# Space-saving I-Line Enable Module

**SQUARE D**™

Plug-on metering and communications are as simple as adding a breaker.
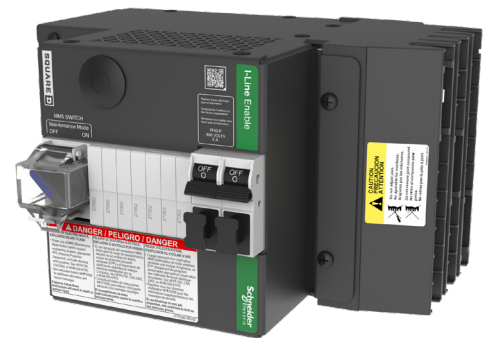
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# Space-saving module for value-added digital solution

Make your equipment future-ready with modular Square D™ I-Line™ Enable Module complete with a connected design that adds value to your I-Line panelboard, is easy to install, easy to retrofit, and is completely customizable. The space-saving unit fits into the I-Line bus in place of a breaker and allows the I-Line panelboard to be transformed into a digital communication or metered electrical distribution solution.

## Modular design

- Space-saving design significantly reduces carbon footprint and fits onto the I-Line bus in place of a circuit breaker;* eliminating the need for an I-Line panelboard box extension
- Easy to install; a screwdriver is all that's needed to mount I-Line Enable Module; mounts firmly onto the bus stack and fastens with captive retaining screws
- Minimizes impact of project changes, allowing customers to add components to an I-Line panelboard anytime
- I-Line Enable Module is available in factory-assembled panelboards as well as ready-to-install (RTI) for new and retrofit applications

## Reduced exposure

- On models with Ethernet communications, front access makes checking breaker meter values and maintenance details quicker and safer than ever
- On meter models, branch level metering is integrated into the panelboard, no need to remove trim in order to access meter points

## Integration of value-added devices

- Easily integrate digital solutions without increasing equipment footprint
- Reduce retrofit installation costs with a quick install I-Line Enable Module meter options

*Uses 6 inches of bus space, the same as an L-frame circuit breaker.

# The I-Line Enable Module is available with a variety of solutions

Smart Systems Communications facilitates Ethernet-connected electrical distribution devices to help customers reduce downtime, manage energy use, and improve operational efficiency.

Smart Systems features real-time monitoring of Square D PowerPact™ with Micrologic™ circuit breakers, as well as a variety of other power distribution and monitoring devices.

The solution collects data in real time and can send configurable email alerts to allow remote monitoring. The data can be used to pinpoint and immediately address troublesome areas and help facilitate a predictive maintenance program.

Smart Systems with the IFE (Interface Ethernet) uses fast and reliable Ethernet connectivity to access breaker status, meter data, and energy trending. The IFE works along with IFM (Interface Modbus) serial interfaces to communicate with multiple circuit breakers in the same panelboard.

The **I-Line Enable Module** can be included in your Square D I-Line factory-assembled equipment or ordered individually for retrofit or RTI installation.

**Factory-assembled equipment:** The I-Line Enable Module can be configured via the distributor's product configuration tool and includes all necessary components. (For example: Ethernet interface for circuit breaker communication, CTs or LVCTs for metering, and all associated connectors).

**Field installation (Retrofit or RTI):** Individual I-Line Enable Modules can be ordered using the catalog number configurations below. All configurations include required disconnects, power supplies, and connections. For some applications, additional components will be required (IFMs for additional circuit breaker communications and CTs or LVCTs for metering solutions). Additional components may be ordered separately. See the tables below for configuration and catalog number information.

The I-Line Enable Module assemblies listed are intended for use in HCP, HCPSU, and HCR-U I-Line panelboards.

| Catalogue number | Voltage | Feature | Additional circuit breaker notes |
|---|---|---|---|
| ICW*2222E1M1 | 120 VAC – 240 VAC | One IFE Ethernet modbus TCP interface with basic web pages | Contains one IFE and one IFM, with space for two additional IFMs (see below for IFM ordering information) |
| ICW*2422E1M1 | 277 VAC – 480 VAC | | |
| ICW*2222M01 | 120 VAC – 240 VAC | One IFM modbus serial interface; serial communication only | Contains one IFM, optional eight additional IFMs, for a total of nine monitored circuit breakers (see below for IFM ordering information) |
| ICW*2422M01 | 277 VAC – 480 VAC | | |
| ICW*263X3555 | 120 VAC – 600 VAC | EM3555 meter | Contains one power meter (LVCTs or CTs ordered separately) |
| ICW*263X3560 | 120 VAC – 600 VAC | EM3560 meter | |
| ICW*263X5563 | 120 VAC – 600 VAC | PM5563 meter | |
| ICW*263X8244 | 120 VAC – 600 VAC | PM8244 meter | |
| ICW*242XUPAS | 240 VAC – 480 VAC | EcoStruxure Panel Server | |

For additional configurations, contact your Square D distributor.

* for Left side mounting add L in fourth position (Bottom Feed); for right side mounting add R in fourth position (Top Feed)

**Power Monitoring** with the EM3555 (Modbus) or EM3560 (BACnet) meter can be easily and conveniently installed in an I-Line panelboard. The EM3500 series DIN rail meters have ANSI 12.20 0.5% accuracy, rated up to 600 VAC, and use LVCTs. The EM3555 Modbus serial with logging includes bidirectional monitoring, real energy output, and phase loss alarm output. The EM3560 BACnet MS/TP with logging includes pulse inputs for WAGES.
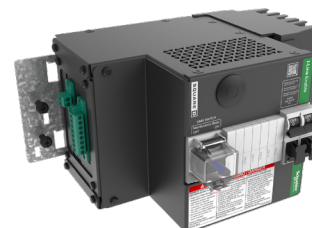
**Energy Reduction Maintenance Setting (ERMS)** meets NEC 2014 code (Section 240.87) requirements and reduces arc energy during maintenance to improve electrical personnel safety. ERMS trip setting offers electronic adjustability for coordination (factory-assembled only).

**Maintenance Mode Setting (MMS)** switch can be used to temporarily reduce the short-time delay setting of a Powerpact P/R-frame circuit breaker. MMS meets the National Electrical Code (NEC) 240.87 requirements for arc flash reduction.
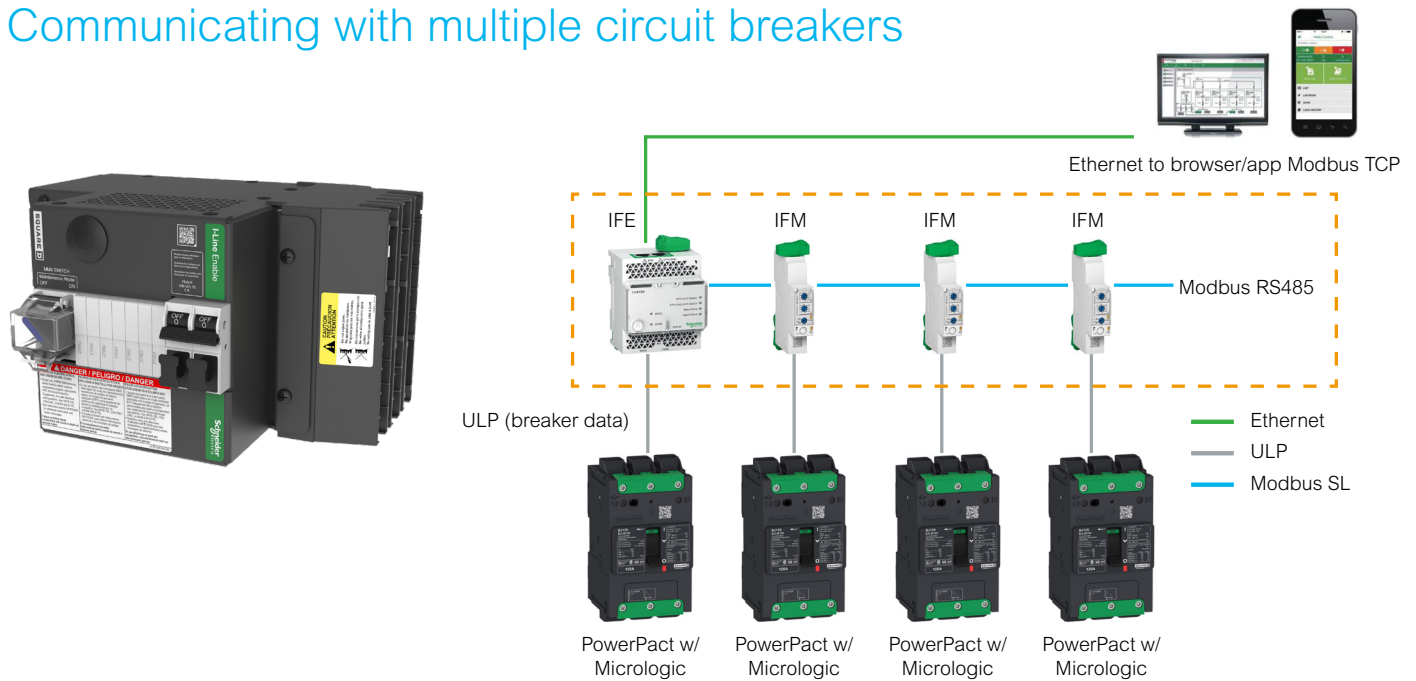
**EcoStruxure Panel Server** is a gateway, providing connection of wired smart IoT devices to edge control software or cloud application. Connect most of Modbus/RS485 and Modbus/TCP devices from the market including PowerMeters and Protection devices from Schenider Electric. User friendly web-pages offer first-lelvel of monitoring of measurements of all the conected devices including log of all alarms. Simple troubleshooting of the system through embedded web-pages with advanced diagnostic informations and logs. Easy commissioning through embedded web-pages or with EcoStruxure Power Commissionig that will offer commissioning reports and advanced features.

**PowerLogic PM8244 meters** are compact, cost-effective multifunction advanced power quality meters that will help you ensure reliability and efficiency of your power-critical facility. They reveal and provide understanding of complex power quality conditions enabling action to be taken to mitigate any issue. With patented Disturbance Direction Detection, revenue grade accuracy, multiple communication ports, onboard power quality analysis, web interface and a color graphical display.

**PM5563** is a basic, multi-function meter with a backlit LCD remote display. The meter provides Class 0.2S accuracy per IEC 62053-22 standard and 128 samples per cycle. The meter will measure Energy, Active and Reactive Power, Voltage, Current, Frequency, Power Factor and up to the 63rd Harmonic. Include 1.1 MegaBytes of memory for up to 14 selectable parameters with configurable interval and duration. Communication protocol are Modbus RTU and ASCII 2 wires with RS485 port support plus Modbus TCP/IP, Ethernet/IP and BACnet/IP based on 10/100 Mbit/s, daisy chain Ethernet with RJ45 port support. The embedded communication capabilities allow the support of the DNP 3.0 protocol, the access to an onboard web server. The meter also has four digital inputs with WAGES support and two digital outputs.

# Communicating with multiple circuit breakers

Ethernet to browser/app Modbus TCP

IFE     IFM     IFM     IFM

Modbus RS485

ULP (breaker data)

Ethernet
ULP
Modbus SL

PowerPact w/ Micrologic    PowerPact w/ Micrologic    PowerPact w/ Micrologic    PowerPact w/ Micrologic

## For addition to existing or retrofit applications

I-Line Enable Modules equipped with an IFE or IFM have space for additional IFMs. If the I-Line Enable Module selected is:

- IFE model (Ethernet comms) — includes 1 IFE and 1 IFM; up to two additional IFMs may be added (for four total
- breaker connections)
- IFM model (serial comms) — Eight additional IFMs may be added (for up to nine total breaker connections)

If additional IFMs are required in a panelboard, more than one I-Line Enable Module may be added if space is available.

Each additional communicating circuit breaker will require the following components:

- STRV00211 IFM module
- TRV00217 stacking accessory (ships in pack of 10)
- TRV00880 ULP line terminator (ships in pack of 10)
- Ethernet patch cable *L-com TRD855SCR-1**
- Cat 5 coupler for connector plate. *CommScope 2111122-1 SL Series Cat 5 Coupler**

*\* Not included with I-Line Enable Module. Available from your local distributor. For additional information please consult instruction bulletin #JYT97577.*

For more information, ask your authorized Schneider Electric Distributor, visit **se.com/us**, or call **888-SQUARED**.

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