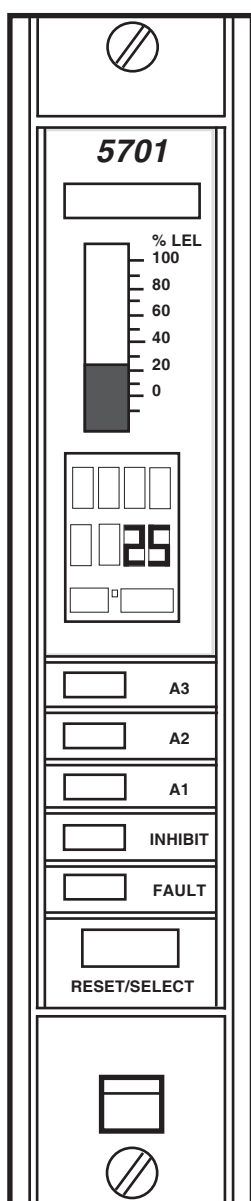


CHAPTER 2 - SYSTEM DESCRIPTION

4. SINGLE CHANNEL CONTROL CARDS

4.1 General



The 5701 Single Channel Control Card provides control, display and alarm facilities for a connected gas detector. The front panel display indicates the gas reading and channel status while LEDs are used for alarms. A push-button is provided for resetting the alarms and selecting the card for use with the Engineering Card.

The operation of the control card is microprocessor controlled and is fully definable for a wide range of connected gas detectors and application requirements. The software configuration setup is stored in an EEPROM.

There are two types of control card depending on the type of gas detector being fitted to the system:

- Single Channel Control Card 4 - 20mA.
Part Number 05701-A-0301.
- Single Channel Control Card Catalytic.
Part Number 05701-A-0302.

Each of the above control cards consist of a single channel control card fitted with the respective plug-in sensor drive module.

An optional Analogue Output Module can also be plugged into the single channel control card to provide a remote output of the channel card readings.

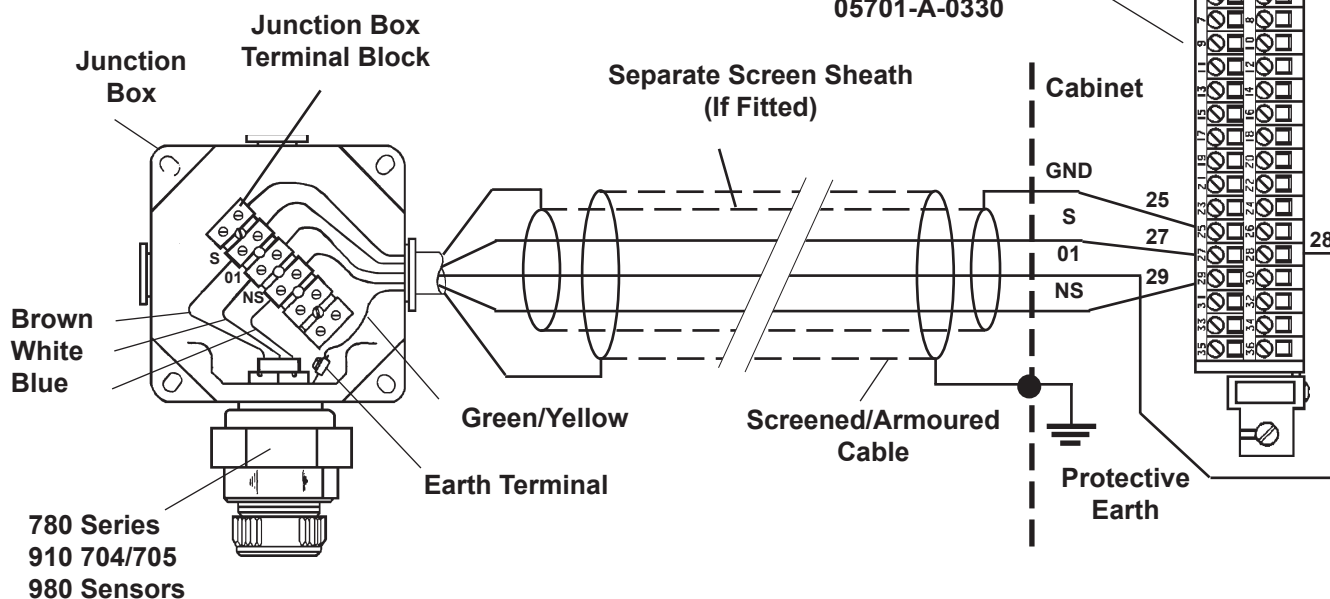
CHAPTER 4 - INSTALLATION INSTRUCTIONS

The sensor cable screen or steel wire armour (or braid), as appropriate, should be connected to the system (protective) earth. This can be achieved where the cable enters the cabinet by using a metal cable gland, or by other suitable means, and avoiding any screen 'tails' within the cabinet.

Where the cable consists of a separate screen sheath and wire armour (or braid), the armour should be connected, at the cabinet entry, to the protective earth and the screen sheath should be connected to the GROUND terminal of the Field Interface/Relay Card or to a suitable instrument earth point.

Single Channel Control Card Catalytic 05701-A-0302
Fitted with Catalytic Sensor Drive 05701-A-0284

Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330

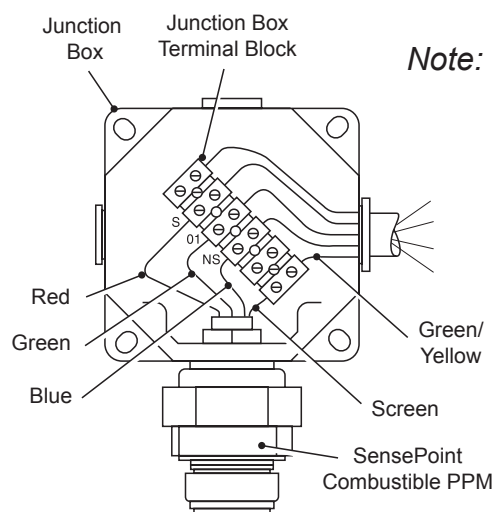
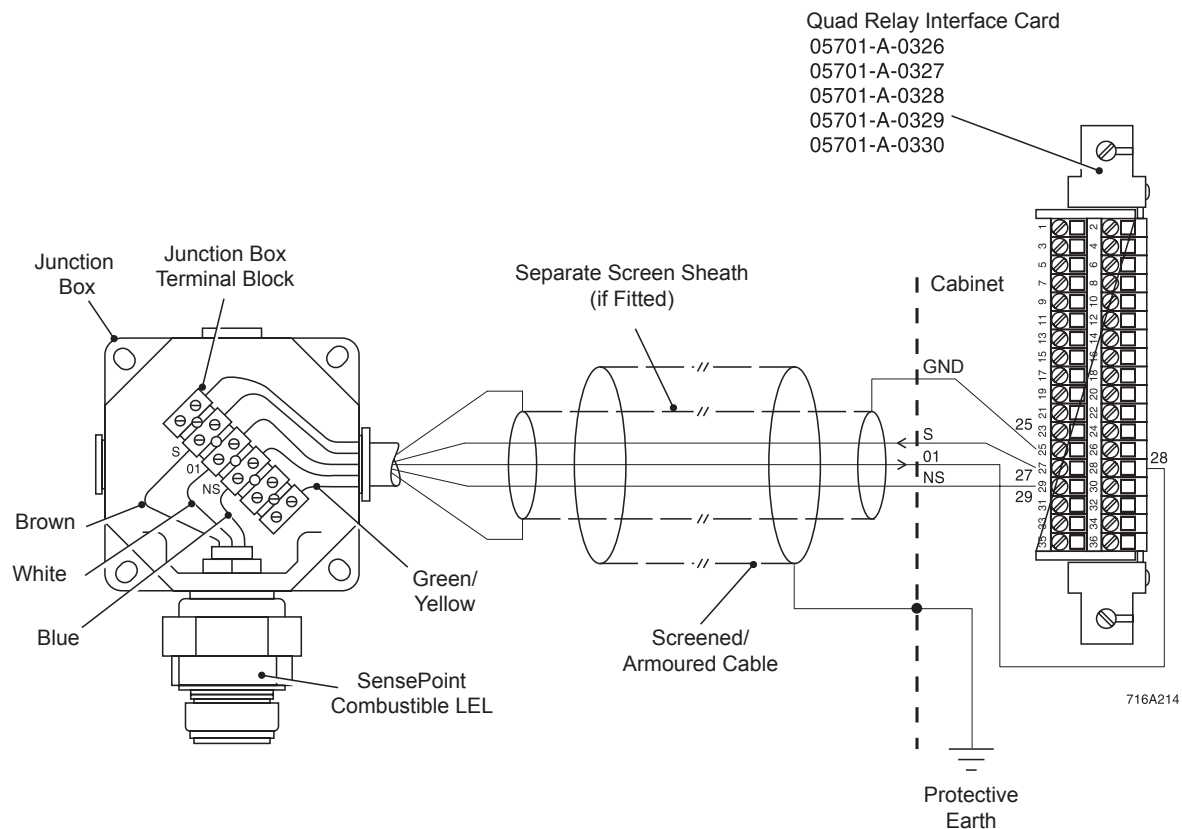


Note: Where a sensor is earthed locally, either to the Earth Stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e., at the sensor or at the Interface/Relay Card.

Combustible Sensor, Junction Box and Terminal Block Connections

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card Catalytic 05701-A-0302
Fitted with Catalytic Sensor Drive 05701-A-0284



Note: Where a sensor is earthed locally, either to the Earth Stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e., at the sensor or at the Interface/Relay Card.

SensePoint Combustible Sensor, Junction Box and Terminal Block Connections

CHAPTER 4 - INSTALLATION INSTRUCTIONS

13.3 4 - 20mA Loop Powered Sensor Connections

Loop powered sensors require a two wire connection and the sensor documentation will indicate the positive and negative loop connections, usually brown and blue respectively.

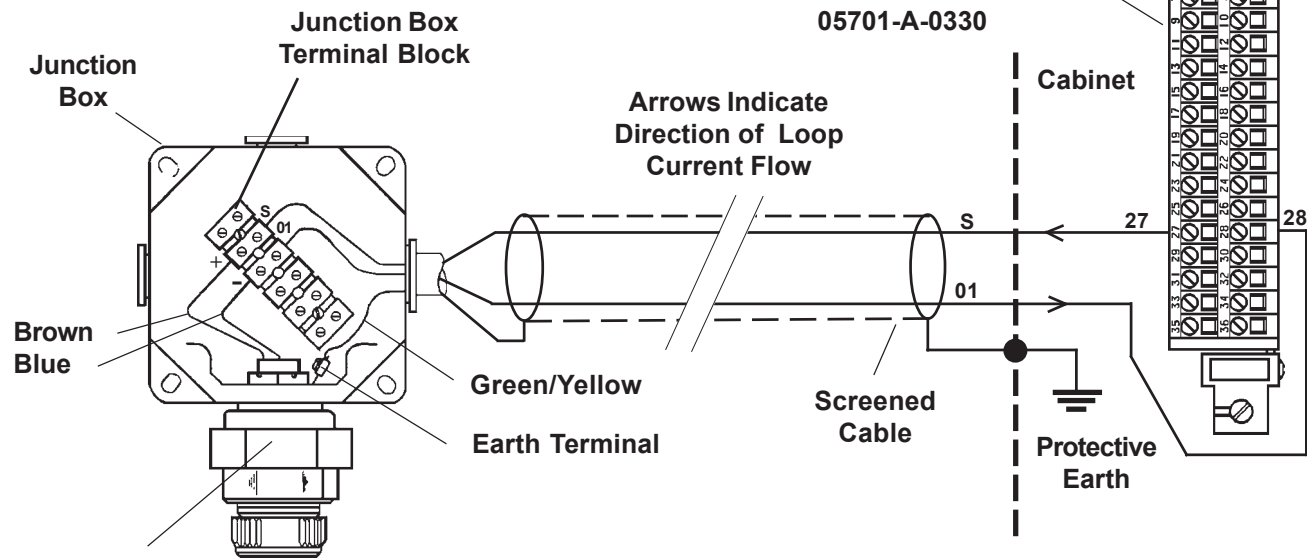
At the System 57 end of the field cable the two sensor wires should each be connected to one of either the S, 01 or NS terminals on the Field Interface or Relay Card that is attached to the required Single Channel Display Card. The two terminals used will vary depending upon whether the location of the measuring resistance is in the loop supply or return paths. Link options must also be set correctly on the 4 - 20mA Sensor Drive Module (see Section 12.3).

The sensor cable screen should be connected to the system earth. This can be achieved at the Field Interface/Relay Card using the GROUND terminal or where the cable enters the cabinet using a metal cable gland, or by other suitable means.

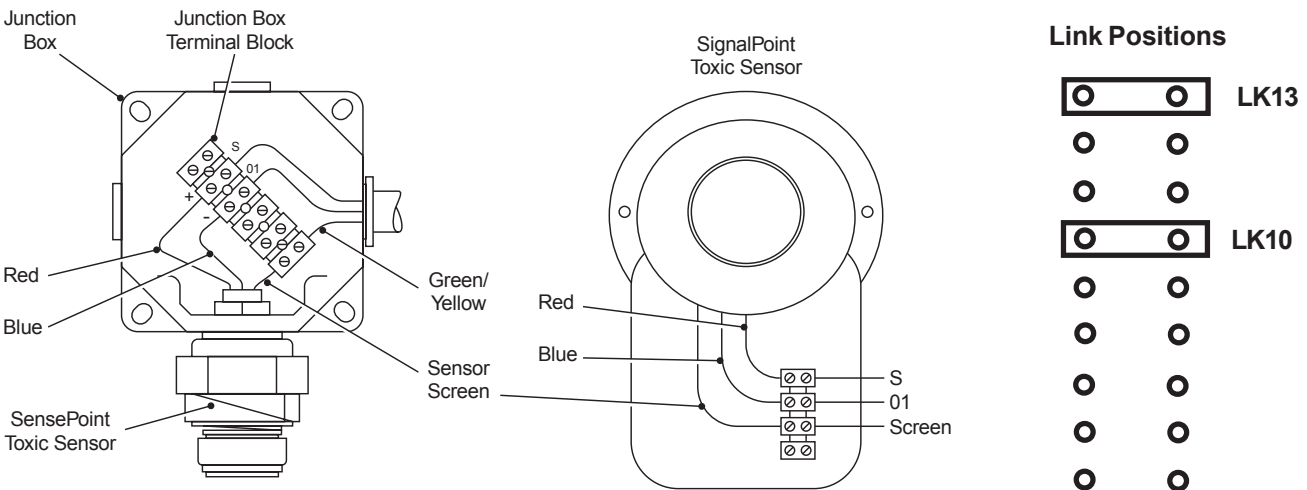
CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

Relay/Field Interface
Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330



811, 911 ECC, S2000
Toxic Sensor

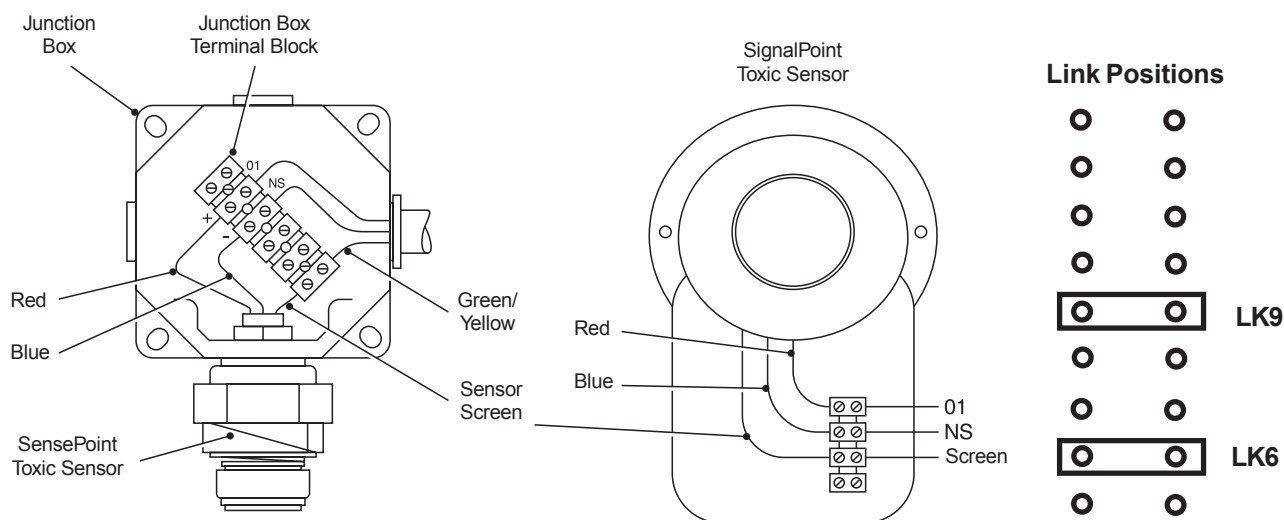
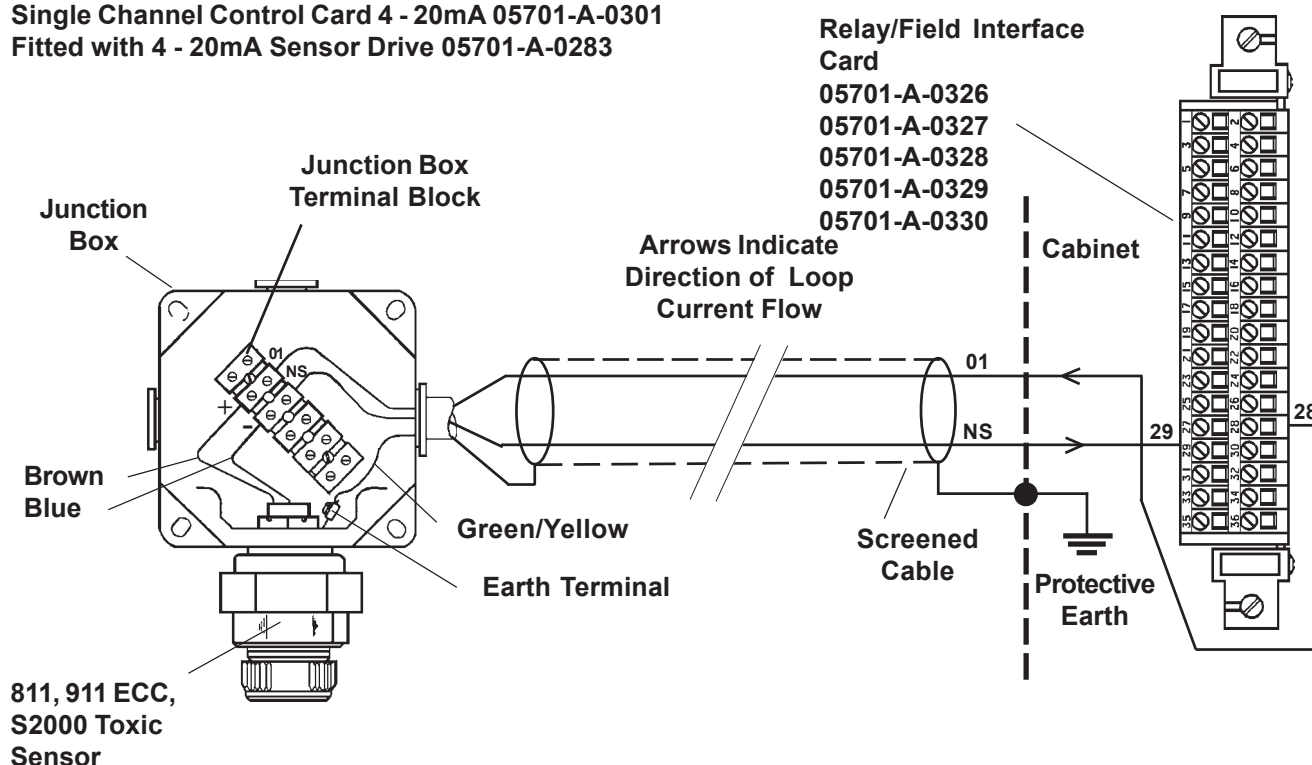


Note: Where a sensor is earthed locally, either to the Earth Stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e., at the sensor or at the Interface/Relay Card.

Loop Powered Sensor (Measuring Resistance in Supply Return)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283



Note: Where a sensor is earthed locally, either to the Earth Stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e., at the sensor or at the Interface/Relay Card.

Loop Powered Sensor (Measuring Resistance in Supply Positive Line)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

13.4 4 - 20mA Transmitter Connections



CAUTION

The power provided by the Single Channel Control Card is derived from the dc input to the System 57 (18V to 32V). Check that the transmitter to be connected is compatible with the actual supply voltage used.

The maximum current that may be sourced from the field terminals of an individual Single Channel Control Card to power a field device is 500mA, however, the total current sourced from all the channels should not exceed the maximum backplane load current of 8A.

Transmitters powered from the Single Channel Control Card require either three or four wire connections and the sensor documentation will indicate the 0V and +24V power connections and the positive and negative loop connections.

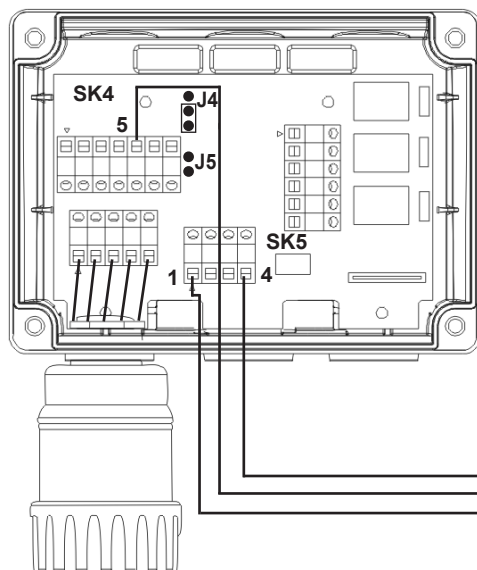
At the System 57 end of the field cable the sensor wires should be connected to the S, 01, NS, 0V or 24V terminals on the Field Interface or Relay Card that is attached to the required Single Channel Display Card. The exact terminals used vary depending upon whether three or four wire topology is used, and the requirement for loop current source or sink configuration. Link options must also be set correctly on the 4-20mA Sensor Drive Module (see Section 12.3).

The sensor cable screen should be connected to the system earth at the Field Interface/Relay Card, using the GROUND terminal, or where the cable enters the cabinet using a metal cable gland, or by other suitable means.

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

Opus/Lifeline II Transmitter



Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330

Arrows Indicate
Direction of Loop
Current Flow

Screen to
cable gland

Screened Cable

Cabinet

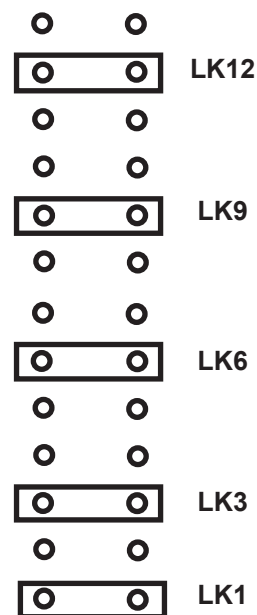
S

01

NS

Protective
Earth

Link Positions



Note: Where the sensor is earthed locally, either to the stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e. the sensor or at the relay/interface card.

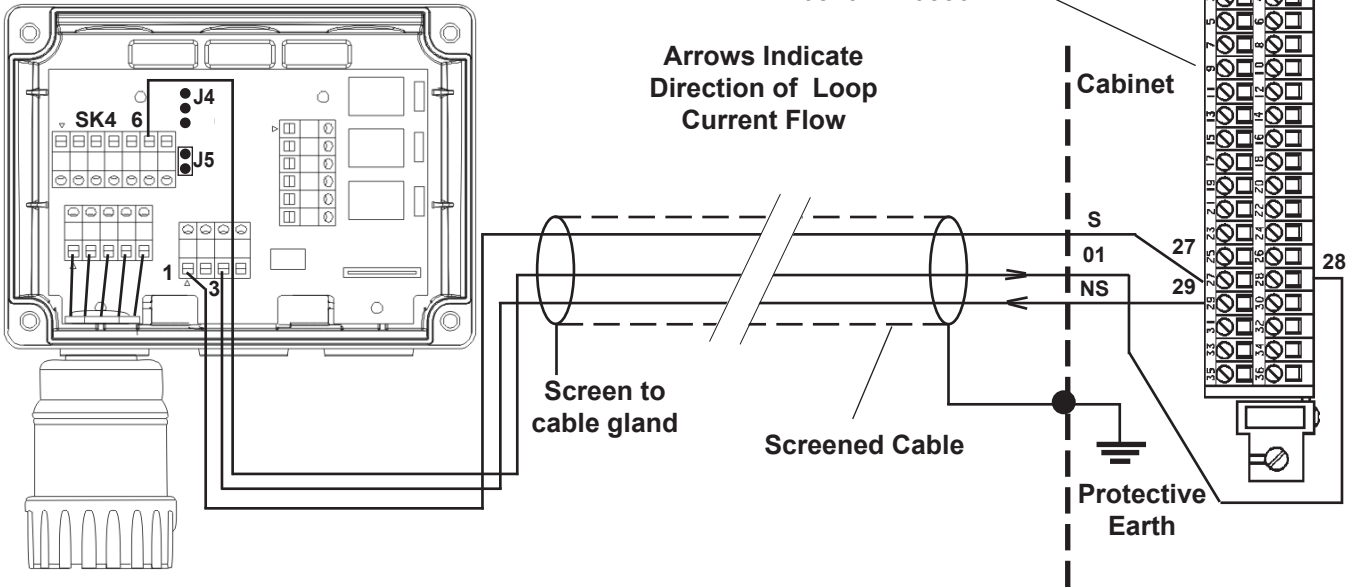
Three Wire Control Card Current Source, Transmitter Current Sink Connection for Opus/Lifeline II (Signal Returned to Regulated 23V Supply)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

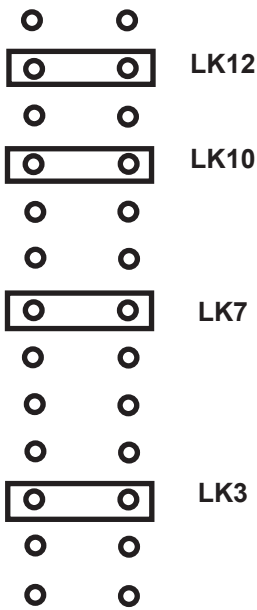
Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

Opus/Lifeline II Transmitter

Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330



Link Positions



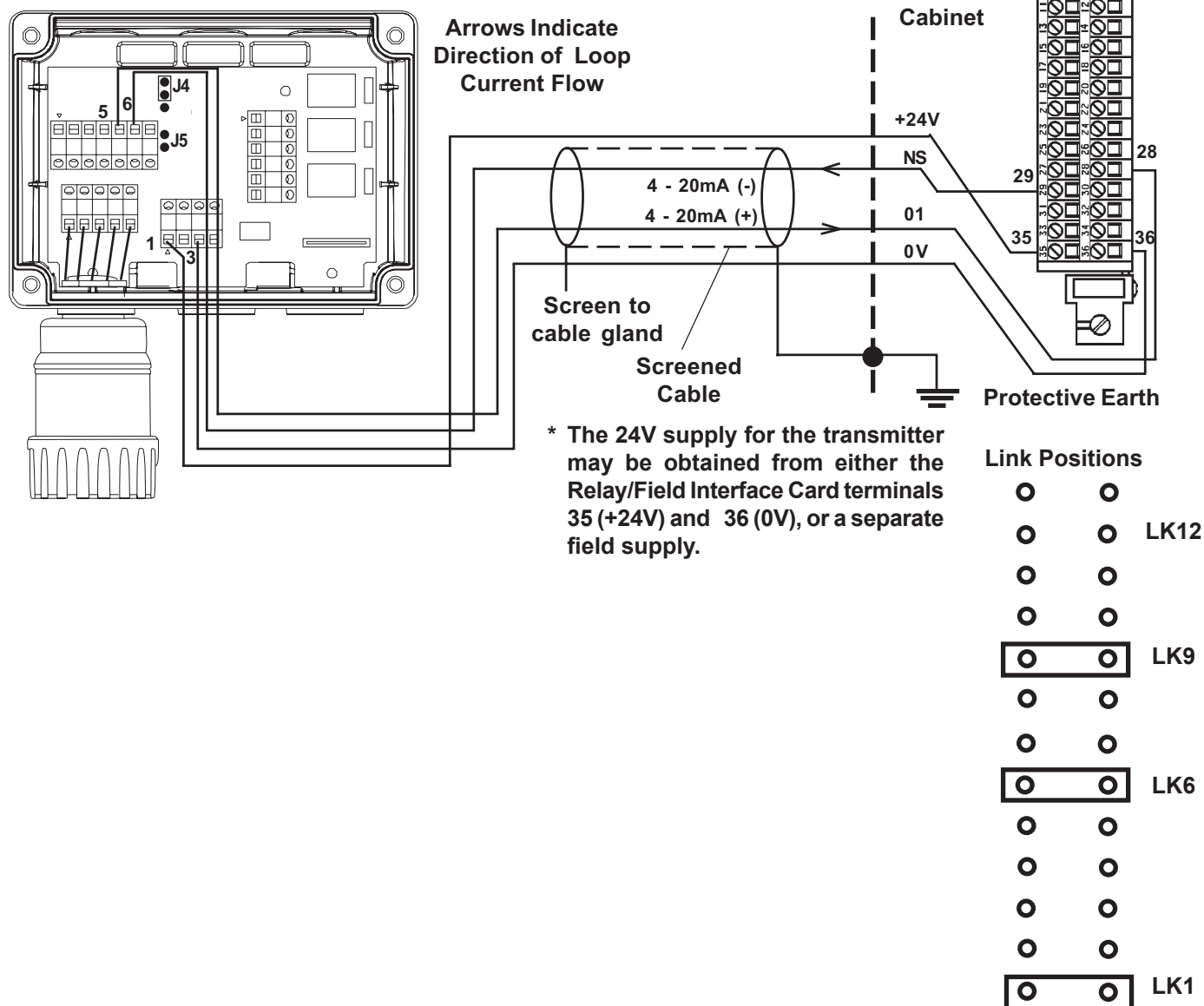
Note: Where the sensor is earthed locally, either to the stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e. the sensor or at the relay/interface card.

Three Wire Control Card Current Sink, Transmitter Current Source Connection for Opus/Lifeline II (Signal Returned to 0V)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330



Note: Where the sensor is earthed locally, either to the stud or through the sensor casing or mounting, to avoid earth loops the screen sheath of the cable should only be connected at one end, i.e. the sensor or at the relay/interface card.

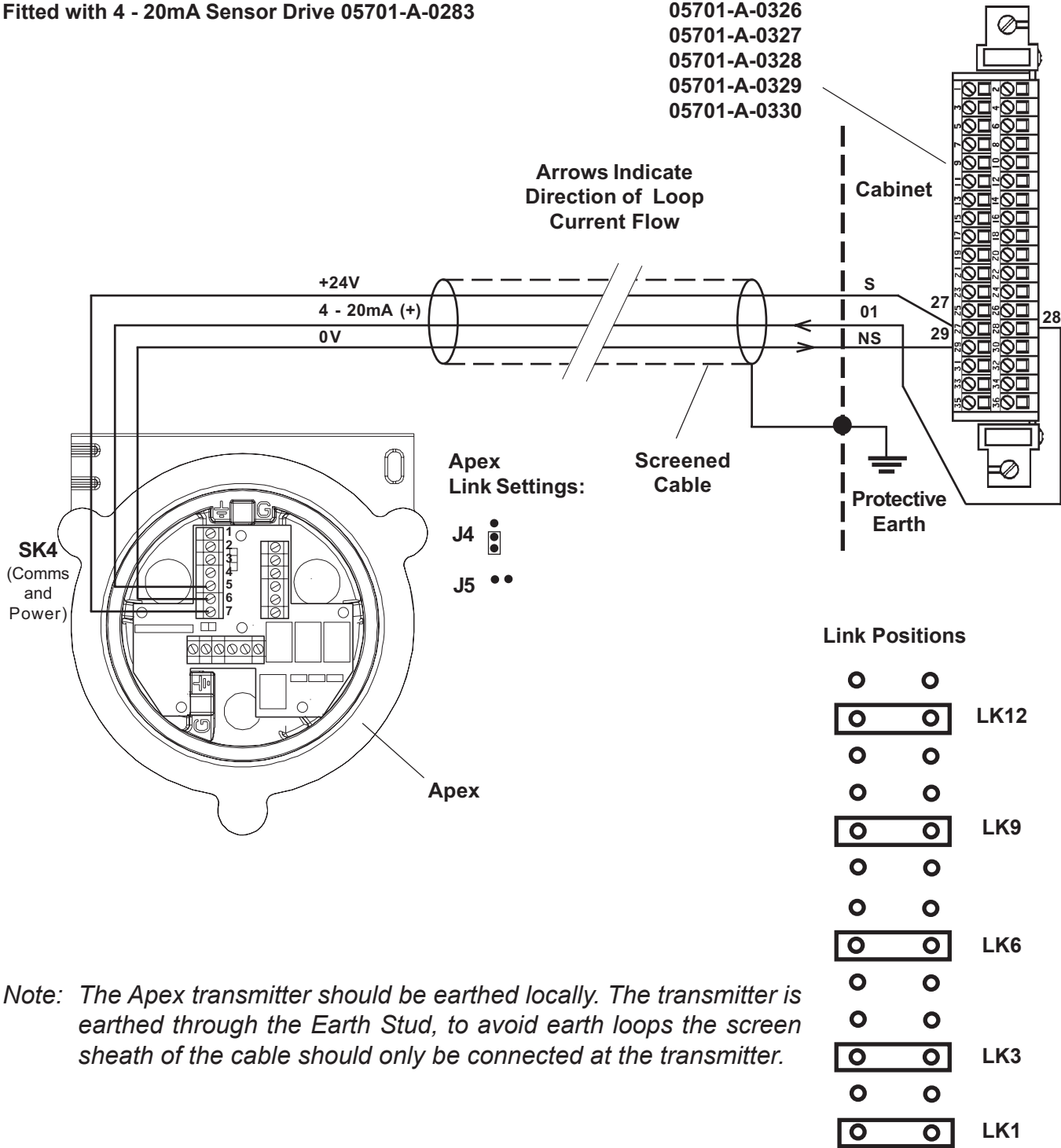
Opus/Lifeline II Four Wire Isolated Signal, Transmitter Connection for Opus/Lifeline II

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Apex Transmitter

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

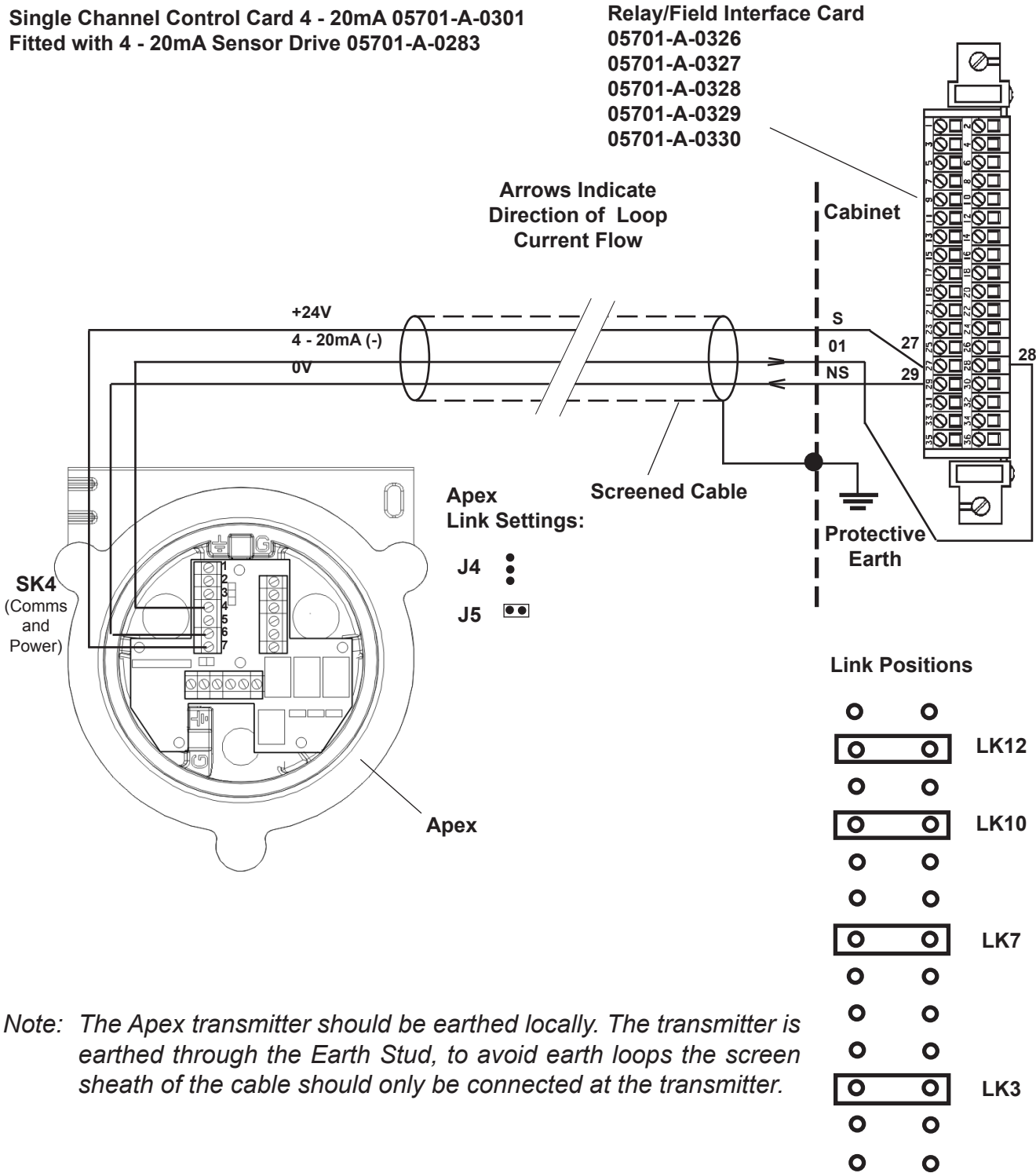
Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330



Three Wire Control Card Current Source, Transmitter Current Sink Connection for Apex (Signal Returned to Regulated 23V Supply)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Apex Transmitter



Note: The Apex transmitter should be earthed locally. The transmitter is earthed through the Earth Stud, to avoid earth loops the screen sheath of the cable should only be connected at the transmitter.

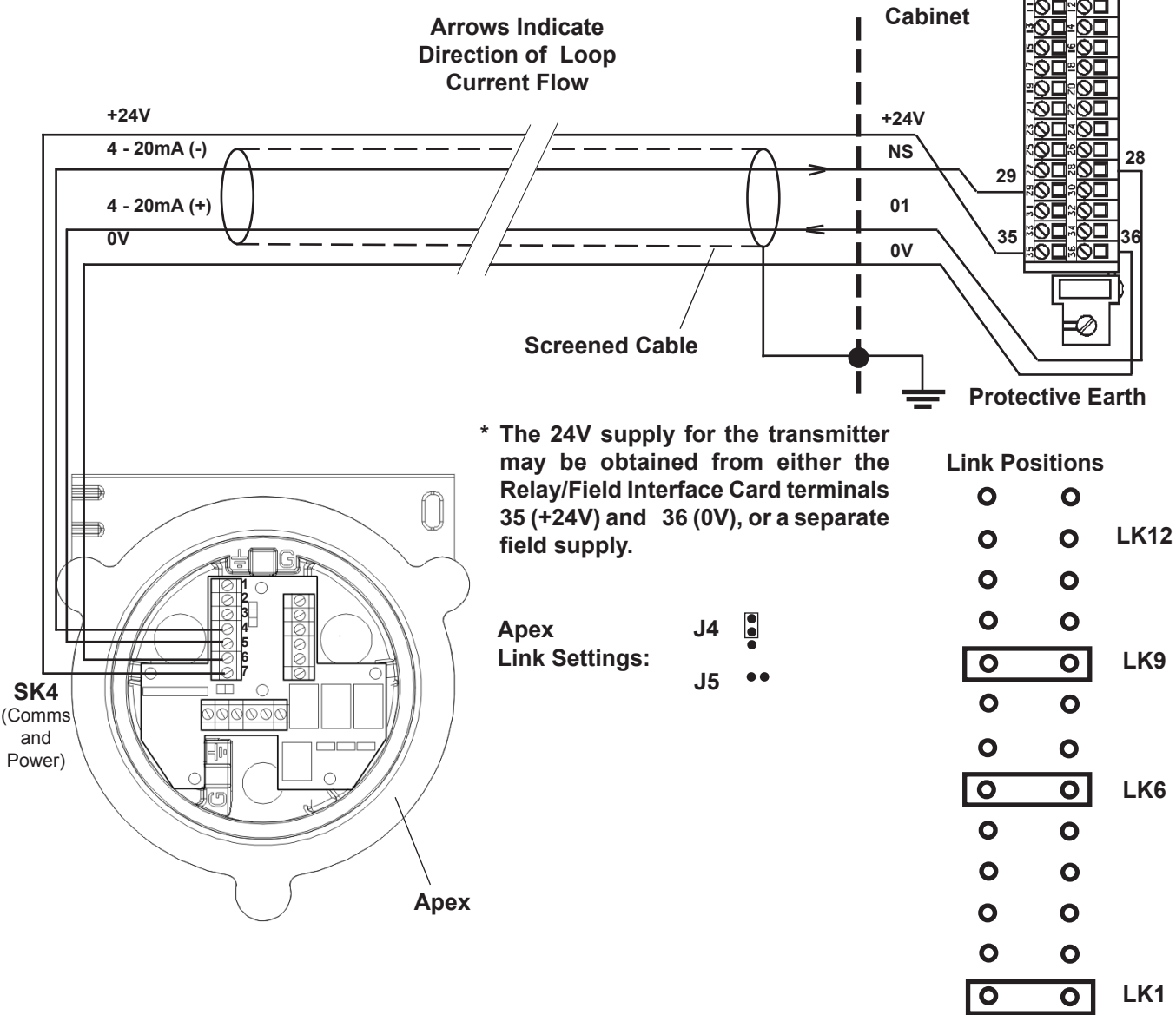
Three Wire Control Card Current Sink, Transmitter Current Source Connection for Apex (Signal Returned to 0V)

CHAPTER 4 - INSTALLATION INSTRUCTIONS

Single Channel Control Card 4 - 20mA 05701-A-0301
Fitted with 4 - 20mA Sensor Drive 05701-A-0283

Apex Transmitter

Relay/Field Interface Card
05701-A-0326
05701-A-0327
05701-A-0328
05701-A-0329
05701-A-0330



Note: The Apex transmitter should be earthed locally. The transmitter is earthed through the Earth Stud, to avoid earth loops the screen sheath of the cable should only be connected at the transmitter.

Four Wire Isolated Signal Input, Transmitter Connection for Apex