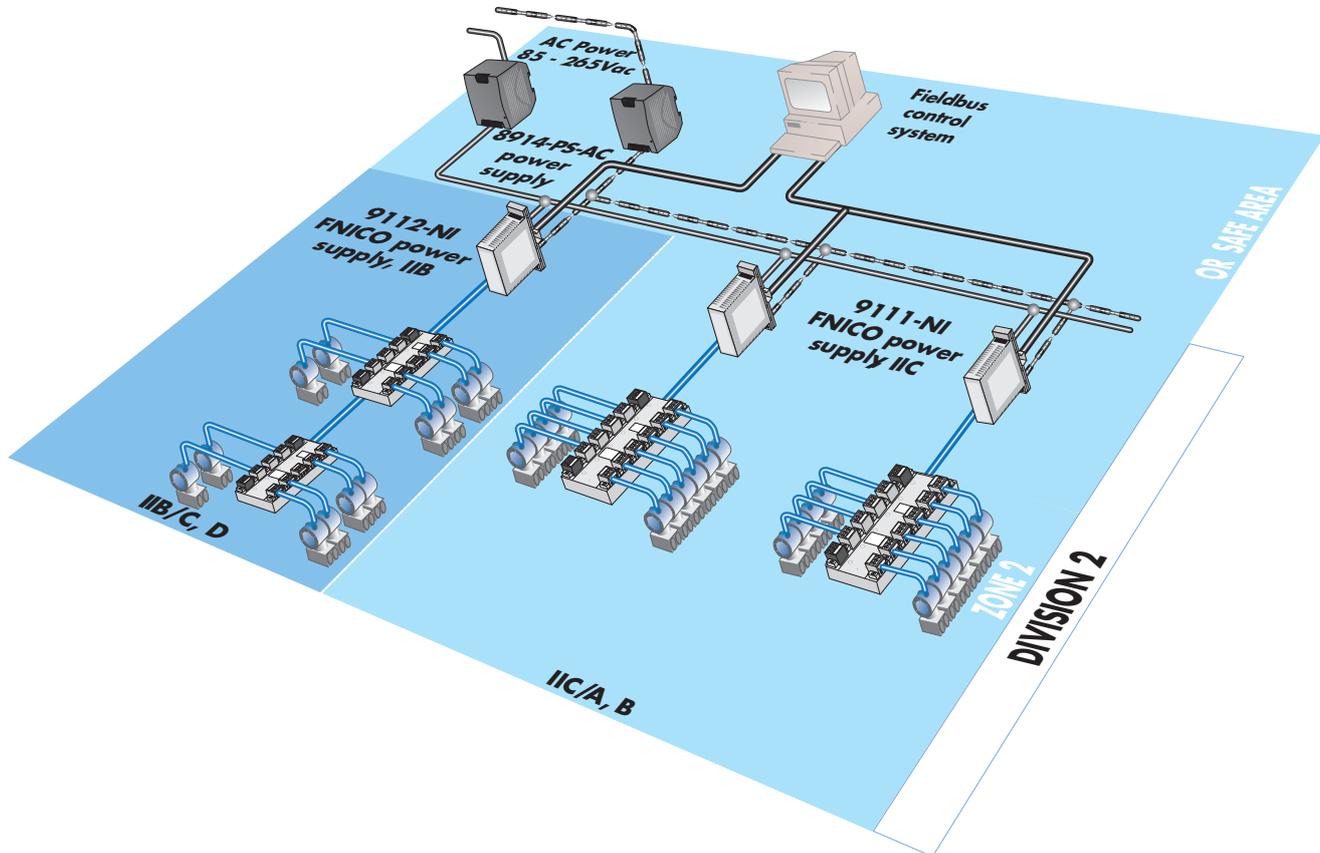


# 911X-NI FNICO POWER SUPPLIES



## OVERVIEW

The 9111-NI and 9112-NI FNICO fieldbus power supplies repeat the fieldbus signal from a host control system to a non-incendive or 'energy-limited' (Ex nL) fieldbus for connection to field devices in a Zone 2 or Division 2 hazardous area. Complying with the requirements for FNICO as defined in IEC 60079-27/CDV: 2004, they transfer all the benefits of FISCO to Zone 2 and Division 2 fieldbus circuits, while taking advantage of the relaxed safety factors and installation requirements for non-incendive wiring. The 9111-NI delivers up to 180mA, powering as many as 12 x 15mA field devices in Gas Group IIC (North American Groups A-D) environments, and the 9122-IS delivers 320mA for 16 or more devices in Group IIB (Groups C, D).

### What is FNICO?

FNICO is the Fieldbus Non-Incendive Concept. FNICO builds on the experimental work carried out for FISCO (Fieldbus Intrinsically Safe Concept), by applying the same principles to non-incendive fieldbus circuits in Zone 2 and Division 2 hazardous areas. FNICO networks may be live-worked in the hazardous area without the need for gas clearance procedures, and support even greater numbers of field devices than FISCO. To assemble a FNICO fieldbus system, the power

supply, field devices, cables and wiring components need to comply with FNICO design rules. A wide choice of components is available since any intrinsically safe 'Entity' or FISCO certified devices and most non-incendive or Ex nL certified devices can be used.

### What are the key benefits of FNICO?

FNICO combines the best of the emerging explosion protection technologies and is the ideal choice for fieldbus networks in Zone 2 and Division 2:

- ▶ Flexible, low cost alternative to flameproof/explosionproof technique
- ▶ Live-workable field network, just like intrinsic safety
- ▶ Relaxed installation requirements
- ▶ Simple safety documentation - just a list of devices

### Is FNICO internationally recognised?

FNICO fieldbus systems are defined in IEC draft standard 60079-27/CDV: 2004. Full status as an IEC standard will follow. FNICO takes advantage of established international wiring practice for non-incendive and Ex nL circuits.



### What are the requirements for field cables in a FNICO system?

To install a FNICO fieldbus system, the cable must comply with the following parameters:

Loop resistance, R <sub>c</sub> :	15 to 150ohms/km
Loop inductance, L <sub>c</sub> :	0.4 to 1mH/km
Capacitance, C <sub>c</sub> :	45 to 200nF/km
Maximum length of each trunk cable:	1km in IIC/Groups A-D; 5km in IIB/Groups C, D (Note 1)
Maximum length of each spur cable:	60m

Note 1: Limited to 1.9km by FF-816



### What fieldbus devices can I use in a FNICO system?

Fieldbus devices having any of the following approvals may be used in a FNICO system:

- 'Entity' certified intrinsically safe
- FISCO certified intrinsically safe
- Non-incendive approved with non-incendive field wiring parameters
- Ex nL

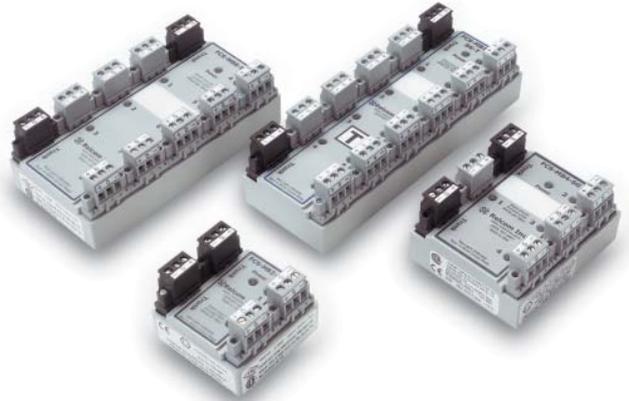
### What allowance do I need to make for the fieldbus signal when designing a segment?

When designing a segment with an MTL FNICO power supply no allowance needs to be made for the fieldbus signal. As the fieldbus signal is symmetrical, the terminators act as current source/sink for the fieldbus signal, so no extra current is drawn from the power supply.



### What allowance do I need to make for field device inrush current when designing a segment?

When designing a segment with an MTL FNICO power supply, no allowance needs to be made for inrush current. MTL FNICO power supplies have a soft start feature to ensure that a fully loaded fieldbus segment will start up. The power supply current limit is 20mA higher than the specified design current, allowing a device to be re-connected to an active segment without the risk that other devices on the bus will reset.



### Can I use SpurGuard™ Megablocks with an MTL FNICO power supply?

Yes, The FCS-MBx-SG (non-incendive/Ex nL) and F240-F259 (intrinsically safe) ranges of Relcom SpurGuard™ Megablocks are ideal for providing wiring connections on a FNICO segment.

