Switchgear Product Profiles

Live-Front Pad-Mounted Switchgear
Live-Front/Dead-Front Pad-Mounted Switchgear
Dead-Front Pad-Mounted Switchgear
Primary Metering Switchgear
Pad-Mounted Capacitor Banks
Fused Sectionalizer Dead-Front Switchgear
Metal-Enclosed Switchgear
Wall-Mounted Cabinets
Unit Substations
Portable Substations
Network Protectors
Custom-Engineered Products
Components
**Metal-Enclosed Load-Interrupter Switchgear**

**Description:** Three-Phase, Group-Operated Load-Interrupter Switches with Fuses in Single and Multi-Bay Assemblies

**Method of Operation:** Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

**Circuit Configurations:** Per Specification

**Applicable Standards:** C37.20.3, C37.20.4, C37.57, C37.58 and C57.12.28

**UL® Listing:** at 5kV and 15kV, 600 to 1200 amperes

**Voltage Range:** 5kV — 35kV

**BIL:** 60kV — 200kV

**Ratings:**
- 600 and 1200 ampere continuous 3-phase load-break switches
- Fusing to 1100 amps with current-limiting fuses
- Fusing to 720 amps with power fuses

**Switch 3-Phase**
- 40ka asymmetrical 3-time fault-closing
- 61ka asymmetrical 1-time fault-closing
- 61ka momentary at 38kV
- 100 load-break operations at 600 amperes
- UL® Recognized — 600A, 1200A at 5kV and 15kV
- 1,000 mechanical operations

**Optional Features:**
- Key Interlocks
- Copper Bus
- Metering Requirements
- Vacuum Circuit Breakers
- Close-Coupled to Transformer

**Users:** Utility, Industrial, Military, Universities, Correctional, Hospitals, WWT Facilities

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**Unit Substation Primary Switchgear**

**Description:** Three-Phase, Group-Operated Load-Interrupter Switches with Fuses in Single and Multi-Bay Assemblies in Combination with Dry-Type Transformers

**Method of Operation:** Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

**Circuit Configurations:** Per Specification

**Applicable Standards:** C37.20.3, C37.20.4, C37.57, C37.58 and C57.12.28

**UL® Listing:** at 5kV and 15kV, 600 to 1200 amperes, 1,000 mechanical operations

**Voltage Range:** 5kV — 35kV

**BIL:** 60kV — 200kV

**Transformers:** Through 10MVA at 35kV to C57.12.51

**Current Ratings:**
- 600 and 1200 ampere continuous 3-phase load-break switches
- Fusing to 1100 amps with current-limiting fuses
- Fusing to 720 amps with power fuses

**Switch 3-Phase**
- 40ka asymmetrical 3-time fault-closing
- 61ka asymmetrical 1-time fault-closing
- 61ka momentary at 38kV
- 100 load-break operations at 600 amperes
- UL® Recognized — 600A, 1200A, 5kV, 15kV
- 1,000 mechanical operations

**Optional Features:**
- Key Interlocks
- Copper Bus
- Metering Requirements
- Vacuum Circuit Breakers

**Users:** Utility, Industrial, Military, Universities, Correctional, Hospitals, WWT Facilities
Air-Insulated Live-Front Pad-Mounted Switchgear — Type PSI/II

Description: Three-Phase, Group-Operated Load-Interrupter Switches and Single-Pole, Hookstick Operated Fuses with Integral Load-Interrupters for Switching

Method of Operation: Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

Circuit Configurations: 25 one-line diagrams in 2, 4, 6 and 8 compartment designs

Applicable Standards: C37.74 and C57.12.28

Voltage Range: 15kV - 25kV (for 38kV consult factory)

Current Ratings:
- 600 and 1200 ampere continuous 3-phase load-break switches
- 200 ampere continuous 1-phase load-break with fuses
- Fusing to 200 amperes with current-limiting or power fuses

Switch 3-Phase
- 40ka asymmetrical 3-time fault-closing
- 61ka asymmetrical 1-time fault-closing
- 100 load-break operations at 600 amperes

UL® Listed — available to 600A at 15kV and 25kV
- 1000 mechanical operations

Optional Features:
- Key Interlocks
- Surge Arresters
- Base Spacers
- Ground Studs
- Stainless Steel Enclosure
- Copper Bus
- Stainless Steel Switches
- Fuse Storage
- Cable Supports
- Inner Barrier Doors
- Special Colors
- Moisture Barriers
- Provisions for Fault Indicators
- Heaters
- Metering Transformers
- 1200 Amp Switches
- Designs Engineered to Customer Requirements

Users:
- Utility, Industrial, Military, Universities, Correctional, Hospitals, WWT Facilities

Air-Insulated Dead-Front Pad-Mounted Switchgear — Type PSE

Description: Three-Phase, Group-Operated Load-Interrupter Switches with Single-Pole, Hookstick Operated Fuses with Bushing Wells for 200-Ampere Load-Break Elbows

Method of Operation: Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

Circuit Configurations: 20 one-line diagrams in 2, 4 and 6 compartment designs

Applicable Standards: C37.74, C57.12.28 and ANSI 386

Voltage Range: 15kV — 25kV (for 38kV, consult factory)

Current Ratings:
- 600 ampere continuous 3-phase load-break switches
- 200 ampere continuous 1-phase load-break elbows
- Fusing to 200 amperes with current-limiting or power fuses

Switch 3-Phase
- 40ka asymmetrical 3-time fault-closing
- 100 load-break operations at 600 amperes

UL® Listed — available to 600A at 15kV and 25kV
- 1000 mechanical operations

Optional Features:
- Key Interlocks
- Base Spacers
- Stainless Steel Enclosure
- Copper Bus
- Stainless Steel Switches
- Fuse Storage
- Cable Supports
- Special Colors
- Provisions for Fault Indicators
- 1200 Amp Switches
- Metering Transformers
- Designs engineered to customer requirements

Users:
- Utility, Industrial, Military, Universities, Correctional, Hospitals, WWT Facilities
Air-Insulated Live-Front / Dead-Front Pad-Mounted Switchgear — Type PLD

Description:  Three-Phase, Group-Operated Load-Interrupter Switches and Single-Pole, Hookstick Operated Fuses with Bushing Wells for 200-Ampere Load-Break Elbows

Method of Operation:  Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

Circuit Configurations:  A variety of one-line diagrams

Applicable Standards:  C37.74, C57.12.28 and ANSI 386

Voltage Range:  15kV

Current Ratings:
- 600A and 1200A continuous 3-phase load-break switches
- 200 ampere continuous 1-phase load-break elbows
- Fusing to 200 amperes with current-limiting or power fuses

Switch 3-Phase
- 40ka asymmetrical 3-time fault closing
- 61ka asymmetrical 1-time fault closing
- 100 load-break operations at 600 amperes
- UL® Recognized — 600A and 1200A 15kV switches
- 1000 mechanical operations

Optional Features:
- Key Interlocks
- Stainless Steel Enclosure
- Stainless Steel Switches
- Special Colors
- Copper Bus
- Fuse Storage
- Base Spacers
- Cable Supports
- Provisions for Fault Indicators
- Designs engineered to customer requirements

Users:
- Utility, Industrial, Military,
- Universities, Correctional
Pad-Mounted Capacitor Banks

Description: Three-phase capacitor bank with or without controller
Single-Pole vacuum interrupters for switching
current limiting fuses for fault protection

Method of Operation: Manual or with Controller for Automatic Operation

Applicable Standards: C57.12.28, ANSI 386, Capacitors Switches to C37.66

Circuit Configurations: Per customer specification

Voltage Range: 15kV and 25kV

Current Ratings: 200 ampere continuous; 12,000 amperes rms symmetrical fault interrupting

BIL: 95kV and 125kV

Capacitors: Size to 3600 kvar as specified by customer
Voltage as specified by customer

Switching Components: Vacuum Capacitor Switch

Protection Components: Current-Limiting Fuses selected by customer
Reactors for in-rush restraint

Control Power: Voltage transformer

Optional Features: Remote Control Kit  Pad-Mounted
Stainless Steel Enclosure  Substation Mounting
Surge Arresters  Custom Relaying
Integral Load Interrupters with Emergency Switching to 800 kvar

Designs engineered to customer requirements

Users: Industrial, Government, Utility
Fused Tap Dead-Front Pad-Mounted Switchgear — Type FTDF

Description: Single-Phase and Three-Phase Fused Taps with and without Integral Single-Pole Load-Interrupters Combined with 200-Ampere Bushing Wells

Method of Operation: Manual, Single-Pole

Circuit Configurations: 8 Standard one-line diagrams and 8 designs

Applicable Standards: C37.74, C57.12.28 and ANSI 386

Voltage Range: 15kV — 25kV

Current Ratings: 200 and 600 ampere continuous with 200-ampere, Single-phase integral load-break interrupters for switching with fuses 200 ampere continuous 1-phase load-break elbows Fusing to 200 amperes with current-limiting or power fuses

Optional Features: Key Interlocks Stainless Steel Enclosure Special Colors Copper Bus Mimic Bus Dead-front access to fuses

Users: Utility, Military, Universities, Correctional
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Wall-Mounted Fuses

Description: Single-Phase and Three-Phase Fused Taps with and without Integral Single-Pole Load-Interrupters in a Wall-Mounted Enclosure

Method of Operation: Manual, Single-Pole

Circuit Configurations: Two Standard One-Line Diagrams and Custom Designs

Applicable Standards: C37.74, C57.12.28 and ANSI 386

Voltage Range: 15kV — 25kV

Current Ratings: 200 ampere continuous 1-phase load-break elbows
Fusing to 200 amperes with current-limiting or power fuses

Optional Features: Stainless Steel Enclosure Special Colors
200 Ampere Bushing Wells
Knockouts for conduit

Users: Utility, Military, Universities, Correctional

Wall-Mounted Switches

Description: Three-Phase, Group-Operated Load-Interrupter Switches in a Wall-Mounted Enclosure

Method of Operation: Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

Circuit Configurations: One Standard One-Line Diagram and Custom Designs

Applicable Standards: C37.74, C57.12.28 and ANSI 386

Voltage Range: 5kV — 25kV

Current Ratings: 600 Amperes Accommodates 600 Ampere Elbows
200 Amperes Accommodates 200 Ampere Load-break Elbows

Switch 3-Phase
40ka asymmetrical 3-time fault-closing
61ka asymmetrical 1-time fault closing
100 load-break operations at 600 amperes
UL® Recognized — 600A, 1200A, 5kV, 15kV
1000 mechanical operations

Optional Features: Key Interlocks 600 Ampere Bushings
Special Colors 200 Ampere Bushing Wells
Stainless Steel Enclosure Copper Bus
Stainless Steel Switches Motor Operators
Remote Control

Users: Utility, Military, Universities, Correctional
Substations

Description: Three-phase portable substations for temporary, permanent or emergency power distribution application requirements integrating high-voltage, transformer and low-voltage sections

Method of Operation: Manual, Automatic Source Transfer, SCADA Control, Shunt-Trip

Circuit Configurations: Engineered to customer requirements as a turn-key design

Applicable Standards: C37.74, C37.20.3, C37.20.4, C37.57 and C37.58

Voltage Range: 4.16kV through 138kV high-voltage sections

120v, 240, 480, 600v secondary sections

Current Ratings: 600 amperes and 1200 amperes

BIL: Based on system voltage requirements

Transformers: Dry-type through 10MVA at 38kV, Liquid-filled as customer specified

Switching Components: Load-break Switches, Vacuum Circuit Breakers

Protection Components: Fuses, Vacuum Circuit Breakers

Optional Features: Skid Mounted Metering Requirements

Trailer Mounted Monitoring Requirements

Caterpillar Treads Relaying Requirements

Rail Wheels Customer Specific Requirements

Users: Utility, Industrial, Military, Correctional Facilities, WWT Facilities, Universities
Switchgear Components

Description: Load-break interrupter switches; Fuse mountings; Insulators; Bushings and bushing wells; Micro-processor controls; Motor operators, Vacuum circuit breakers, etc.

Method of Operation: Manual, Automatic Source Transfer, SCADA Control

Circuit Configurations: Customer Specified

Applicable Standards: C37.57, C37.58, C37.20.3; ANSI 386

Voltage Range: 4.16kV — 38kV

Current Ratings: 200, 600 and 1200 amperes

BIL: 60kV through 200kV

Switching Components: Auto-jet® II Load-Interrupter Switches, Vacuum Load-Break Switches, Vacuum Circuit Breakers

Protection Components: Vacuum Circuit Breakers, Current-Limiting Fuses, Power Fuses

Optional Features: Per specification requirements

Users: Original Equipment Manufacturers
**Electro-Mechanical Corporate Overview**

Federal Pacific is a division of Electro-Mechanical Corporation, a privately held, American-owned company founded in 1958. It is headquartered in Bristol, Virginia (USA) and for more than 60 years has manufactured a wide variety of products used in the generation, transmission, distribution and control of electricity. These products, along with various electrical equipment repair and maintenance services, are used by a diverse mix of Energy (coal, oil and gas), Electric Utility and Industrial customers worldwide.

Electro-Mechanical Corporation has earned a “customer oriented” reputation by keeping its focus on providing the best value to its customers through quality products and services. With six manufacturing companies and two repair and service companies, Electro-Mechanical Corporation has over 650,000 square feet of modern manufacturing facilities, located in Virginia and Mexico.

The Electro-Mechanical Corporation consists of:

**Federal Pacific** - Dry-type transformers from .050 KVA through 10,000 KVA single and three phase, up to 25 kV, 110 kV BIL with UL® approval through 15 kV; Vacuum pressure impregnation and vacuum pressure encapsulation. Medium voltage switchgear including air-insulated live-front, dead-front, SCADA-controlled, automatic transfer, primary metering and wall-mounted pad-mounted and metal-enclosed switchgear. ISO9001:2015 Registered.

Line Power Manufacturing Corporation - Custom engineered electrical distribution and control apparatus including low and medium voltage metal-enclosed switchgear, power control centers, motor controls, and substations. Electrical power distribution systems and components used in mining. ISO 9001:2015 Registered.

**Line Power Manufacturing Corporation** - Custom engineered electrical distribution and control apparatus including low and medium voltage metal-enclosed switchgear, power control centers, motor controls, and substations. Electrical power distribution systems and components used in mining. ISO 9001:2015 Registered.

**MAFESA** - Electro-Mechanical Corporation’s manufacturing facility in Mexico for stock low-voltage transformers.

**Engineered Solutions** - The Engineered Solutions Group specializes in the innovative design and creation of custom medium voltage switchgear for Data Center, Solar Energy and other alternative energy, mission-critical projects worldwide.

**Machinery Components Division** - Manufactures prototype and machined component products.


**Line Power Parts & Rebuild** - Complete electrical equipment remanufacturing and onsite electrical equipment service. The parts service department provides replacement components manufactured by Electrical Group companies as well as commonly used OEM parts.
Federal Pacific Dry-Type Transformer Products

Industrial Control - 50 through 750 VA
Encapsulated 600 Volt Class
- Three-Phase 3 through 15 kVA • Buck-Boost 50 VA through 5 kVA • Single-Phase 50 VA through 25 kVA

Ventilated 600 Volt Class
- Single-Phase 15 through 167 kVA • Specialty through 1000 kVA • K-Factor Rated
- Three-Phase 15 through 500 kVA • Specialty through 3000 kVA • Motor Drive Isolation Three-Phase 7.5 through 750 kVA

High Voltage General Purpose
- Three-Phase 2.4 and 5 kV Class, 15 through 1500 kVA • Three-Phase 8.6 and 15 kV Class, 112.5 through 1500 kVA

Pad-Mounted
- Single- and Three-Phase 2.4, 5 and 15 kV Class, 112.5 through 2500 kVA

Unit Substation and High Voltage Power
- Three-Phase 2.4 through 25 kV Class, 112.5 through 10000 kVA High Voltage General Purpose
- Three-Phase 2.4 and 5 kV Class, 15 through 1500 kVA • Three-Phase 8.6 and 15 kV Class, 112.5 through 1500 kVA

Vacuum Pressure Impregnated (VPI) and VPI/Epoxy Shielded
- 600 Volt Class through 25 kV Class, 112.5 through 10000 kVA

Specialty Transformers
- 600 Volt Class through 25 kV Class, 50 VA through 1000 kVA

ABS Certified Marine Duty Transformers for Marine, Petro-Chem and Offshore Applications

Federal Pacific Switchgear Products

Live-Front Pad-Mounted Switchgear - 15 kV • 27 kV
- Manual, Automatic Transfer, Remote Supervisory Controlled Models

Live-Front/Dead-Front Pad-Mounted Switchgear - 15 kV • 27 kV
- Manual, Automatic Transfer, Remote Supervisory Controlled Models

Dead-Front Pad-Mounted Switchgear - 15 kV • 27 kV
- Manual, Automatic Transfer, Remote Supervisory Controlled Models

Pad-Mounted Capacitor Banks
Primary Metering Dead-Front Pad-Mounts - 15 kV • 27 kV • 38 kV
Fused Sectionalizer Dead-Front Pad-Mounts - 15 kV • 27 kV

Metal-Enclosed Switchgear - 5 to 38 kV
- Manual, Automatic Source Transfer, Remote-Supervisory Control, Shunt Trip

Wall-Mounted Equipment - 15 kV • 27 kV
- Wall-Mounted Switch Cabinets, Wall-Mounted Fuse Cabinets

Unit Substations - 5 to 38 kV
Vacuum Reclosers - 15 kV
Custom-Engineered Products - 5 to 121 kV
- Portable Substations - Trailer, Skid and Track Mounted

Components
- Micro-Processor and Stored-Energy Switch Operators, SCADA-Controlled Switch Operators