

# SP5 Phase Shifter and Metal Loss Corrector

The SP5 is designed for use with the ILD122, ILD252 or ILD9 loop driver and is a combination of a phase shift unit and a metal loss corrector in one case.

The phase shift unit generates two outputs with 90 phase shift between from a single input. This is used in special designs by Ampetronic, mainly to create low-spill loop systems. The metal loss corrector provides an adjustable correction variable between 0dB to 3dB per octave over the range 100Hz to 5kHz. This is to compensate for the frequency-dependent loss of magnetic field in the metal of the building. At all settings, the unit has unity gain at 1kHz and rolls off at 18dB per octave above 6kHz. Note that the loss at 1 kHz in the structure must be made up with additional current from the loop drivers.

Installation should be in a location away from extremes of temperature and humidity. The use of the SP5 for purposes or modes different from those indicated will nullify any warranty and performance specification.

## 1. Mounting.

The SP5 can be 19" rack mounted using the RM-1U tray (other units may be mounted on the tray as well). Alternative positions are to locate the SP5 loose in the equipment cabinet with the loop drivers.

## 2. Connections.

Connect the SP5 to the ILD122, ILD252 or ILD9 loop drivers as shown on the drawing using the cables supplied.

Do not extend the cables supplied with the SP5, otherwise interference may be introduced into the system.

## 3. Setup.

The following equipment will be required to install the SP5:

- A loop receiver such as the Ampetronic ILR2. (The SP5 *cannot* be set up by listening to the 'headphone monitor' socket on the loop driver)
- A known good signal source (tape or CD is best), connected to the amplifier system line level input.

Before configuring the metal loss corrector, install the induction loop system and connect the SP5. Set the control to '0dB'. N.B. Ensure that if a Metal Loss Corrector exists on the associated Loop Amplifier(s), that it is set to '0dB' and is not adjusted further.

Now test the loop system as normal. At this stage the field strength at 1kHz must be acceptable although the frequency response may be poor.

Using a loop receiver, proceed as follows: starting with the control at minimum boost (anticlockwise), listen to the loop signal and adjust the control gradually until the signal

sounds natural and clear. Do not adjust further than necessary; the signal will sound tinny and harsh if too much boost is applied.

If an audio analyser and an Ampetronic CMR2 measuring receiver are available, then use these. The response should be as flat as possible up to 5kHz. This should only be done with the loop current at least 9 dB below the normal operating current.

## 4. Limitations and system considerations.

The SP5 will correct frequency response but will not correct amplitude loss. The loss due to metal in loop systems increases with frequency, and so significant additional amplifier power may be required to achieve adequate signal level. Consult Ampetronic Ltd if further information is required about this aspect of system design.

**Dimensions:** Width:71mm Height:44mm Depth:118mm

**Case:** 1/6 rack width, can be installed in RM-1U rackmount.

**Weight:** 336g

## Warranty Information

This product carries a 5 year parts and labour warranty which could be invalidated if these instructions are not followed correctly, or the unit is tampered with in any way.

The 5 year warranty is dated from the time the equipment leaves Ampetronic and NOT when it is installed.

The SP5 is designed and manufactured in England by Ampetronic Ltd.

## DECLARATION OF CONFORMITY

Manufacturer: Ampetronic Ltd.  
Address: Northern Road, Newark,  
Nottinghamshire NG24 2ET  
United Kingdom.

Declares that the product:  
Description: Phase Shift Unit / Metal Loss Corrector  
Type Name: SP5

Conforms to the following Directive(s) and Norm(s):  
Directive 89/336/EEC  
EMC: EN55103-1 (1997)  
EN55103-2 (1997)  
Directive 73/23/EEC  
Safety: EN60065 (1995)

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