### Technical Data

<table>
<thead>
<tr>
<th>POWER SUPPLY</th>
<th>Power Rail or terminals 14+, 15-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>10-35 VDC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>1.8 W</td>
</tr>
</tbody>
</table>

| INPUT (not intrinsically safe) | Terminals 7-, 8+, (9+); 10-, 11+, (12+) |
| Current                       | 4-20 mA limited to = 25 mA           |
| Voltage drop                  | = 4 V or internal resistance 200 Ω at 20 mA |
| Resistance                    | > 100 kΩ when wiring resistance in the field < 50 Ω or > 800 Ω at 20 mA |

| OUTPUT (intrinsically safe)   | Terminals 1+, 2; 4+, 5- |
| Current                       | 4-20 mA |
| Voltage                       | ≥ 14 V at 20 mA |
| Load                          | 100-700 Ω |

### Transfer Characteristics

| Calibration                   | ≤ 10 µA at 20°C incl. non-linearity, calibration, hysteresis, supply and load changes |
| Temperature drift             | ≤ 1 µA/°C |
| Rise time                     | < 100 µs (bounce from 10-90%) |

### Certificates
- Zone 0, 1, 2
- BAS 00 ATEX 7240, Item (1) G D [Ex ia] IIC
- BAS 00 ATEX 7240, Item (1) G E [Ex ia] IIC

### Mechanical

- Housing: Type C see page 454
- Dimensions: 4.65” x 0.79” x 4.53” (118 x 20 x 115 mm)
- Weight: 3.5 oz. (≈ 100 g)
- AMBIENT TEMPERATURE: -4°F to +140°F (-20°C to +60°C)

### Connection Diagram

#### 2-Channel SMART Current/Voltage Driver

**Model Number**

**KFD2-SCD2-Ex2.LK**
- 2-channel
- 24 VDC supply/Power Rail compatible
- Suitable for Division 2 mounting
- Lead breakage (LB) and short-circuit (SC) monitoring
- HART compatible
- SIL 2 according to IEC 61508; SIL 3 in a redundant structure

This unit drives SMART I/P converters, electrical valves and positioners in hazardous areas. The digital signals modulated on the analog values can be transmitted bidirectionally between a SMART (HART) field device and the SMART communicator. Voltage transferred across the DC/DC converter provides a proportional current at the output terminals. A minimum of 14 V is available at 20 mA for all supply voltages, allowing the unit to drive loads up to 700 Ω. A current source with low AC impedance may need to be connected to terminals 7- and 9+ for error-free HART transmission. This barrier is equipped with KF-STP-GN or KF-STP-BU terminals containing access holes for test probes, for the connection of a hand held terminal to the circuit. If used in conjunction with P+F's Power Rail system, the unique collective error messaging feature can be utilized.

#### Lead Monitoring Input Characteristics:
During a lead breakage (> 800 Ω) or short circuit (< 50 Ω) condition, the input resistance is > 100 kΩ, the field current is < 1 mA and the red LED is flashing.

When using field instruments that do not require HART communication, set the switches to position 1 as shown in the chart.

#### Hazardous Area

Class I; Div 1, 2
Zone 0, 1, 2

#### Safe Area or Div 2

KFD2-SCD2-Ex2.LK

- I/O
- Current Source
- 24 VDC
- 250 Ω
- 12
- 11
- 10 (+)
- 9 (+)
- 8 (+)
- 7 (-)
- 6
- 5
- 4
- 3
- 2
- 1 (OFF)

#### Front View

- Housing type C (see system description)
- KF-STP-GN removable terminal green
- KF-STP-BU removable terminal blue
- LED green: Power supply
- LED red: LB and SC
- Switch S1, S2: HART communication