



## AS Interface Bus

The Actuator Sensor Interface card allows easy digital serial communication for your sensors and actuators, allowing your actuators to be controlled and monitored when they are in the field, via a single 2 wire cable.

AS interface devices are used to make up control systems based on a two-wire communication cable known as a bus. These can be controlled or monitored by means of a digital signal sent via the bus to and from a "master" device (which can be a computer or a PLC).

The slave devices will always function in response to commands sent by the master device, either to actuate or to return a message reporting the value of a sensed variable, or both. The AS Interface specification allows 31 or fewer slave devices to be powered by a DC voltage fed into the same two wire cable used as the communication bus, with allowed power consumption adequate to drive the slave plus a standard pneumatic solenoid valve.

An AS Interface bus can be used as the final field link in a more complex hierarchy of devices making up a large plant-wide control system. Actuators and sensors must often be installed in unprotected environments where conditions can be demanding; the AS Interface bus can be used as the link between these field devices and the "indoor" equipment making up the upper part of the control system.

The AS Interface bus is designed for on/off control and monitoring. It is a good choice when a simple, economical, reliable and robust solution is required for controlling and monitoring a series of actuators and sensors in a process control or machine application.

## The Kinetrol AS Interface Card

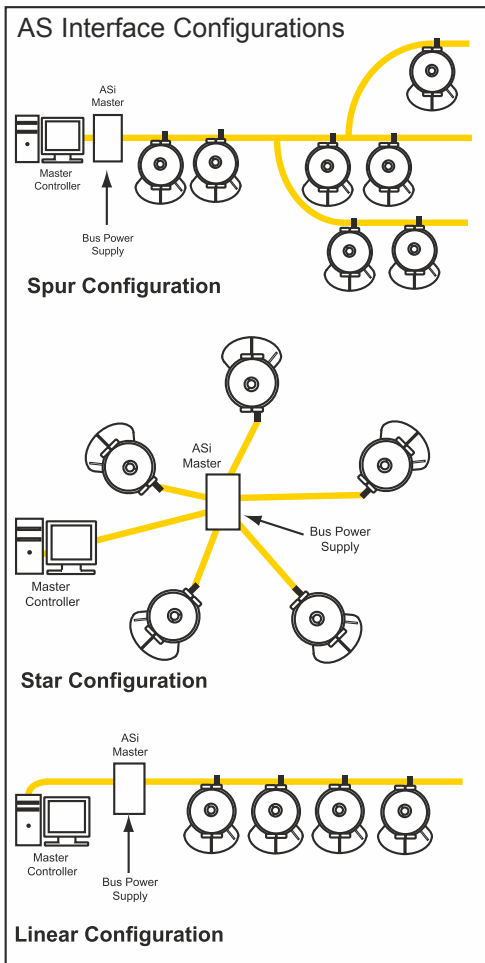
The Kinetrol AS Interface card is fitted inside the Kinetrol Universal Limit Switch box, thus combining the industrial quality robustness of the box with the advantages of digital serial communication.

The AS interface bus cable can be routed in through the conduit entries and connected to the internal terminal blocks. Alternatively, an M12 connector plug facing outwards from the conduit entry can be supplied to allow quick connection from M12 sockets or with clip on adaptations for ribbon type yellow AS interface cables.

## AS Interface Card Features

- AS interface 2.1 compatibility
- Up to 31 units with solenoid valve on-off control, powered and controlled via a single, two core cable
- Up to 62 units (using extended addressing)
- All metal robust industrial-quality limit switch box, direct mounted on a Kinetrol actuator
- 2 on/off outputs per unit
- 4 on/off inputs per unit
- Reads mechanical switches or inductive sensors
- Retrofittable to standard Kinetrol Universal Limit Switch Box
- Can also be supplied in an explosion proof housing and with European, North American and Worldwide approvals
- LED external indicator option
- Up to 31 24V 2.5W solenoid valves can be connected to bus with no separate power supply
- M12 connector plug option available for instant bus connection
- Cable clamping connector block for yellow ribbon-type AS interface cable available with M12 socket to fit onto plug option
- Output short circuit protection built in
- Operating temperature range -20°C to +80°C (-40°C option available - contact Kinetrol)





## AS Interface 2.1 Specification

- Master - Slave protocol
- Up to 31 Slaves per Master
- Each Slave has its own unique address (set by user)
- All Slaves can be scanned every 5 milliseconds
- Baud Rate - 197 Kbits/second
- Slaves may be added anywhere in the bus
- Slaves may be parallel connected on the bus, using star or spur configurations
- Up to 124 inputs per bus
- Up to 124 outputs per bus, 62 using the Kinetrol device
- 26.5 to 31.5 Vdc, 8 A max power supply
- 100 m (325ft) maximum cable length (repeaters may extend network distance)
- Untwisted, unshielded, 2-wire (1.5mm<sup>2</sup>) cable can be used

## AS Interface Extended Addressing

Kinetrol's AS Interface circuit is a slave device to allow 32 devices (usually 31 slaves plus an AS Interface master device) to be powered and controlled via a 2-wire bus cable, with full capability to energise one solenoid on every unit all at the same time. This is the standard (Option code B).

The AS Interface 2.1 specification also allows for an extended address option, whereby 62 addresses can be connected and powered via one bus cable. The specified limits on device capacitance however, mean that if the full extended-address compliment of slaves all had standard solenoid valves connected, the bus limit would be exceeded.

Kinetrol offer these options to allow use of extended addressing:

### 1. (Option Code C)

AS Interface circuit with extended addressing enabled and outputs disabled, to read limit switch sensors only. If a solenoid is connected it will not function.

### 2. (Option Code D)

AS Interface circuit with extended addressing and outputs enabled (one solenoid per interface card), plus added isolating relay option fitted to outputs, to allow up to 31 solenoids to be energised simultaneously even from the bus, though up to 60 slave units may be connected to the bus. This requires the user's control system to include a pre-programmed limit on the maximum number of solenoids to be energised. If the system instructs too many units to switch on solenoids, they will obey, and the bus capacitance limit will be exceeded – thus this option must be at the user's risk with regard to this issue.

### 3. (Option Code E)

AS Interface circuit with extended addressing and outputs enabled (one solenoid per interface card), plus added relay options fitted to outputs to allow solenoid valves to be powered by a supply separate from the AS Interface bus. This option requires a separate 24V DC power supply to each actuator, and allows up to 60 slave units to energise their solenoids simultaneously.

To order the Kinetrol AS Interface card refer to codes for Universal Limit Switch Box or Explosion Proof Limit Switch Box on pages 10 and 12.

For more information  
see KF-496

