# Altech Corp.® Serving the Automation & Control Industry since 1984 Endorsed Company 10.0 mm (0 Ø2.2 mm (0.09 in.) Rubber Pad — 0 mm (0.39 in.) (0.39 in.) 34 mm v. (.59 in.) FOOT SWITCHES

# Altech Corp.®

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - *to ensure that we solve your problem the first time!* 



# **Quality Commitment**

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.



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Altech's new low cost foot switch is ideal for any light to medium duty application. The PCFS-3M has an electrical rating of 10A/1/2HP/125V AC, it can serve as a foot operated on/off switch for a wide range of motor driven and electrical devices.

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Please see page 25 in reference to the warning that applies to every application.

# FM SERIES





The FM series foot switches are ideal for light or medium duty applications and especially medical applications. The compact, sturdy but small, ABS housing is designed to meet all the different contact and switch insert configurations.

This series has many features, such as maintained and two stage momentary contacts, two different colors, and two protection levels. It also offers a variety of flexibility and alternatives already in the standard versions. The wide range of options include:

- Protection levels IP 68 (Medical versions IEC 601-1 certified)
- Especially designed gold plated contacts for low current
- High current switch inserts
- Different cable entries/strain reliefs.
- Other cable versions, with shield
- Custom colors for the guard, custom connectors.

The standard and optional features together provide various application possibilities:

Foot switches are typically used when hands-free operation is required or when the hands are needed to perform a separate task while the machine or device must be started or stopped, or the machine requires manipulation in other ways. Application examples would be:

- Conveyor belt in supermarket
- Sewing machine in textile factory
- Control of dentistry tools
- · Operation of logical or digital signals



Please see page 25 in reference to the warning that applies to every application.

# FM<sub>1</sub>

#### Compact, one pedal foot switch



#### FM1

· Compact, one pedal foot switch

#### **Standard Features**

Contact Types:

Housing: Gray or black ABS body and pedal cover

• Protection Level: IP 43 and IP 65

• Switch Insert: Snap action microswitch, UL/CSA approved Electrical Rating: 5A/125-250V AC (If used with appropriate cable,

see cable chart on page 29) Momentary, maintained, or

two stage momentary
Circuit: SPDT-SB, DPDT-SB, 2x SPDT-SB

• Strain Relief: Vinyl sleeve

• Cable: - Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.)

- Without Cable

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)





#### **Ordering Information**

| Туре           | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type           | Cable             | Protection<br>Level |
|----------------|-------------|---------------------|-----------------------|----------------------------------|-------------------|---------------------|
| FM1 L1         |             |                     |                       |                                  |                   |                     |
| FM1 SU1 L1     | 51.601      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM1 SU2 L1     | 51.607      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM1 SU1R L1    | 51.604      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM1 SU2R L1    | 51.610      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM1 SU1DSU1 L1 | 51.613      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Solderable) | IP 43               |
| FM1 F1         |             |                     |                       |                                  |                   |                     |
| FM1 SU1 F1     | 51.602      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/3 Cond.    | IP 43               |
| FM1 SU2 F1     | 51.608      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/6 Cond.    | IP 43               |
| FM1 SU1R F1    | 51.605      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/3 Cond.    | IP 43               |
| FM1 SU2R F1    | 51.611      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/6 Cond.    | IP 43               |
| FM1 SU1DSU1 F1 | 51.614      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/6 Cond.    | IP 43               |
| FM1 F2         |             |                     |                       |                                  |                   |                     |
| FM1 SU1 F2     | 51.603      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/3 Cond.    | IP 65               |
| FM1 SU2 F2     | 51.609      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/6 Cond.    | IP 65               |
| FM1 SU1R F2    | 51.606      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/3 Cond.    | IP 65               |
| FM1 SU2R F2    | 51.612      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/6 Cond.    | IP 65               |
| FM1 SU1DSU1 F2 | 51.615      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/6 Cond.    | IP 65               |
|                | G Gray      | housing/cable       |                       |                                  |                   |                     |

B Black housing/cable

#### **Options**

· Cable:

• Protection Level: - IP 67

Switch Insert:

 Gold plated contacts for low current applications

 Electrical Rating:

 0.1A/125V AC
 Silver-Nickel plated contacts

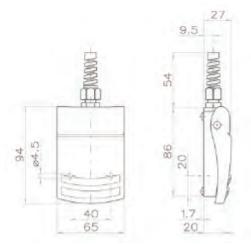
Electrical Rating: 10.1A, (1/4HP)/125-250V AC
• Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)- Shielded cable

Per customer specificationsConnectors:Per customer specifications

• IEC 60601-1 certified and UL 2601-1 recognized





# FM1 ... U

Compact, one pedal foot switch with foot guard

#### Standard Features

· Housing: Gray or black ABS body and pedal cover · Guard: Modern design with high quality steel

construction and rubber mat, color: bright red

Protection Level: IP 43 and IP 65

Switch Insert: Snap action microswitch, UL/CSA approved Electrical Rating: 5A/125-250V AC (If used with appropriate cable,

see cable chart on page 29)

Contact Types: Momentary, maintained, or

two stage momentary

SPDT-SB, DPDT-SB, 2x SPDT-SB Circuit:

Strain Relief: Vinyl sleeve

· Cable: - Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.)

- Without Cable

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)













#### Ordering Information

| Ordering information | •           |                     |                       |                                  |                   |                     |
|----------------------|-------------|---------------------|-----------------------|----------------------------------|-------------------|---------------------|
| Туре                 | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type           | Cable             | Protection<br>Level |
| FM1 L1 U - with      | Foot Guard  |                     |                       |                                  |                   |                     |
| FM1 SU1 L1 U         | 51.651      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM1 SU2 L1 U         | 51.657      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM1 SU1R L1 U        | 51.654      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM1 SU2R L1 U        | 51.660      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM1 SU1DSU1 L1 U     | 51.663      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Solderable) | IP 43               |
| FM1 F1 U - with      | Foot Guard  |                     |                       |                                  |                   |                     |
| FM1 SU1 F1 U         | 51.652      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/3 Cond.    | IP 43               |
| FM1 SU2 F1 U         | 51.658      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/6 Cond.    | IP 43               |
| FM1 SU1R F1 U        | 51.655      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/3 Cond.    | IP 43               |
| FM1 SU2R F1 U        | 51.661      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/6 Cond.    | IP 43               |
| FM1 SU1DSU1 F1 U     | 51.664      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/6 Cond.    | IP 43               |
| FM1 F2 U - with      | Foot Guard  |                     |                       |                                  |                   |                     |
| FM1 SU1 F2 U         | 51.653      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/3 Cond.    | IP 65               |
| FM1 SU2 F2 U         | 51.659      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/6 Cond.    | IP 65               |
| FM1 SU1R F2 U        | 51.656      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/3 Cond.    | IP 65               |
| FM1 SU2R F2 U        | 51.662      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/6 Cond.    | IP 65               |
| FM1 SU1DSU1 F2 U     | 51.665      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/6 Cond.    | IP 65               |

N Gray foot switch, Red guard

R Black foot switch, Red guard

#### **Options**

- IP 67 Protection Level:

Switch Insert: - Gold plated contacts for low current applicati 0.1A/125V AC **Electrical Rating:** 

**Electrical Rating:** 10.1A (1/4HP)/125-250V AC

- Standard straight-through (IP 68) • Strain Relief: - Bend protection (IP 68)

- Silver-Nickel plated contacts

- Trumpet Pull/Bend protection (IP 68)

· Cable: - Shielded cable

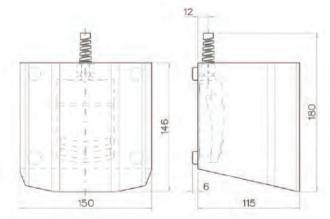
- Per customer specifications · Connectors: - Per customer specifications

• IEC 60601-1 certified and UL 2601-1 recognized

Custom colors upon request

#### **Dimensions**

Note: For foot pedal dimensions, see page 5.



# FM<sub>2</sub>

#### Compact, two pedal foot switch



#### **Standard Features**

Gray or black ABS body and pedal cover · Housing:

Protection Level: IP 43 and IP 65

· Switch Insert: Snap action microswitch, UL/CSA approved 5A/125-250V AC (If used with appropriate cable, Electrical Rating:

see cable chart on page 29) Contact Types: Momentary, maintained, or

two stage momentary SPDT-SB, DPDT-SB, 2x SPDT-SB Circuit:

Vinyl sleeve Strain Relief:

- Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.) Cable:

- Without Cable

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)











#### **Ordering Information**

| Туре                | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type           | Cable             | Protection<br>Level |
|---------------------|-------------|---------------------|-----------------------|----------------------------------|-------------------|---------------------|
| FM2 L1              |             |                     |                       |                                  |                   |                     |
| FM2 SU1(2x) L1      | 51.701      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM2 SU2(2x) L1      | 51.711      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM2 SU1R(2x) L1     | 51.706      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM2 SU2R(2x) L1     | 51.716      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM2 SU1DSU1(2x) L1  | 51.721      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Solderable) | IP 43               |
| FM2 K1              |             |                     |                       |                                  |                   |                     |
| FM2 SU1(2x) K1      | 51.702      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 43               |
| FM2 SU2(2x) K1      | 51.712      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 43               |
| FM2 SU1R(2x) K1     | 51.707      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 43               |
| FM2 SU2R(2x) K1     | 51.717      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 43               |
| FM2 SU1DSU1(2x) K1  | 51.722      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Terminals)  | IP 43               |
| FM2 F1              |             |                     |                       |                                  |                   |                     |
| FM2 SU1(2x) F1      | 51.704      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/ 6 Cond.   | IP 43               |
| FM2 SU2(2x) F1      | 51.714      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/12 Cond.   | IP 43               |
| FM2 SU1R(2x) F1     | 51.709      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/ 6 Cond.   | IP 43               |
| FM2 SU2R(2x) F1     | 51.718      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/12 Cond.   | IP 43               |
| FM2 SU1DSU1(2x ) F1 | 51.724      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/12 Cond.   | IP 43               |
| FM2 K2              |             |                     |                       |                                  |                   |                     |
| FM2 SU1(2x) K2      | 51.703      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 65               |
| FM2 SU2(2x) K2      | 51.713      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 65               |
| FM2 SU1R(2x) K2     | 51.708      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 65               |
| FM2 SU2R(2x) K2     | 51.718      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 65               |
| FM2 SU1DSU1(2x) K2  | 51.723      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Terminals)  | IP 65               |
| FM2 F2              |             |                     |                       |                                  |                   |                     |
| FM2 SU1(2x) F2      | 51.705      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/ 6 Cond.   | IP 65               |
| FM2 SU2(2x) F2      | 51.715      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/12 Cond.   | IP 65               |
| FM2 SU1R(2x) F2     | 51.710      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/ 6 Cond.   | IP 65               |
| FM2 SU2R(2x) F2     | 51.720      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/12 Cond.   | IP 65               |
| FM2 SU1DSU1 (2x) F2 | 51.725      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 20 AWG/12 Cond.   | IP 65               |

G Gray housing/cable

B Black housing/cable

#### **Options**

Protection Level: - IP 67

Switch Insert: Electrical Rating:

• Strain Relief:

- Gold plated contacts for low current applications 0.1A/125V AC

- Silver-Nickel plated contacts 10.1A (1/4HP)/125-250V AC **Electrical Rating:** - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Ben'd protection (IP 68) - Shielded cable · Cable:

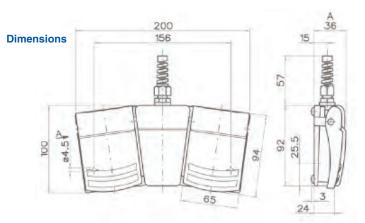
- Per customer specifications

Connectors: - Per customer specifications

• IEC 60601-1 certified and UL 2601-1 recognized

· Aluminum base plate with rubber mat

· Different switch inserts for each pedal





# FM<sub>3</sub>

#### Compact, three pedal foot switch

#### **Standard Features**

· Housing: Gray or black ABS body and pedal cover Base Plate: Die Cast Aluminum, PVC Conduit

 Protection Level: IP 43 and IP 65

Switch Insert: Snap action microswitch, UL/CSA approved Electrical Rating: 5A/ 125-250V AC (If used with appropriate cable,

see cable chart on page 29) Contact Types: Momentary, maintained, or

two stage momentary SPDT-SB, DPDT-SB, 2x SPDT-SB Circuit:

 Strain Relief: Vinyl sleeve

· Cable: - Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.)

- Without Cable

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)









#### **Ordering Information**

| Туре                | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type           | Cable             | Protection<br>Level |
|---------------------|-------------|---------------------|-----------------------|----------------------------------|-------------------|---------------------|
| FM3 L1              |             |                     |                       |                                  |                   |                     |
| FM3 SU1 (3x) L1     | 51.801      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM3 SU2 (3x) L1     | 51.811      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Solderable) | IP 43               |
| FM3 SU1R (3x) L1    | 51.806      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM3 SU2R (3x) L1    | 51.816      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Solderable) | IP 43               |
| FM3 SU1DSU1 (3x) L1 | 51.821      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Solderable) | IP 43               |
| FM3 K1              |             |                     |                       |                                  |                   |                     |
| FM3 SU1 (3x) K1     | 51.802      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 43               |
| FM3 SU2 (3x) K1     | 51.812      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 43               |
| FM3 SU1R (3x) K1    | 51.807      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 43               |
| FM3 SU2R (3x) K1    | 51.817      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 43               |
| FM3 SU1DSU1 (3x) K1 | 51.822      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Terminals)  | IP 43               |
| FM3 F1              |             |                     |                       |                                  |                   |                     |
| FM3 SU1 (3x) F1     | 51.804      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/ 9 Cond.   | IP 43               |
| FM3 SU2 (3x) F1     | 51.814      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 22 AWG/18 Cond.   | IP 43               |
| FM3 SU1R (3x) F1    | 51.809      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/ 9 Cond.   | IP 43               |
| FM3 SU2R (3x) F1    | 51.819      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 22 AWG/18 Cond.   | IP 43               |
| FM3 SU1DSU1 (3x) F1 | 51.824      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 22 AWG/18 Cond.   | IP 43               |
| FM3 K2              |             |                     |                       |                                  |                   |                     |
| FM3 SU1 (3x) K2     | 51.803      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 65               |
| FM3 SU2 (3x) K2     | 51.813      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | None (Terminals)  | IP 65               |
| FM3 SU1R (3x) K2    | 51.808      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 65               |
| FM3 SU2R (3x) K2    | 51.818      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | None (Terminals)  | IP 65               |
| FM3 SU1DSU1 (3x) K2 | 51.823      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | None (Terminals)  | IP 65               |
| FM3 F2              |             |                     |                       |                                  |                   |                     |
| FM3 SU1 (3x) F2     | 51.805      | SPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 20 AWG/ 9 Cond.   | IP 65               |
| FM3 SU2 (3x) F2     | 51.815      | DPDT-SB             | 5A/250V AC            | Snap Action, Momentary           | 22 AWG/18 Cond.   | IP 65               |
| FM3 SU1R (3x) F2    | 51.810      | SPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 20 AWG/ 9 Cond.   | IP 65               |
| FM3 SU2R (3x) F2    | 51.820      | DPDT-SB             | 5A/250V AC            | Snap Action, Maintained          | 22 AWG/18 Cond.   | IP 65               |
| FM3 SU1DSU1 (3x) F2 | 51.825      | 2x SPDT-SB          | 5A/250V AC            | Snap Action, Two Stage Momentary | 22 AWG/18 Cond.   | IP 65               |

G Gray housing/cable B Black housing/cable

#### **Options**

· Cable:

Protection Level: - IP 67

Switch Insert: - Gold plated contacts for low current applications

**Electrical Rating:** 0.1A/125V AC - Silver-Nickel plated contacts

Electrical Rating: 10.1A (1/4HP)/125-250V AC • Strain Relief: - Standard straight-through (IP 68) - Bend protection (IP 68)

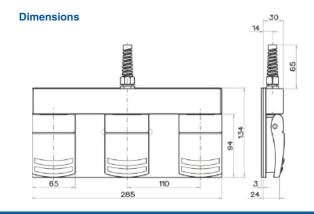
- Trumpet Pull/Bend protection (IP 68) - Shielded cable

- Per customer specifications

· Connectors: - Per customer specifications • IEC 60601-1 certified and UL 2601-1 recognized

· Different switch inserts for each pedal

· Also available with four or more pedals



# **FM Heavy Base**





#### **Standard Features**

Housing: Gray or black ABS body and pedal cover
 Base Plate: Die Cast Aluminum with rubber mat

• Protection Level: IP 43 and IP 65

• Switch Insert: Snap action microswitch, UL/CSA approved Electrical Rating: 5A/125-250V AC (If used with appropriate cable,

see cable chart on page 29) Momentary, maintained, or

two stage momentary
Circuit: SPDT-SB, DPDT-SB, 2x SPDT-SB

• Strain Relief: Vinyl sleeve

Cable:
 - Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.)

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)



#### **Ordering Information**

Contact Types:

| Туре  | Catalog No. | Circuit<br>Function           | Electrical<br>Ratings                  | Switch/Contact<br>Type  | Cable   | Protection<br>Level     |
|---|-------------|-------------------------------|--|---|---|-------------------------|
| FM1 F2 (1 Pedal)  |             |                               |  |   |   |                         |
| FM1 SU1 F2  | 51.603      | SPDT-SB                       | 5A/250V AC                             | Snap Action, Momentary  | 20 AWG/3 Cond.  | IP 65                   |
| FM1 SU2 F2  | 51.609      | DPDT-SB                       | 5A/250V AC                             | Snap Action, Momentary  | 20 AWG/6 Cond.  | IP 65                   |
| FM1 SU1R F2   | 51.606      | SPDT-SB                       | 5A/250V AC                             | Snap Action, Maintained   | 20 AWG/3 Cond.  | IP 65                   |
| FM1 SU2R F2   | 51.612      | DPDT-SB                       | 5A/250V AC                             | Snap Action, Maintained   | 20 AWG/6 Cond.  | IP 65                   |
| FM1 SU1DSU1 F2  | 51.615      | 2x SPDT-SB                    | 5A/250V AC                             | Snap Action, Two Stage Momentary  | 20 AWG/6 Cond.  | IP 65                   |
| FM2 F2 (2 Pedal)<br>FM2 SU1(2x) F2<br>FM2 SU2(2x) F2<br>FM2 SU1R(2x) F2 | 51.705      | SPDT-SB<br>DPDT-SB<br>SPDT-SB | 5A/250V AC<br>5A/250V AC<br>5A/250V AC | Snap Action, Momentary<br>Snap Action, Momentary<br>Snap Action, Maintained | 20 AWG/ 6 Cond.<br>20 AWG/12 Cond.<br>20 AWG/ 6 Cond. | IP 65<br>IP 65<br>IP 65 |
| FM2 SU2R(2x) F2   | 51.720      | DPDT-SB                       | 5A/250V AC                             | Snap Action, Maintained   | 20 AWG/12 Cond.                                       | IP 65                   |
| FM2 SU1DSU1 (2x) F2   | 51.725      | 2x SPDT-SB                    | 5A/250V AC                             | Snap Action, Two Stage Momentary  | 20 AWG/12 Cond.                                       | IP 65                   |
| FM3 F2 (3 Pedal)  | )           |                               |  |   |   |                         |
| FM3 SU1 (3x) F2   | 51.805      | SPDT-SB                       | 5A/250V AC                             | Snap Action, Momentary  | 20 AWG/ 9 Cond.                                       | IP 65                   |
| FM3 SU2 (3x) F2   | 51.815      | DPDT-SB                       | 5A/250V AC                             | Snap Action, Momentary  | 22 AWG/18 Cond.                                       | IP 65                   |
| FM3 SU1R (3x) F2  | 51.810      | SPDT-SB                       | 5A/250V AC                             | Snap Action, Maintained   | 20 AWG/ 9 Cond.                                       | IP 65                   |
| FM3 SU2R (3x) F2  | 51.820      | DPDT-SB                       | 5A/250V AC                             | Snap Action, Maintained   | 22 AWG/18 Cond.                                       | IP 65                   |
| FM3 SU1DSU1 (3x) F2   | 51.825      | 2x SPDT-SB                    | 5A/250V AC                             | Snap Action, Two Stage Momentary  | 22 AWG/18 Cond.                                       | . IP 65                 |

HB Heavy Gray Base / Black Pedal

HG Heavy Gray Base / Gray Pedal

#### **Options**

Protection Level: - IP 67

• Switch Insert: - Gold plated contacts for low current applications

Electrical Rating: 0.1A/125V AC

- Silver-Nickel plated contacts
Electrical Rating: 10.1A (1/4HP)/125-250V AC
- Strain Relief: - Standard straight-through (IP 68)
- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

Cable: - Shielded cable

Per customer specificationsConnectors:Per customer specifications

• IEC 60601-1 certified and UL 2601-1 recognized

• Different switch inserts for each pedal







Altech's new low cost foot switch is ideal for any light to medium duty application. The PCFS-3M has an electrical rating of 10A (1/2HP)/125V AC, it can serve as a foot operated on/off switch for a wide range of motor driven and electrical devices.

#### **Characteristics:**

The virtually indestructible steel housing meets even more challenging demands of every day applications. The steel guard comes standard in red or orange and provides an affordable "safeguarding" of the foot switch. The guard is interchangeable with the FM1 series foot switch which makes this configuration a perfect fit for more cost sensitive applications.

#### **Application Examples:**

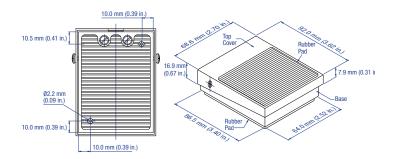
- Operation of logic signals
- Coil winding machines
- Photo lab equipment
- Sewing machines
- Packaging equipment
- Conveyor belts
- Imprinting equipment
- CNC machines

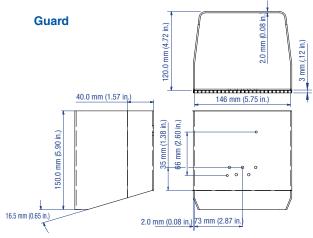


Please see page 25 in reference to the warning that applies to every application.

#### **Dimensions**

#### **Pedal**





# PCFS-3M





#### **Standard Features**

Housing: Black steel body and pedal cover

Guard: Modern design with high quality steel construction

and rubber mat, color: bright red or orange

• Protection Level: IP 20

• Switch Insert: Snap action microswitch, UL/CSA approved

Electrical Rating: 10A (1/2HP)/125V AC (If used with appropriate

cable, see cable chart on page 29)
Momentary

Contact Types: Momentary SPDT-SB or 1n.o.

• Strain Relief: Built-in

• Cable: - Without Cable

- Multi conductor, SJOOW

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)



#### **Ordering Information**

| Catalog No.           | Circuit<br>Function | Electrical<br>Rating | Guard<br>Color | Cable Length<br>(Size) | Screw<br>Terminal | Quick<br>Connect | Protection<br>Level |
|-----------------------|---------------------|----------------------|----------------|------------------------|-------------------|------------------|---------------------|
| PCFS-3M (No Cable)    |                     |                      |                |                        |                   |                  |                     |
| 51.001B               | SPDT-SB             | 10A(1/2HP)/125V AC   | None           | None (Terminals)       | Χ                 |                  | IP 20               |
| 51.002B               | SPDT-SB             | 10A(1/2HP)/125V AC   | None           | None (Terminals)       |                   | X                | IP 20               |
| PCFS-3MU (with guard) |                     |                      |                |                        |                   |                  |                     |
| 51.051R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | None (Terminals)       | X                 |                  | IP 20               |
| 51.052R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | None (Terminals)       |                   | X                | IP 20               |
| 51.051OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | None (Terminals)       | X                 |                  | IP 20               |
| 51.052OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | None (Terminals)       |                   | X                | IP 20               |
| PCFS-3M with cable (3 | Conductor)          |                      |                |                        |                   |                  |                     |
| 51.012B               | 1n.o.               | 10A(1/2HP)/125V AC   | None           | 2m/6.6ft (18AWG)       | X                 |                  | IP 20               |
| 51.013B               | 1n.o.               | 10A(1/2HP)/125V AC   | None           | 2m/6.6ft (18AWG)       |                   | Χ                | IP 20               |
| 51.015B               | 1n.o.               | 10A(1/2HP)/125V AC   | None           | 5m/16.4ft (18AWG)      | X                 |                  | IP 20               |
| 51.016B               | 1n.o.               | 10A(1/2HP)/125V AC   | None           | 5m/16.4ft (18AWG)      |                   | X                | IP 20               |
| PCFS-3MU (with guard) |                     |                      |                |                        |                   |                  |                     |
| 51.062R               | 1n.o.               | 10A(1/2HP)/125V AC   | Red            | 2m/6.6ft (18AWG)       | X                 |                  | IP 20               |
| 51.063R               | 1n.o.               | 10A(1/2HP)/125V AC   | Red            | 2m/6.6ft (18AWG)       |                   | X                | IP 20               |
| 51.065R               | 1n.o.               | 10A(1/2HP)/125V AC   | Red            | 5m/16.4ft (18AWG)      | X                 |                  | IP 20               |
| 51.066R               | 1n.o.               | 10A(1/2HP)/125V AC   | Red            | 5m/16.4ft (18AWG)      |                   | X                | IP 20               |
| 51.062OR              | 1n.o.               | 10A(1/2HP)/125V AC   | Orange         | 2m/6.6ft (18AWG)       | X                 |                  | IP 20               |
| 51.063OR              | 1n.o.               | 10A(1/2HP)/125V AC   | Orange         | 2m/6.6ft (18AWG)       |                   | X                | IP 20               |
| 51.065OR              | 1n.o.               | 10A(1/2HP)/125V AC   | Orange         | 5m/16.4ft (18AWG)      | X                 |                  | IP 20               |
| 51.066OR              | 1n.o.               | 10A(1/2HP)/125V AC   | Orange         | 5m/16.4ft (18AWG)      |                   | X                | IP 20               |
| PCFS-3M with cable (4 | Conductor)          | )                    |                |                        |                   |                  |                     |
| 51.022B               | SPDT-SB 2           | 10A(1/2HP)/125V AC   | None           | 2m/6.6ft (18AWG)       | Χ                 |                  | IP 20               |
| 51.023B               | SPDT-SB             | 10A(1/2HP)/125V AC   | None           | 2m/6.6ft (18AWG)       |                   | Х                | IP 20               |
| 51.025B               | SPDT-SB             | 10A(1/2HP)/125V AC   | None           | 5m/16.4ft (18AWG)      | Χ                 |                  | IP 20               |
| 51.026B               | SPDT-SB             | 10A(1/2HP)/125V AC   | None           | 5m/16.4ft (18AWG)      |                   | Х                | IP 20               |
| PCFS-3MU (with guard) |                     |                      |                |                        |                   |                  |                     |
| 51.072R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | 2m/6.6ft (18AWG)       | Χ                 |                  | IP 20               |
| 51.073R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | 2m/6.6ft (18AWG)       |                   | Х                | IP 20               |
| 51.075R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | 5m/16.4ft (18AWG)      | X                 |                  | IP 20               |
| 51.076R               | SPDT-SB             | 10A(1/2HP)/125V AC   | Red            | 5m/16.4ft (18AWG)      |                   | Х                | IP 20               |
| 51.072OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | 2m/6.6ft (18AWG)       | Χ                 |                  | IP 20               |
| 51.073OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | 2m/6.6ft (18AWG)       |                   | Χ                | IP 20               |
| 51.075OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | 5m/16.4ft (18AWG)      | Χ                 |                  | IP 20               |
| 51.076OR              | SPDT-SB             | 10A(1/2HP)/125V AC   | Orange         | 5m/16.4ft (18AWG)      |                   | X                | IP 20               |

#### **Options**

Color of guard

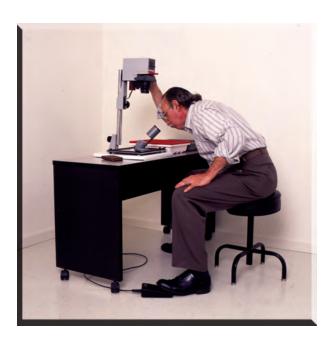
• Cable: - Shielded cable

- Per customer specifications

• Connectors: - Per customer specifications







The FK series foot switches are suitable for light and medium duty applications. The medium size, sturdy ABS housing fits up to 3 snap action microswitches rated up to 10A (1/2HP)/250V AC. The momentary and two stage momentary contact types cover almost every demand.

With the optional strain reliefs, cables and connectors and the larger pedal, the FK series is a low cost alternative, where no high protection levels are required. This series covers the range between the FM series and the FS series. This foot switch will fit numerous applications, including the following:

- Medical equipment (tablet sorter, labeling machines etc.)
- Dictation machines
- Photo laboratory equipment
- Medium industrial machines (storage and retrieval systems, sewing and textile machines, etc.)

# **Warning**

Please see page 25 in reference to the warning that applies to every application.

# FK<sub>1</sub>

#### Medium size, one pedal foot switch



#### **Standard Features**

Housing: Gray or black ABS body and pedal cover

• Protection Level: IP 43

 Switch Insert: Snap action microswitch, UL/CSA approved Electrical Rating: 10A (1/2HP)/125-250V AC (If used with

appropriate cable, see cable chart on page 29)

Contact Types: Momentary, two stage momentary SPDT-SB, DPDT-SB, 2x SPDT-SB

Strain Relief: Vinyl sleeve

• Cable: - Multi conductor, PVC, SJT, 2 m (6 ft. - 6 in.)

- Without Cable

• Temperature Range: -20°C up to +80°C (-4°F up to +176°F)











#### **Ordering Information**

| Type<br>Protection | Catalog No. | Circuit    | Electrical          | Switch/Contact                   | Cable             |       |
|--------------------|-------------|------------|---------------------|----------------------------------|-------------------|-------|
| FK1 L              |             | Function   | Ratings             | Туре                             |                   | Level |
| FK1 SU1 L          | 51.901      | SPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | None (Solderable) | IP 43 |
| FK1 SU2 L          | 51.904      | DPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | None (Solderable) | IP 43 |
| FK1 SU1DSU1 L      | 51.907      | 2x SPDT-SB | 10A (1/2HP)/250V AC | Snap Action, Two Stage Momentary | None (Solderable) | IP 43 |
| FK1 K              |             |            |                     |                                  |                   |       |
| FK1 SU1 K          | 51.902      | SPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | None (Terminals)  | IP 43 |
| FK1 SU2 K          | 51.905      | DPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | None (Terminals)  | IP 43 |
| FK1 SU1DSU1 K      | 51.908      | 2x SPDT-SB | 10A (1/2HP)/250V AC | Snap Action, Two Stage Momentary | None (Terminals)  | IP 43 |
| FK1 F              |             |            |                     |                                  |                   |       |
| FK1 SU1 F          | 51.903      | SPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | 18 AWG/3 Cond.    | IP 43 |
| FK1 SU1R F         | 51.906      | DPDT-SB    | 10A (1/2HP)/250V AC | Snap Action, Momentary           | 18 AWG/6 Cond.    | IP 43 |
| FK1 SU1DSU1 F      | 51.909      | 2x SPDT-SB | 10A (1/2HP)/250V AC | Snap Action, Two Stage Momentary | 18 AWG/6 Cond.    | IP 43 |

G Gray housing/cable

B Black housing/cable

#### **Options**

• 3 Switch Inserts available upon request

• Strain Relief: - Second vinyl sleeve

- Standard straight-through (IP 68)

- Bend protection (IP 68)

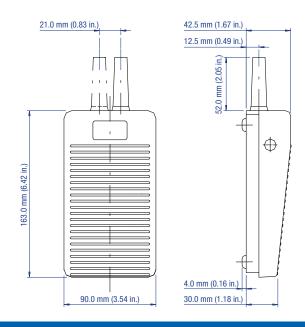
- Trumpet Pull/Bend Protection (IP 68)

Cable: - Shielded cable

- Per customer specifications

Connectors: - Per customer specifications

Foot Guard also available









The FL series foot switches are appropriate for heavy duty applications in hazardous and demanding environments. The foot switch with the Polyamide 6.6 housing shows the same sturdy body as the FS series, but with the advantage of resistance against water, oil, and certain acids and chemicals, which enables a longer life expectancy. The foot guard consists of die cast aluminum, to sustain all safety requirements.

The FL series offers considerable flexibility with the combination of slow make-break and snap action switch inserts, with the contact types momentary, maintained and two stage

momentary and the choice of different potentiometer values. Human safety and machine protection can be provided by adding of Anti-Trip lever and foot guard. These items prevent the foot switch from accidentally actuating the machine function. Different strain reliefs, cables, connectors and custom colors are also available.

The main applications of this non-corrosive foot switch are "wet" industrial environments, drilling processes, and in the food industry, where the environment has to be cleaned regularly with cleaning detergent.

# **!** Warning

Please see page 25 in reference to the warning that applies to every application.

## FL<sub>1</sub>

#### Light medium size, one pedal foot switch

# Altech Corp.

#### **Standard Features**

Housing: Polyamide 6.6 body, cover and pedal Colors: Gray body, red cover and black pedal Anti-Trip: Die cast aluminum pedal and lever in gray

(available on some models)

IP 65 · Protection Level:

· Switch Insert: Snap action or slow make-break

Silver alloy contact material

10A/500V AC (If used with appropriate cable, Electrical Rating:

see cable chart on page 29) Contact Types: Momentary, maintained, or

two stage momentary

SPDT-SB; DPDT-DB; 10k Ohm, 2.0W Circuit:

Potentiometer with SPDT-SB microswitch Cable Entry: Threaded hole (M20)

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)











56.0 mm (2.20 in.)

#### **Ordering Information**

| Туре         | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|--------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FL1          |             |                     |                       |                                      |               |                          |                     |
| FL1 U1       | 51.401      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | X                        | IP 65               |
| FL1 U1R      | 51.402      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | X                        | IP 65               |
| FL1 U1S      | 51.403      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           | Χ             | X                        | IP 65               |
| FL1 U1RS     | 51.404      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | Χ             | X                        | IP 65               |
| FL1 SU1      | 51.405      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | X                        | IP 65               |
| FL1 SU1R     | 51.406      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | X                        | IP 65               |
| FL1 SU1S     | 51.407      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               | Χ             | X                        | IP 65               |
| FL1 SU1RS    | 51.408      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | Χ             | X                        | IP 65               |
| FL1 U2       | 51.409      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | X                        | IP 65               |
| FL1 U1DU1    | 51.410      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | X                        | IP 65               |
| FL1 U2S      | 51.411      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | Χ             | X                        | IP 65               |
| FL1 U1DU1S   | 51.412      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | Χ             | X                        | IP 65               |
| FL1 SU2      | 51.413      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | X                        | IP 65               |
| FL1 SU1DSU1  | 51.414      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | X                        | IP 65               |
| FL1 SU2S     | 51.415      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | Χ             | X                        | IP 65               |
| FL1 SU1DSU1S | 51.416      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | Χ             | X                        | IP 65               |
| FL1 SU1P10 L | 51.417      | 10k Ohm, 2.0W       | Potentiometer with    | SPDT-SB Microswitch (5A/250V AC)     |               | Solder Tabs              | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

· Cable:

Switch Insert: - Gold plated contacts for low current applications Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

- Standard straight-through (IP 68) · Strain Relief: - Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

- Multi conductor, PVC, SJT

- Multi conductor, PVC, SJT, shielded - Per customer specifications

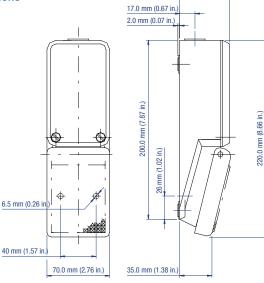
· Connectors: - Per customer specifications

• IEC 601-1 certified

· Other potentiometer values available upon request

· Custom colors available upon request

· Foot rest also available



<sup>\*</sup> Maintained contacts available upon request



# FL1

#### Light medium size, one pedal foot switch

#### **Standard Features**

· Housing: Polyamide 6.6 body and pedal

Guard: Die cast aluminum

Gray body, red guard and black pedal Colors: Anti-Trip: Die cast aluminum pedal and lever in gray

(available on some models)

· Protection Level: IP 65

· Switch Insert: Snap action or slow make-break

Silver alloy contact material

Electrical Rating: 10A/500V AC (If used with appropriate cable,

see cable chart on page 29)

Contact Types: Momentary, maintained, or two stage momentary

Circuit: SPDT-DB; DPDT-DB; 10k Ohm, 2.0W

Potentiometer with SPDT-SB microswitch

· Cable Entry: Threaded hole (M20)

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)











#### **Ordering Information**

| Туре           | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|----------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FL1 U - with   | Foot Guard  |                     |                       |                                      |               |                          |                     |
| FL1 U1 U       | 51.451      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | X                        | IP 65               |
| FL1 U1R U      | 51.452      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | Χ                        | IP 65               |
| FL1 U1S U      | 51.453      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           | X             | X                        | IP 65               |
| FL1 U1RS U     | 51.454      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | X             | Χ                        | IP 65               |
| FL1 SU1 U      | 51.455      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | Χ                        | IP 65               |
| FL1 SU1R U     | 51.456      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | Χ                        | IP 65               |
| FL1 SU1S U     | 51.457      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               | X             | Χ                        | IP 65               |
| FL1 SU1RS U    | 51.458      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | X             | Χ                        | IP 65               |
| FL1 U2 U       | 51.459      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | Χ                        | IP 65               |
| FL1 U1DU1 U    | 51.460      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | Χ                        | IP 65               |
| FL1 U2S U      | 51.461      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | X             | Χ                        | IP 65               |
| FL1 U1DU1S U   | 51.462      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | X             | Χ                        | IP 65               |
| FL1 SU2 U      | 51.463      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | Χ                        | IP 65               |
| FL1 SU1DSU1 U  | 51.464      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | Χ                        | IP 65               |
| FL1 SU2S U     | 51.465      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | X             | Χ                        | IP 65               |
| FL1 SU1DSU1S U | 51.466      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | Χ             | Χ                        | IP 65               |
| FL1 SU1P10 L U | 51.467      | 10k Ohm, 2.0W       | Potentiometer with    | SPDT-SB Microswitch (5A/250V AC)     |               | Solder Tabs              | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

· Switch Insert: Electrical Rating: - Gold plated contacts for low current applications Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

· Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable:

- Multi conductor, PVC, SJT - Multi conductor, PVC, SJT, shielded

- Per customer specifications

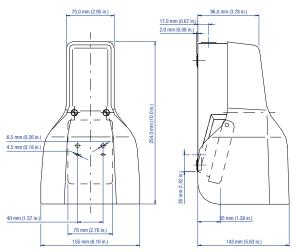
· Connectors: - Per customer specifications

• IEC 601-1 certified

· Other potentiometer values available upon request

· Custom colors available upon request

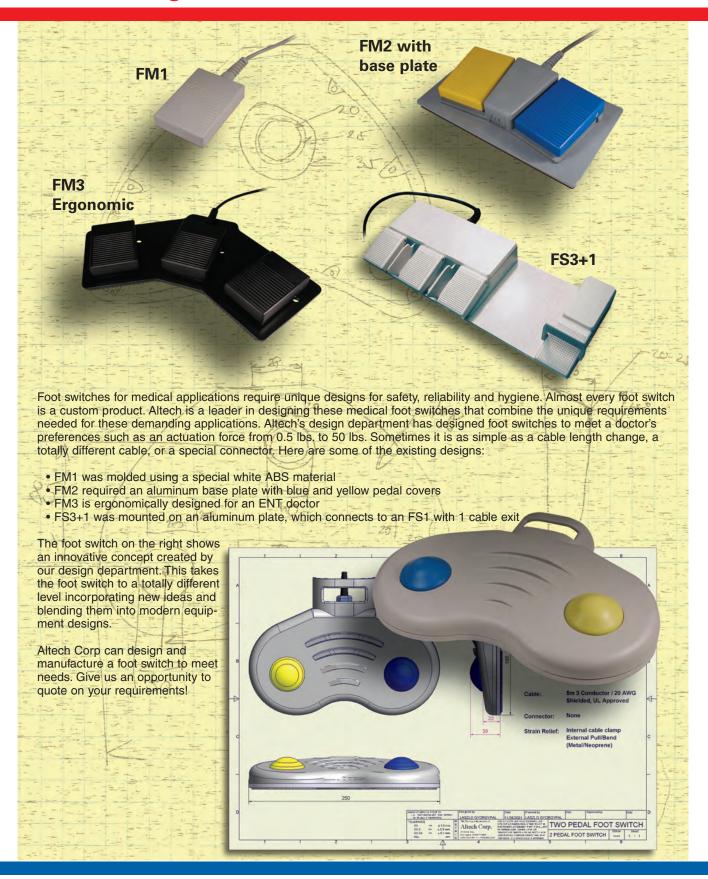
· Foot rest also available



<sup>\*</sup> Maintained contacts available upon request

# Altech Corp.

# **Custom Designs**









The heavy duty, medium size FS series foot switches are primarily used in industrial and medical applications. Due to the sturdy design of the die cast aluminum housing, the foot switch is an exceptional value for strict environments. This compact design offers a lot of versatility:

- Every combination of slow make-break and snap action switch inserts with momentary, maintained and two stage momentary contact types are possible.
   Different potentiometer values are also available.
- Additional safety features like a foot guard, Anti-Trip lever and especially two safety foot switch versions complete this line.
- The optional medical versions and explosion protected foot switches meet the requirements of either IEC 601-1 or EEX d ||C T6, and come with appropriate strain relief and 3 meter (10 ft.) cable.
- The foot switch can be customized with a wide range of options, including cables, connectors, colors, and foot rests.

The typical industrial applications include:

- · ironing machines
- construction machinery
- sand blasting machines
- bending machines
- machine tools
- medical equipment

# / Warning

Please see page 25 in reference to the warning that applies to every application.

# FS<sub>1</sub>

#### Heavy medium size, one pedal foot switch

# Altech Corp.

#### **Standard Features**

Die cast aluminum body and cover with Housing:

Polyamide 6.6 pedal

Colors: Gray body, red cover and black pedal Die cast aluminum pedal and lever in gray Anti-Trip:

(available on some models)

· Protection Level: IP 65

• Switch Insert: Snap action or slow make-break Silver alloy contact material

Electrical Rating: 10A/500V AC (If used with appropriate cable,

see cable chart on page 29)

Contact Types: Momentary, maintained, or

two stage momentary

SPDT-DB; DPDT-DB; 10k Ohm, 2.0W Circuit:

Potentiometer with SPDT-SB microswitch

· Cable Entry: Threaded hole (PG 13.5)

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)







56 mm (2.20 in.)







#### **Ordering Information**

| Туре         | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|--------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FS1          |             |                     |                       |                                      |               |                          |                     |
| FS1 U1       | 51.101      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | X                        | IP 65               |
| FS1 U1R      | 51.102      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | Χ                        | IP 65               |
| FS1 U1S      | 51.103      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           | Χ             | X                        | IP 65               |
| FS1 U1RS     | 51.104      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | Χ             | X                        | IP 65               |
| FS1 SU1      | 51.105      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | X                        | IP 65               |
| FS1 SU1R     | 51.106      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | Χ                        | IP 65               |
| FS1 SU1S     | 51.107      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               | Χ             | X                        | IP 65               |
| FS1 SU1RS    | 51.108      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | Χ             | Χ                        | IP 65               |
| FS1 U2       | 51.109      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | X                        | IP 65               |
| FS1 U1DU1    | 51.110      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | Χ                        | IP 65               |
| FS1 U2S      | 51.111      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | Χ             | X                        | IP 65               |
| FS1 U1DU1S   | 51.112      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | X             | Χ                        | IP 65               |
| FS1 SU2      | 51.113      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | X                        | IP 65               |
| FS1 SU1DSU1  | 51.114      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | Χ                        | IP 65               |
| FS1 SU2S     | 51.115      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | Χ             | X                        | IP 65               |
| FS1 SU1DSU1S | 51.116      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | Χ             | X                        | IP 65               |
| FS1 SU1P10 L | 51.117      | 10k Ohm, 2.0W       | Potentiometer with    | SPDT-SB Microswitch (5A/250V AC)     |               | Solder Tabs              | IP 65               |

**Dimensions** 

R Gray body, red cover and black (Anti-Trip: gray) pedal

• Protection Level: - Ex - Explosion protected

• Switch Insert: - Gold plated contacts for low current applications Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

• Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable:

- Multi conductor, PVC, SJT - Multi conductor, PVC, SJT, shielded

- Per customer specifications

· Connectors: - Per customer specifications

• IEC 601-1 certified

**Options** 

· Other potentiometer values available upon request

· Custom colors available upon request

· Foot rest also available

<sup>17</sup> mm (0.67 in.) 2.0 mm (0.07 in.) 200.0 mm (7.87 in.) i.5 mm (0.26 in.) 4.5 mm (0.18 in. 26 mm (1.02 in. (1.57 in.) 70 mm (2.67 in.) 35.0 mm (1.38 in.)

<sup>\*</sup> Maintained contacts available upon request



# FS1...U

#### Heavy duty medium size, one pedal foot switch

#### **Standard Features**

Die cast aluminum body and Polyamide 6.6 pedal Housing:

• Guard: Die cast aluminum

Colors: Gray body, red guard and black pedal

Die cast aluminum pedal and lever in gray (available on some models) Anti-Trip:

Protection Level:

Switch Insert: Snap action or slow make-break

Silver alloy contact material

Electrical Rating: 10A/500V AC (If used with appropriate cable, see cable chart on page 29)

Contact Types: Momentary, maintained, or two stage momentary

Circuit: SPDT-DB; DBDT-DB; 10k Ohm, 2.0W

Potentiometer with SPDT-SB microswitch Threaded hole (PG 13.5) Cable Entry:

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)











#### **Ordering Information**

| Туре           | Catalog No.    | Circuit<br>Function     | Electrical<br>Ratings | Switch/Contact<br>Type   | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|----------------|----------------|-------------------------|-----------------------|--|---------------|--------------------------|---------------------|
| FS1 U - with   | Foot Guard     |                         |                       |  |               |                          |                     |
| FS1 U1 U       | 51.151         | SPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary   |               | X                        | IP 65               |
| FS1 U1R U      | 51.152         | SPDT-DB                 | 10A/500V AC           | Slow make-break, Maintained  |               | Χ                        | IP 65               |
| FS1 U1S U      | 51.153         | SPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary   | Χ             | X                        | IP 65               |
| FS1 U1RS U     | 51.154         | SPDT-DB                 | 10A/500V AC           | Slow make-break, Maintained  | Χ             | X                        | IP 65               |
| FS1 SU1 U      | 51.155         | SPDT-DB                 | 10A/500V AC           | Snap Action, Momentary   |               | Χ                        | IP 65               |
| FS1 SU1R U     | 51.156         | SPDT-DB                 | 10A/500V AC           | Snap Action, Maintained  |               | X                        | IP 65               |
| FS1 SU1S U     | 51.157         | SPDT-DB                 | 10A/500V AC           | Snap Action, Momentary   | Χ             | Χ                        | IP 65               |
| FS1 SU1RS U    | 51.158         | SPDT-DB                 | 10A/500V AC           | Snap Action, Maintained  | Χ             | Χ                        | IP 65               |
| FS1 U2 U       | 51.159         | DPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary*  |               | X                        | IP 65               |
| FS1 U1DU1 U    | 51.160         | 2x SPDT-DB              | 10A/500V AC           | Slow make-break, Two Stage Momentary                                   |               | X                        | IP 65               |
| FS1 U2S U      | 51.161         | DPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary*  | Χ             | X                        | IP 65               |
| FS1 U1DU1S U   | 51.162         | 2x SPDT-DB              | 10A/500V AC           | Slow make-break, Two Stage Momentary                                   | Χ             | X                        | IP 65               |
| FS1 SU2 U      | 51.163         | DPDT-DB                 | 10A/500V AC           | Snap Action, Momentary*  |               | X                        | IP 65               |
| FS1 SU1DSU1 U  | 51.164         | 2x SPDT-DB              | 10A/500V AC           | Snap Action, Two Stage Momentary                                       |               | Χ                        | IP 65               |
| FS1 SU2S U     | 51.165         | DPDT-DB                 | 10A/500V AC           | Snap Action, Momentary*  | Χ             | X                        | IP 65               |
| FS1 SU1DSU1S U | 51.166         | 2x SPDT-DB              | 10A/500V AC           | Snap Action, Two Stage Momentary                                       | Χ             | X                        | IP 65               |
| FS1 SU1P10 L U | 51.167         | 10k Ohm, 2.0W           | Potentiometer with    | SPDT-SB Microswitch (5A/250V AC)                                       |               | Solder Tabs              | IP 65               |
| FS1 V U - Sat  | ety Foot Swite | ch with Guard           |                       |  |               |                          |                     |
| FS1 S1DO1 V U  | 51.197         | SPDT-DB                 | 10A/500V AC           | Normal: Slow make-break, Momentary<br>Safety: Maintained, Manual reset |               | Χ                        | IP 65               |
| FS1 S2DO2 V U  | 51.198         | DPDT-DB                 | 10A/500V AC           | Normal: Slow make-break, Momentary Safety: Maintained, Manual reset    |               | Х                        | IP 65               |
| FS1 U1DU1 V U  | 51.199         | Two Stage<br>2x SPDT-DB | 10A/500V AC           | Normal: Slow make-break, Momentary<br>Safety: Maintained, Manual reset |               | Х                        | IP 65               |
|                |                |                         |                       |  |               |                          |                     |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

Protection Level: - Ex - Explosion protected

Switch Insert: - Gold plated contacts for low current applications Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

 Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable: - Multi conductor, PVC, SJT

- Multi conductor, PVC, SJT, shielded

- Per customer specifications

· Connectors: - Per customer specifications

IEC 601-1 certified

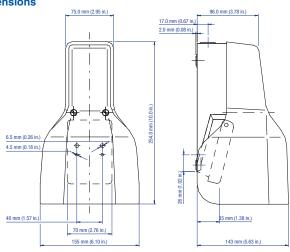
• Die cast aluminum pedal

Other potentiometer values available upon request

· Custom colors available upon request

· Foot rest also available

\* Maintained contacts available upon request



#### Heavy duty medium size, two pedal foot switch

# <u>Altech Corp.</u>

#### **Standard Features**

Housing: Die cast aluminum body and cover with

Polyamide 6.6 pedals

Colors: Gray body, red cover and black pedals Anti-Trip: Die cast aluminum pedal and lever in gray

(available on some models)

· Protection Level: IP 65

Switch Insert: Snap action or slow make-break Silver alloy contact material

10A/500V AC (If used with appropriate cable, Electrical Rating:

see cable chart on page 29) Momentary, maintained, or two stage momentary

SPDT-DB; DPDT-DB

• Cable Entry: Three threaded holes (PG 13.5) • Temperature Range: -30°C up to +80°C (-22°F up to +176°F)













#### **Ordering Information**

Contact Types:

Circuit:

| Туре              | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|-------------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FS2               |             |                     |                       |                                      |               |                          |                     |
| FS2 U1 (2x)       | 51.201      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | Χ                        | IP 65               |
| FS2 U1R (2x)      | 51.202      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | X                        | IP 65               |
| FS2 U1S (2x)      | 51.203      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           | Χ             | X                        | IP 65               |
| FS2 U1RS (2x)     | 51.204      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | Χ             | X                        | IP 65               |
| FS2 SU1 (2x)      | 51.205      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | X                        | IP 65               |
| FS2 SU1R (2x)     | 51.206      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | X                        | IP 65               |
| FS2 SU1S (2x)     | 51.207      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               | Χ             | X                        | IP 65               |
| FS2 SU1RS (2x)    | 51.208      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | Χ             | X                        | IP 65               |
| FS2 U2 (2x)       | 51.209      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | X                        | IP 65               |
| FS2 U1DU1 (2x)    | 51.210      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | X                        | IP 65               |
| FS2 U2S (2x)      | 51.211      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | Χ             | X                        | IP 65               |
| FS2 U1DU1S (2x)   | 51.212      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | Χ             | X                        | IP 65               |
| FS2 SU2 (2x)      | 51.213      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | X                        | IP 65               |
| FS2 SU1DSU1(2x)   | 51.214      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | X                        | IP 65               |
| FS2 SU2S (2x)     | 51.215      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | Χ             | X                        | IP 65               |
| FS2 SU1DSU1S (2x) | 51.216      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | Х             | X                        | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

Protection Level: - Ex - Explosion protected

Switch Insert: - Gold plated contacts for low current applications Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

• Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

- Multi conductor, PVC, SJT · Cable:

- Multi conductor, PVC, SJT, shielded

- Per customer specifications

· Connectors: - Per customer specifications

• IEC 601-1 certified

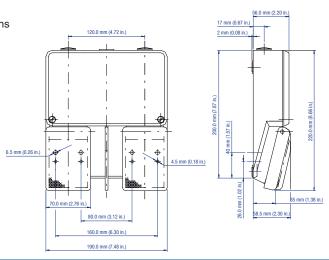
• Die cast aluminum pedal

· Potentiometer available upon request

· Custom colors available upon request

· Combination of different switch inserts

\* Maintained contacts available upon request





# **FS2...U**

Heavy duty medium size, two pedal foot switch with gaurd

#### **Standard Features**

· Housing: Die cast aluminum body with Polyamide 6.6 pedals

Die cast aluminum • Guard:

Colors: Gray body, red guard and black pedals

Anti-Trip: Die cast aluminum pedal and lever in gray (available on some models)

Protection Level:

· Switch Insert: Snap action or slow make-break

Silver alloy contact material

10A/500V AC (If used with appropriate cable, see cable chart on page 29) Electrical Rating:

Momentary, maintained, or two stage momentary Contact Types:

Circuit: SPDT-DB; DPDT-DB

 Cable Entry: Three threaded holes (PG 13.5)

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)



#### **Ordering Information**

| Туре               | Catalog No.   | Circuit<br>Function     | Electrical<br>Ratings | Switch/Contact<br>Type   | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|--------------------|---------------|-------------------------|-----------------------|--|---------------|--------------------------|---------------------|
| FS2 U - with F     | oot Guard     |                         |                       |  |               |                          |                     |
| FS2 U1 (2x) U      | 51.251        | SPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary   |               | Χ                        | IP 65               |
| FS2 U1R (2x) U     | 51.252        | SPDT-DB                 | 10A/500V AC           | Slow make-break, Maintained  |               | Χ                        | IP 65               |
| FS2 U1S (2x) U     | 51.253        | SPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary   | Χ             | X                        | IP 65               |
| FS2 U1RS (2x) U    | 51.254        | SPDT-DB                 | 10A/500V AC           | Slow make-break, Maintained  | Χ             | Χ                        | IP 65               |
| FS2 SU1 (2x) U     | 51.255        | SPDT-DB                 | 10A/500V AC           | Snap Action, Momentary   |               | X                        | IP 65               |
| FS2 SU1R (2x) U    | 51.256        | SPDT-DB                 | 10A/500V AC           | Snap Action, Maintained  |               | Χ                        | IP 65               |
| FS2 SU1S(2x) U     | 51.257        | SPDT-DB                 | 10A/500V AC           | Snap Action, Momentary   | X             | Χ                        | IP 65               |
| FS2 SU1RS (2x) U   | 51.258        | SPDT-DB                 | 10A/500V AC           | Snap Action, Maintained  | Χ             | Χ                        | IP 65               |
| FS2 U2 (2x) U      | 51.259        | DPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary*  |               | Χ                        | IP 65               |
| FS2 U1DU1 (2x) U   | 51.260        | 2x SPDT-DB              | 10A/500V AC           | Slow make-break, Two Stage Momentary                                   |               | Χ                        | IP 65               |
| FS2 U2S (2x) U     | 51.261        | DPDT-DB                 | 10A/500V AC           | Slow make-break, Momentary*  | Χ             | Χ                        | IP 65               |
| FS2 U1DU1S (2x) U  | 51.262        | 2x SPDT-DB              | 10A/500V AC           | Slow make-break, Two Stage Momentary                                   | Χ             | X                        | IP 65               |
| FS2 SU2 (2x) U     | 51.263        | DPDT-DB                 | 10A/500V AC           | Snap Action, Momentary*  |               | X                        | IP 65               |
| FS2 SU1DSU1 (2x) U | 51.264        | 2x SPDT-DB              | 10A/500V AC           | Snap Action, Two Stage Momentary                                       |               | X                        | IP 65               |
| FS2 SU2S (2x) U    | 51.265        | DPDT-DB                 | 10A/500V AC           | Snap Action, Momentary*  | Χ             | X                        | IP 65               |
| FS2 SU1DSU1S (2x)  | 51.266        | 2x SPDT-DB              | 10A/500V AC           | Snap Action, Two Stage Momentary                                       | Х             | X                        | IP 65               |
| FS2 V U - Safe     | etv Foot Swit | ch with Guard           | 1                     |  |               |                          |                     |
| FS2 S1DO1 V(2x) U  | 51.297        | SPDT-DB                 | 10A/500V AC           | Normal: Slow make-break, Momentary<br>Safety: Maintained, Manual reset |               | Χ                        | IP 65               |
| FS2 S2DO2 V(2x) U  | 51.298        | DPDT-DB                 | 10A/500V AC           | Normal: Slow make-break, Momentary<br>Safety: Maintained, Manual reset |               | Х                        | IP 65               |
| FS2 U1DU1 V(2x) U  | 51.299        | Two Stage<br>2x SPDT-DB | 10A/500V AC           | Normal: Slow make-break, Momentary<br>Safety: Maintained, Manual reset |               | Х                        | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

 Protection Level: - Ex - Explosion protected

- Gold plated contacts for low current applications Switch Insert: **Electrical Rating:** Max. Power Consumption: 12.5mW at max. 25mA or 25V DC

 Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable:

- Multi conductor, PVC, SJT - Multi conductor, PVC, SJT, shielded

- Per customer specifications

· Connectors: - Per customer specifications

IEC 601-1 certified

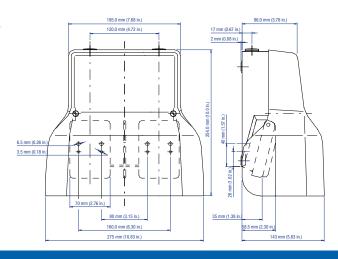
Die cast aluminum pedal

· Potentiometer available upon request

· Custom colors available upon request

· Combination of different switch inserts

\* Maintained contacts available upon request



# FS<sub>3</sub>

#### Heavy duty medium size, three pedal foot switch

# Altech Corp.

#### **Standard Features**

· Housing: Die cast aluminum body and cover with

Polyamide 6.6 pedals

Gray body, red cover and black pedals Colors:

Anti-Trip: Die cast aluminum pedal and lever in gray (available on some mode

Protection Level:

· Switch Insert: Snap action or slow make-break

Silver alloy contact material

10A/500V AC (If used with appropriate cable, see cable chart on page 29) Electrical Rating:

Contact Types: Momentary, maintained, or

two stage momentary

Circuit: SPDT-DB; DPDT-DB

 Cable Entry: Three threaded holes (PG 13.5) • Temperature Range: -30°C up to +80°C (-22°F up to +176°F)













#### **Ordering Information**

| Туре              | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|-------------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FS3               |             |                     |                       |                                      |               |                          |                     |
| FS3 U1 (3x)       | 51.301      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | X                        | IP 65               |
| FS3 U1R (3x)      | 51.302      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | X                        | IP 65               |
| FS3 U1S (3x)      | 51.303      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           | Χ             | X                        | IP 65               |
| FS3 U1RS (3x)     | 51.304      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | X             | Χ                        | IP 65               |
| FS3 SU1 (3x)      | 51.305      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | X                        | IP 65               |
| FS3 SU1R (3x)     | 51.306      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | Χ                        | IP 65               |
| FS3 SU1S (3x)     | 51.307      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               | Χ             | X                        | IP 65               |
| FS3 SU1RS (3x)    | 51.308      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | X             | Χ                        | IP 65               |
| FS3 U2 (3x)       | 51.309      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | X                        | IP 65               |
| FS3 U1DU1 (3x)    | 51.310      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | X                        | IP 65               |
| FS3 U2S (3x)      | 51.311      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | Χ             | X                        | IP 65               |
| FS3 U1DU1S (3x)   | 51.312      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | X             | X                        | IP 65               |
| FS3 SU2 (3x)      | 51.313      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | X                        | IP 65               |
| FS3 SU1DSU1 (3x)  | 51.314      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | X                        | IP 65               |
| FS3 SU2S (3x)     | 51.315      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | Χ             | X                        | IP 65               |
| FS3 SU1DSU1S (3x) | 51.316      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | X             | X                        | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

Protection Level: - Ex - Explosion protected

Switch Insert: - Gold plated contacts for low current applications Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC

- Standard straight-through (IP 68)

Strain Relief: - Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable:

- Multi conductor, PVC, SJT - Multi conductor, PVC, SJT, shielded

- Per customer specifications

· Connectors: - Per customer specifications

• IEC 601-1 certified

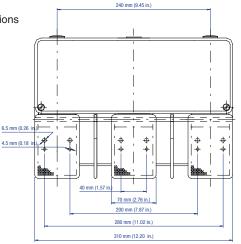
· Die cast aluminum pedal

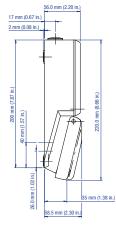
· Potentiometer available upon request

· Custom colors available upon request

· Combination of different switch inserts

\* Maintained contacts available upon request







# **FS2...U**

Heavy duty medium size, three pedal foot switch with gaurd

#### **Standard Features**

· Housing: Die cast aluminum body and Polyamide 6.6 pedals

• Guard: Die cast aluminum

Colors: Gray body, red guard and black pedals Anti-Trip: Die cast aluminum pedal and lever in gray

(available on some models)

Protection Level:

Switch Insert: Snap action or slow make-break

Silver alloy contact material

Electrical Rating: 10A/500V AC (If used with appropriate cable,

see cable chart on page 29) Momentary, maintained, or

two stage momentary Circuit: SPDT-DB; DPDT-DB

 Cable Entry: Three threaded holes (PG 13.5)

• Temperature Range: -30°C up to +80°C (-22°F up to +176°F)











#### **Ordering Information**

Contact Types:

| Туре                | Catalog No. | Circuit<br>Function | Electrical<br>Ratings | Switch/Contact<br>Type               | Anti-<br>Trip | Cable Screw<br>Terminals | Protection<br>Level |
|---------------------|-------------|---------------------|-----------------------|--------------------------------------|---------------|--------------------------|---------------------|
| FS3 U - with F      | oot Guard   |                     |                       |                                      |               |                          |                     |
| FS3 U1 (3x) U       | 51.351      | SPDT-DB             | 10A/500V AC           | Slow make-break, Momentary           |               | Χ                        | IP 65               |
| FS3 U1R (3x) U      | 51.352      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          |               | X                        | IP 65               |
| FS3 U1S (3xs) U     | 51.353      | SPDT-DB             | 10A/500V AC           | Slow make-break                      | Χ             | X                        | IP 65               |
| FS3 U1RS (3x) U     | 51.354      | SPDT-DB             | 10A/500V AC           | Slow make-break, Maintained          | Χ             | X                        | IP 65               |
| FS3 SU1 (3x) U      | 51.355      | SPDT-DB             | 10A/500V AC           | Snap Action, Momentary               |               | X                        | IP 65               |
| FS3 SU1R (3x) U     | 51.356      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              |               | X                        | IP 65               |
| FS3 SU1S (3x) U     | 51.357      | SPDT-DB             | 10A/500V AC           | Snap Action                          | X             | X                        | IP 65               |
| FS3 SU1RS (3x) U    | 51.358      | SPDT-DB             | 10A/500V AC           | Snap Action, Maintained              | Χ             | Χ                        | IP 65               |
| FS3 U2 (3x) U       | 51.359      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          |               | X                        | IP 65               |
| FS3 U1DU1 (3x) U    | 51.360      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary |               | Χ                        | IP 65               |
| FS3 U2S (3x) U      | 51.361      | DPDT-DB             | 10A/500V AC           | Slow make-break, Momentary*          | Χ             | X                        | IP 65               |
| FS3 U1DU1S (3x) U   | 51.362      | 2x SPDT-DB          | 10A/500V AC           | Slow make-break, Two Stage Momentary | X             | Χ                        | IP 65               |
| FS3 SU2 (3x) U      | 51.363      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              |               | X                        | IP 65               |
| FS3 SU1DSU1 (3x) U  | 51.364      | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     |               | X                        | IP 65               |
| FS3 SU2S (3x) U     | 51.365      | DPDT-DB             | 10A/500V AC           | Snap Action, Momentary*              | Χ             | X                        | IP 65               |
| FS3 SU1DSU1S (3x) I | J 51.366    | 2x SPDT-DB          | 10A/500V AC           | Snap Action, Two Stage Momentary     | X             | X                        | IP 65               |

R Gray body, red cover and black (Anti-Trip: gray) pedal

#### **Options**

- Protection Level: - Ex - Explosion protected
- Gold plated contacts for low current applications Switch Insert: **Electrical Rating:** Max. Power Consumption: 12.5mW at

max. 25mA or max. 25V DC

 Strain Relief: - Standard straight-through (IP 68)

- Bend protection (IP 68)

- Trumpet Pull/Bend protection (IP 68)

· Cable:

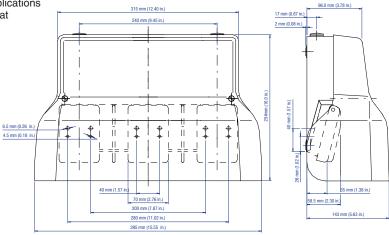
- Multi conductor, PVC, SJT - Multi conductor, PVC, SJT, shielded

- Per customer specifications

 Connectors: - Per customer specifications

- IEC 601-1 certified
- Die cast aluminum pedal
- · Potentiometer available upon request
- · Custom colors available upon request
- · Combination of different switch inserts

#### \* Maintained contacts available upon request





# MARNING for General Applications

The use of foot switches on machines, which do not have "point of operation" and "pinch point" protection can cause serious injuries to the operator!

The point of operation and pinch point guarding devices should be properly installed before a foot switch is used. The foot controls should be utilized so that it is impossible for the operator's hands and fingers to remain within the point of operation during the machine cycle.

**Point of operation** - The point or area of the machine or the equipment where the work piece or material is positioned and work is being performed during any process such as forming, cutting, welding, punching, shearing, assembling, riveting, etc.

Pinch point - Any point at which it is possible for a portion of the body to be caught and injured between moving machine or equipment or work piece parts.

# Additional WARNING for Medical Applications

Medical environments have high demands for safety and hygiene. The use of inadequate foot switches can cause serious injuries to the user and patient! The Altech/ASA foot switches meet the requirements of IEC 60601-1 for medical electrical equipment.



Type: FM1 SU2 F4 Company: Altech/ASA Model No.: 51.603B-00001 0.1A 25V~/60V === IP 68

- Protection Level IP 68 (Immersion in water)
- Limited voltage rating to 25V~ (AC)/60V == (DC)
- UL/CSA, VDE approved switch insert
- Installed cable with special pull/bend protection strain relief
- Special durability inspection and drop test of housing
- Alternative colors to differentiate this special application

The IEC 60601-1 certification for this special application is issued by TÜV Essen/RWTÜV. This organization is a Notified Body by the European Union and has Governmental accreditation for all types of certification plans for Medical Devices.

Nevertheless, it is the responsibility of the user to select the suitable foot switch for his application. Altech can only make suggestions for the proper use in special applications. Otherwise the correct installation and wiring of the foot switch should comply with all Federal, State and Local safety and health regulations.



## Features Applicable to the FS Series

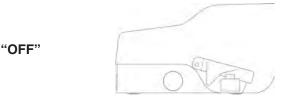


"ON"

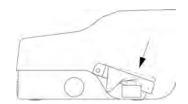
### **Safety Foot Switch**

To prevent accidents, Altech/ASA has included a special safety foot switch in its line. The concept is based on an extensive survey, which indicated that, in case of an accident the user depresses the foot pedal even harder instead of releasing the pedal. This special safety foot switch is designed to compensate for this emergency situation, by breaking electrical contact when the pedal is completely depressed. It has modified, two stage momentary contact types, with a manual reset button.

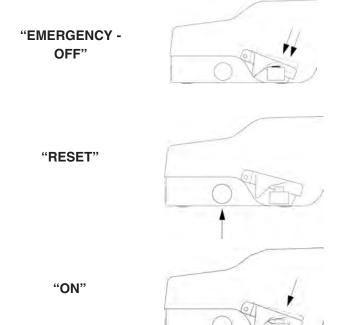
#### **Safety Foot Switch Functions**



**Step 1:** The pedal is not depressed. The contacts are open. The machine is turned off.



**Step 2:** To start the machine, the pedal must be depressed until the "pressure point", where resistance is noticeable.



**Step 3:** In an emergency, if the pedal is depressed beyond the pressure point, the machine will stop. Beyond the pressure point, the contacts are locked in the "OFF" - Position. The machine cannot operate at this time.

Note: The machine can also be stopped, by releasing the pedal instead of depressing harder. (Back to Step 1)

**Step 4:** The push button on the side of the foot switch must be pushed by hand to enable the foot switch to start the machine function again.

Step 5: Return to condition described in Step 2.

The safety foot switch is available in the one and two pedal heavy duty with guard versions. See pages 20 and 22 for more information on the FS1 ... U and FS2 ... U Series.



# Features Applicable to the FL and FS Series\*

#### **Foot Guards**

Foot Guards are used to prevent accidentally actuating the foot switch by falling objects such as parts and tools.



Most European accident prevention standards such as the German

Berufsgenos- senschaft (BG) (similar function to OSHA) require foot guards for many applications. In addition there is a special space under the guard, where certain devices such as, emergency off switches and contactors can be mounted.

### **Foot Rests**

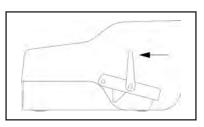
Ergonomically designed foot rests help reduce fatigue that may set in after operating a foot switch for an extended period of time.

Foot rests are available on the one pedal versions of the FL and FS series, with or without a guard.



#### Anti-Trip Lever Mechanism

(Prevents the pedal from accidental actuation)



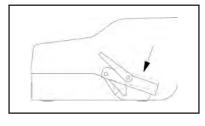
Step 1: To depress the pedal, the Anti-Trip lever must be pushed forward. Otherwise, a spring loaded mechanism holds the lever in position.

#### **Potentiometers**

Foot switches can be ordered with built-in potentiometers to change speed, etc. Typical applications include:

- Coil Winding Machines
  - Pumps
- Machine Tools
- Sewing Machines
- Medical Facilities
- Welding Machines

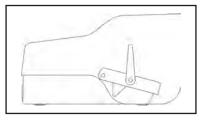
Function: In the "OFF" position the potentiometer is at "zero". A microswitch connected in series to the potentiometer will only provide a voltage to the potentiometer once the foot switch has been activated.



**Step 2**: After the lever is pushed forward, the pedal can be easily depressed.



The standard resistance of the potentiometer foot switch is 10k Ohm which provides a proportional signal depending on the position of the foot pedal (Resistances of 100 Ohm to 20k Ohm are also available). Potentiometers are available for the FL and FS Series.



**Step 3**: Immediately after releasing the pedal, the spring loaded mechanism brings the lever back to its starting position.

#### **Two Stage Function**

The following describes the mechanical operation of two momentary contact types:

**Stage 1**: To activate the first momentary contact, depress the pedal until resistance is noticeable.



**Stage 2**: To activate the second momentary contact, press the pedal beyond the resistance point.

Both functions are now turned on. By releasing the pedal, the functions will be turned off in reversed direction.

The maximum human safety and machine protection is provided by the combination of Anti-Trip lever mechanism and Foot Guards!

<sup>\*</sup> The two stage function is applicable to all foot switches.



# **Switch Specifications**

# **Contact Types**

#### Momentary

To start the function, press the pedal. Release the pedal to stop. (Press to start - Release to stop)



#### Maintained

To start the function, press the pedal. After releasing the pedal, the contacts remain in the "ON" position unless the user presses and releases the pedal again. (Press to start - Press to stop)

## **Switch Types**

#### Slow make-break

With double throw contacts where the moving contact, in transferring, interrupts one circuit before establishing the other.

#### Snap Action

The action of moving contact members that transfer from one position to another at a speed which is essentially independent of actuator speed.



|      | Silap action |
|------|--------------|
| n.o. |              |
| n.c. |              |
|      |              |

#### **Contact Configuration**

| Foot<br>Switch              | Circuit<br>Function  | Contact Symbol                                       | Other common expressions used  | Description  |
|-----------------------------|--|--|--|--|
| FM Series<br>&<br>FK Series | SPDT-SB<br>(Single Pole,<br>Double Throw,<br>Single Break)       | 01   | • Form C • Break, Make • Changeover  | With a SPDT-SB contact, one circuit opens at almost the same time another circuit closes. The contact can also be wired as a n.o. (contacts C and 2) or a n.c. (contacts C and 1). |
|                             | DPDT-SB<br>(Double Pole,<br>Double Throw,<br>Single Break)       | 01<br>02<br>03<br>03                                 | • Form CC • 2x Break, Make • 2x Changeover   | Twice the function of a SPDT-SB.   |
|                             | 2x SPDT-SB<br>(2x Single Pole,<br>Double Throw,<br>Single Break) | 1. Stage  1. Stage  1. Stage  2                      | 1. Stage<br>SPDT-SB*<br>2. Stage<br>SPDT-SB*<br>(* Form C; Break,<br>Make; Changeover) | 1 SPDT-SB contact before the pressure point and 1 SPDT-SB contact beyond the pressure point.   |
| FL Series<br>&<br>FS Series | SPDT-DB<br>(Single Pole,<br>Double Throw,<br>Double Break)       | 30 10 02   | • Form Z<br>• 1 n.o. / 1 n.c.  | Contacts 1 and 2 are the 1 n.c. Contacts 3 and 4 are the 1 n.o.  |
|                             | DPDT-DB<br>(Double Pole,<br>Double Throw,<br>Double Break)       | 10 02<br>30 4 04<br>50 06                            | • Form ZZ<br>• 2 n.o. / 2 n.c.   | Contacts 1, 2 and 5, 6 are 2 n.c.<br>Contacts 3, 4 and 7, 8 are 2 n.o.   |
|                             | 2x SPDT-DB   | 10 2 1. Stage 30 4 Pressure 50 6 Point 2. Stage 70 8 | 1. Stage<br>SPDT-DB*<br>2. Stage<br>SPDT-DB*<br>(* Form Z)<br>• 2x 1 n.o. / 1 n.c.     | Contacts 1 and 2 are n.c., contacts 3 and 4 are n.o., before the pressure point. Contacts 5 and 6 are n.c., contacts 7 and 8 are n.o., beyond the pressure point.                  |

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# **Options**



#### IEC 60601-1

International Standard for medical electrical equipment. General requirements for safety.



Medical environments have high demands on safety and hygiene. The certification for this special application is issued by TÜV Essen/RWTÜV. This organization is

a Notified Body by the European Union and has Governmental accreditation

for all types of certification plans for Medical Devices. The Altech/ASA foot switches meet the requirements of IEC 60601-1 for medical electrical equipment.

- Protection Level IP 68
- Limited voltage rating to 25V~ (AC)/60V == (DC)
- UL/CSA, VDE approved switch insert
- Installed cable with special pull/bend protection strain relief
- Special durability inspection and drop test of housing
- Alternative colors to differentiate this special application

The IEC 60601-1 certified foot switches are available in the FM, FL, and FS series.



#### **Explosion Protected - EX**

In many industries and environments explosion protected foot switches are required. Applications include, but are not limited to:

- Petrochemical Industries
- Chemical Industries
- Plastic Molding Machines
- Printing Machinery
- Converting Machines
- Wood Processing Machinery
- Food Processing Industries

Altech/ASA foot switches use the principle of flame proof enclosures. Possible explosions are contained inside the foot switch and cannot cause any damage outside.

Altech/ASA Explosion Protected foot switches use special switch inserts which meet the EEX, d, ||C and T6 classifications and can be used in zone 1 and 2 applications to DIN VDE 0165.

EEX = Ex protected to European EN 50014

d = Flameproof enclosure

||C = Explosion group ||C

T6 = Temperature class 6

Due to the increased safety requirements Altech/ASA EX - Foot switches are always delivered complete with a 3 meter (10 ft.) cable and an EX approved strain relief.

Explosion protected foot switches are only available in the FS Series.

#### **Cable Chart**

| Foot       | AWG Size/    | Voltage  | Current Carrying          | Overall | Diameter      | Material        | Applications                               |                |                        |
|------------|--------------|----------|---------------------------|---------|---------------|-----------------|--|----------------|------------------------|
| Switch     | No. of Cond. | Rating/V | Capacity/Amp.             | Inches  | mm            | -               |  |                |                        |
| FM Series, | 20/2         | 300      | 8                         | .200265 | 5.08 - 6.73   | SJT - Plastic   | Light and medium duty                      |                |                        |
| FK Series, | 20/3         | 300      | 8                         | .210292 | 5.33 - 7.42   | SJO - Neoprene  | service such as small                      |                |                        |
| PCFS-3M    | 20/4         | 300      | 8                         | .240322 | 6.10 - 8.18   | SJTO - Plastic  | tools, small motors,                       |                |                        |
| Series     | 20/6         | 300      | 7                         | .260381 | 6.60 - 9.68   | SJOOW - Plastic | sound, office, and                         |                |                        |
|            | 20/9         | 300      | 7                         | .317439 | 8.05 - 11.15  |                 |  | medical equipm | medical equipment, etc |
|            | 20/12        | 300      | 7                         | .338478 | 8.59 - 12.14  |                 |  |                |                        |
|            | 20/20        | 300      | 5                         | .430561 | 10.92 - 14.25 |                 |  |                |                        |
|            | 18/2         | 300      | 10                        | .230301 | 5.84 - 7.65   |                 |  |                |                        |
|            | 18/3         | 300      | 10                        | .242318 | 6.15 - 8.08   |                 |  |                |                        |
|            | 18/4         | 300      | 7                         | .254330 | 6.45 - 8.38   |                 |  |                |                        |
| FL Series  | 18/2         | 600      | 10                        | .335375 | 8.51 - 9.53   | ST - Plastic    | Heavy duty service                         |                |                        |
| &          | 18/3         | 600      | 10                        | .360390 | 9.14 - 9.91   | SO - Neoprene   | such as heavy tools,                       |                |                        |
| FS Series  | 18/4         | 600      | 7                         | .385420 | 9.78 - 10.67  | STO - Plastic   | industrial equipment                       |                |                        |
|            | 16/2         | 600      | 13                        | .340400 | 8.64 - 10.16  | SJOOW - Plastic | controls, industrial                       |                |                        |
|            | 16/3         | 600      | 13                        | .355420 | 9.02 - 10.67  |                 | machinery, medical                         |                |                        |
|            | 16/4         | 600      | 10                        | .390450 | 9.91 - 11.43  |                 | equipment, etc.                            |                |                        |
|            |              |          | uide. If the conditions o |         |               |                 | Note: SJO, SJTO, SO,<br>STO, and SJOOW are |                |                        |

resistant against oil, grease, and acid.



#### STANDARD TERMS AND CONDITIONS OF SALE

TITLE - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

SHIPMENT AND DELIVERY - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

PRICE - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

**PAYMENT** - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than \$100.00 will be billed at \$100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

**LIMITED WARRANTY** - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

No representation of other affirmation of facts, including but not limited to statements regarding capacity, suitability for use or performance of the equipment, shall be or be deemed to be a warranty or representation by ALTECH for any purpose, nor give rise to any liability or obligation of ALTECH whatsoever.

Customer's sole and exclusive remedy in the event of breach of warranty, as set forth herein, is expressly limited to (1) the correction of the defect by adjustment, repair, modification, or replacement, or (2) issuance of a credit or refund of the purchase price for the defective equipment at ALTECH's election and sole expense.

EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY EXTENDS ONLY TO THE CUSTOMER FROM ALTECH OR ITS AUTHORIZED DISTRIBUTOR.

LIMITATION OF LIABILITY - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either party more than two (2) years after the cause of action has accrued.

PATENT INDEMNITY - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

SELLER'S REMEDIES - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder, ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

**GOVERNING LAW** - This agreement will be governed by the Laws of the State of New Jersey.

**GENERAL** - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.



## Here are a few other great products available from Altech!

#### Contactors, Mini Contactors, Overload Relays and Manual Motor Starters



#### Contactors

- UL508 CSA C22.2 No.14
- IEC 60947-2 & IEC 60947-4-2
- 1/2HP up to 600HP @ 480V AC
- Direct Mounting Overload Relays
- Full line of accessories
- UL508 Type E Manual Motor Starters
- UL508 (Type E self-protected Manual Motor Controller)
- CSA C22.2 No.14
- IEC 60947-2 & IEC 60947-4-2
- Type F combination Manual Motor Controller (with MC-Series Contactor)

#### Terminal Blocks



Altech offers a NEW Terminal Block catalog with the most competitively priced blocks in the industry. We feature screw and spring clamp models for DIN rail and panel mount applications. This advanced line of wire termination products will increase your design options and help to get the job done more efficiently. Our line of blocks include feed-through (single, double or triple level), distribution, ground, fuse, disconnect, thermocouple, surge suppressor and indicator. A wide variety of accessories, tools and ferrules are available.

#### Industrial Enclosures



Altech offers a broad selection of nonand aluminum Industrial metallic Enclosures to meet your diverse design requirements. Sizes range from 1.97 x 2.05 x 1.38 to 35.43 x 11.81 x 5.59 inches. include Materials polycarbonate, polystyrene, polypropylene, ABS or aluminum. Polycarbonate and aluminum series have been recently expanded. Protection up to IP67 (NEMA 4, 4X). Smooth sidewalls or sidewalls with knockouts. Enclosures can be mounted directly onto a panel, frame or other mounting surfaces. EMI / RFI Coating is available. Competitive cover printing is available. Hinge Kits. Customization available.

#### Liquid Tight Strain Reliefs



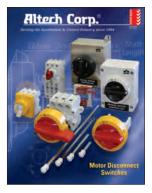
This 64-page catalog introduces Altech's full line Liquid Tight Strain Reliefs (Cord Grips) which are used to seal cable entries, keep contaminant's from entering enclosures, provide strain relief and thus reduce stress on components and termination points inside enclosures. Available in standard, high-performance, and economy versions, functions include Straight-Through, Increased Strain Relief, Bend Protection, Pull/Bend Protection, Multi-conductor, Flat Cable and EMI/RFI. They can be used with almost any type of cable, cord or conductor - solid, stranded, flat, shielded, high temperature, etc.

#### **DIN Rail Power Supplies**



Altech DIN RAIL mountable power supplies have Universal AC input. They are suitable for industrial and automation applications. UL508 Listed or UL Recognized. Single and Three phases up to 960W. Outputs of 5V, 12V, 15V, 24V and 48V. Class 2 devices are available. Installed on DIN rail TS35/ 7.5 or 15. Protections of Short circuit / Overload / Overvoltage / Over temperature. Cooling by free air convection. All-In-One DC-UPS, battery based. Ultra Capacitor DC-UPS, no battery required. Worldwide approvals. 3 year warranty.

#### **Motor Disconnect Switches**



Altech's line of Motor Disconnect Switches are UL 508 listed as Manual Motor Controllers for AC Motor Starting Across-the-line and AC General use. This new 16 page catalog includes the 3 different handle designs, which are all available in gray/black or yellow/red housings. Electrical ratings are 25-150A / 600V. The switches are non-fused DIN Rail mountable. Neat features include: snap-on auxiliary switches, door mounting kit and a retrofit 30A fuse holder. Also featured are Enclosed Motor Disconnect Switches & Fused Enclosed Motor Disconnect Switch (30A) in plastic or stainless housings.

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