™

Industrial Distribution Frame
(Cabling Subsystems 3-2)

Bill of Materials

Part Number	Description
Pre-Configured Industrial Distribution Frames	
ZDF48-RA	Pre-configured industrial distribution frame enclosure ready for two access and two distribution switches.
ZDF48-EA	Pre-configured industrial distribution frame enclosure ready for two access and two distribution switches for EMEA/APJ.
Connectivity and Patching	
CJ6X88TGBL	Category 6A, RJ45, 8-position, 8-wire, UTP Mini-Com® universal jack module, TG-style termination, black.
UTP28X8INBU	Category 6A performance, 28 AWG UTP patch cord, RapidID enabled. Blue, 8 in.
PUR6AV04BU-G	Category 6A U/UTP copper cable, 23 AWG with Vari-MaTriX tape and PVC jacket, CMR, blue
CPP48WBLY	Mini-Com® 48-port Patch Panel, 2RU, accepts up to 48 Mini-Com modules.
IURH6X04BL-UG	IndustrialNet™ Category 6A Copper Cable, U/UTP, CMX/CMR, 600V AWM.
FAP12WAQDLCZ	Fiber adapter panel with 12 LC duplex mm adapters (AQ) zirconia.
FX2ERLNLNSNM002	2 fiber OM3 LC duplex to LC duplex patch cord OFNR (riser) rated, 16mm jacketed cable Std IL 2 meters.
FOPPX12Y	50um OM3 12 Fiber Indoor Armored Cable, Plenum (OFCP), 900um buffered fibers.
FODRX12Y	50um OM3 12 Fiber Indoor Distribution Cable, Riser (OFNR), 900um buffered fibers.
FLCDMCXAQY	LC OptiCam OM3/OM4 10Gig 50/125μm multimode duplex fiber optic connector, intended for 900-micron tight-buffered fiber installations, aqua.
ZDINS25	Expansion Tier with UPS for 2 industrial switches. Includes a 4RU DIN rail mount bracket, 48-port patch panel, UPS, power supplies AC to DC, terminal blocks, and wiring for 120 V AC input.
Cable Management	
CMVDR1	Open-Access™ Vertical D-Ring Cable Manager. 1RU
SRBWCY	Strain Relief Bar with integrated adjustable clips, 1RU
Power Solutions	
U03N11V	Uniterruptible Power Supply, 3kVA, 2U, 120V, VRLA, single phase, double-conversion on-line power protection with intelligent network card and rail kit
P24G01M	G5 Monitored and Switched per Outlet Power Distribution Unit, 30 amp, 208 V, single phase, with NEMA L6-30P input plug with 10-foot power cord; 20 C13 and 4 C19 outlets
P24G06M	G5 Monitored and Switched per Outlet Power Distribution Unit, 32 amp, 230 V, single phase, with IEC 60309 2P+E 6h 32A (IP44) input plug with 10-foot power cord; 20 C13 and 4 C19 outlets

About this Configuration

The Panduit pre-configured Industrial Distribution Frame (IDF) is specifically engineered to deploy and protect rack mount Ethernet switches in industrial applications.

Industrial Distribution Frame

Using rack mount access switches, an IDF is intended for high-density industrial star networks that are connected to numerous HMIs, PLCs, Drives, or I/O blocks in harsh environments to keep traffic local. An IDF can also house distribution switches to efficiently route traffic between access switches that are often DIN-mounted switches in a control panel.

Horizontal Cable Service Loop

Since the horizontal cabling is extended when opening the IDF, a cable service loop is needed for both fiber and copper. There needs to be slack to fully open the enclosure but not too much as the extra cabling consumes excess space and can act as a spring when closing. Also, the cable length increases from the first to the last copper port. The IDF stationary section has hook & loop ties in the back to secure cabling. The copper cabling is also secured with hook & loop ties to strain relief bars on the movable side to minimize tugging on the jack when opening the enclosure. Horizontal fiber cable is channeled through a duct and loom tube then into a fiber enclosure for protection.

Thermal Management

For this configuration with (2) Cisco 3750X and (2) Cisco 2960S switches, the IDF can operate with an ambient temperature up to 25° C (77° F) without an air conditioner. An optional air conditioner, Pentair AC Unit: N28, will allow the IDF to operate up to 50° C (122° F) ambient air temperature.

Connectivity and Patching

Typically, switch uplinks are fiber as it converges switches the fastest after an interrupt to re-establish connection and can handle aggregated switch traffic. Also, an IDF may be more than 100 meters (maximum distance for solid copper) from the main distribution frame (MDF), data center, or core switch. This drawing features multimode OM3 fiber. Single mode can be used for long distances or high bandwidth needs. Different multimode can be used as well (OM1, OM2, OM3, or OM4) to match switch transceiver.

Copper downlinks are impacted by environment and traffic. This drawing shows various unshielded (UTP) copper cabling constructions ranging from standard to industrial. Cabling may need a harsh rating or to be protected in conduit depending on the environment. Also, shielded (STP) cable may need to be considered for high EMI environments.

The IDF is designed with switches and patch panels in close proximity. A short (8") small diameter patch cord is recommended to reduce space with easier handling.

For an expanded product offering visit panduit.com.

For more information contact your local distributor, Panduit Sales Representative, or the Panduit Industrial Network Infrastructure team at networkinfrastructure@panduit.com.

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