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DEEP SEA ELECTRONICS PLC

DSE123 Load Share Lines Interface



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1 INTRODUCTION

The advent of electronic load share controllers has in some cases meant that existing control systems require expensive updates if additional generating sets are added into the system. This is because many of the 'newer' controllers utilise proprietary communication links rather than the traditional analogue load share lines (often called Parallel Lines) used in existing systems.

The DSE 5510 load sharing controller utilises it's MultiSet Communications (M.S.C.) link to enable load sharing between other 5510 equipped generators as well as providing other advanced functionality not available with load share lines.

The P123 Load Share Lines Interface is designed to allow the DSE 5510 load sharing controller to interface with analogue load share lines on existing systems without the need to replace the existing controls. As the MSC datalink is not used in applications of this type, enhanced features provided by this link are not available.

The P123 monitors the load share lines and converts this into digital information. This data is then used by the onboard microprocessor to allow the P123 to drive it's own load share lines and to communicate on the M.S.C. link with it's host DSE 5510 controller.

When DC power is applied to the module, the status LED will illuminate. If the P123 cannot communicate to the host 5510 controller using the M.S.C. link, the status LED begins flashing to indicate "Link Lost".



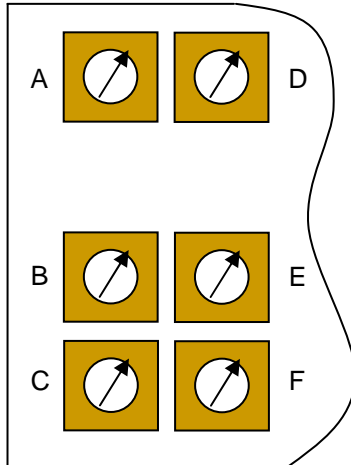
2 CONNECTION DESCRIPTION

Terminal	Recommended cable size	Description
1	1.0mm ²	Battery negative connection
2	1.0mm ²	Battery positive connection (8V-35V DC)
3	Twisted pair 120Ω screened communications cable	For connection to the MSC link terminal L of the host 55xx series controller
4	Twisted pair 120Ω screened communications cable	For connection to the MSC link terminal H of the host 55xx series controller
5		For connection to the MSC link screen of the host 55xx series controller
6	Screen	KW load share line Screen
7	1.0mm ²	KW load share line negative (-ve)
8	1.0mm ²	KW load share line positive (+ve)
9	-	Not connected
10	Screen	VAr share line Screen
11	1.0mm ²	VAr share line negative (-ve)
12	1.0mm ²	VAr share line positive (+ve)

3 SETTINGS

To allow connection to the load sharing lines of a wide variety of manufacturers, the P123 interface is selector switch configurable as detailed below.

Ensure the P123 selector switches are correctly positioned before connecting to the load share lines.



**Table of switch positions
for common types of load share lines**

Type	P123 switch positions					
	kW settings			VAr settings		
	A	B	C	D	E	F
Barber Colman	6	4	2	x	x	x
Deif*	0	1	8	0	1	8
Selco	2	2	8	x	x	x
Woodward	6	8	1	x	x	x

NOTE:- * Deif includes VAr share lines.

NOTE:- If you do not intend to connect to the VAr share lines, the setting of D,E and F is not important. A suggestion is to set them all to position 1.

NOTE:- Operation of the P123 cannot be determined if switch combinations other than those listed above are chosen.

NOTE:- When using analogue load sharing lines, some additional external equipment may be required to complete the synchronising and load sharing system.

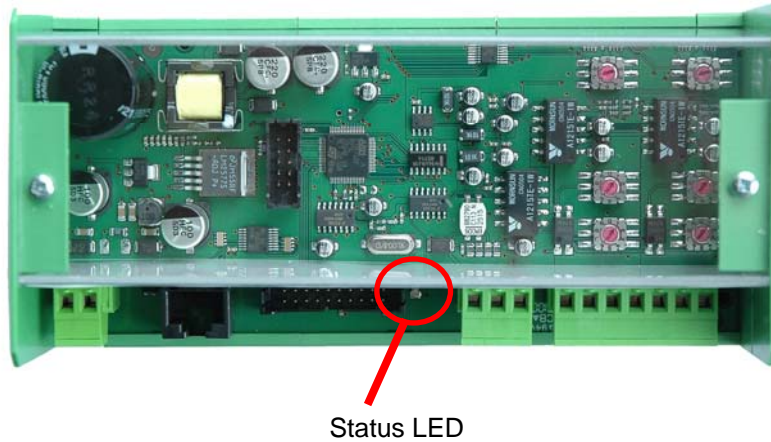
NOTE : Setting D E F to zero will disable the VAr share output. Do not set them to zero if you connect to the VAr share lines.

NOTE : If you have the DSE 5510 connected to the AVR for voltage matching, but don't intend to connect VAr share lines to the P123 device, ensure D=1, E=1, F=1.

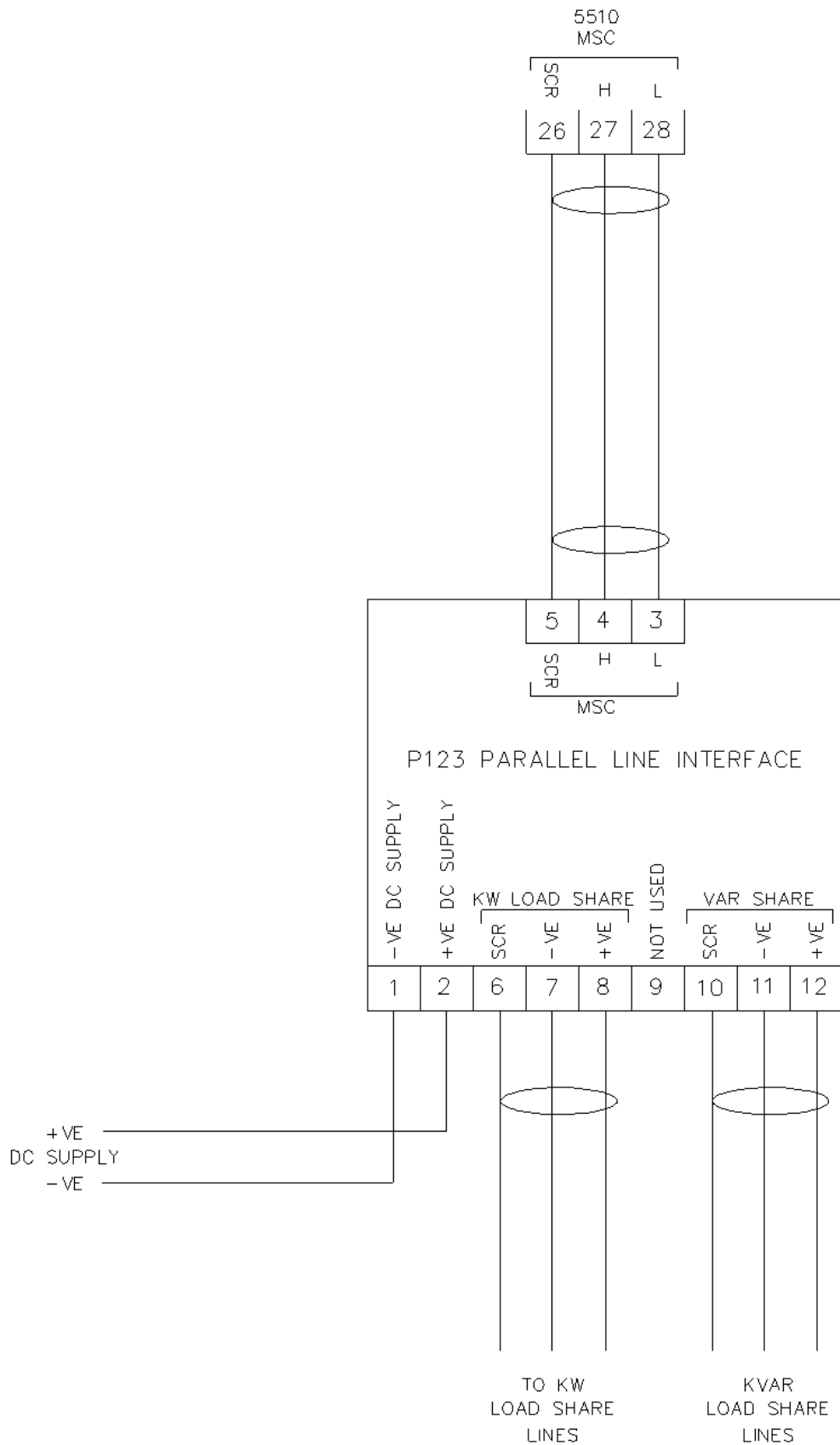
INDICATIONS

A single LED is provided to indicate the status of the P123 module.

Led operation	Description
Lit	Operation is normal.
Flashing	The module is powered up but no activity is detected on the MSC Link
Unlit	The module is not powered up.

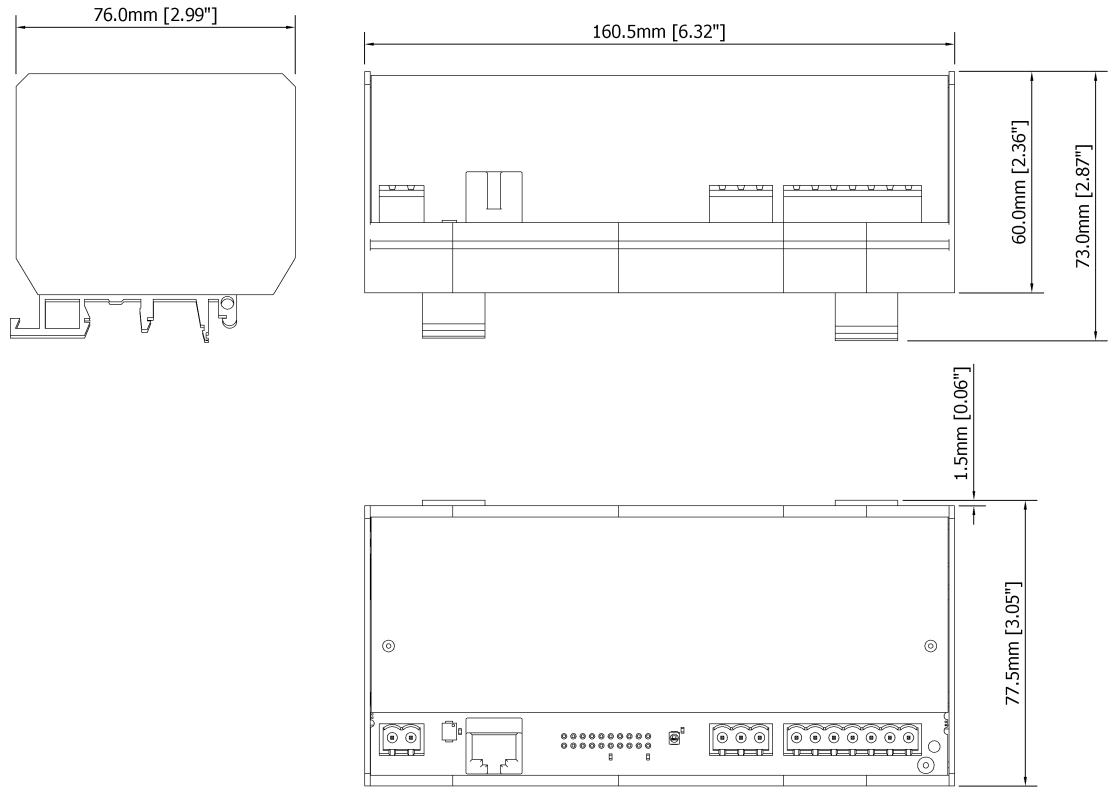


3.1 TYPICAL WIRING DIAGRAM



4 CASE DIMENSIONS

160.5mm x 77.5mm x 76mm
(6.32" x 3.05" x 2.99")



5 SPECIFICATION

DC Supply	8V - 35 DC continuous
Cranking dropouts	Able to survive 0 V for 50mS, providing supply was at least 10 V before dropout and supply recovers to 5V. <i>This is achieved without the need for internal batteries.</i>
Max. current (operating and standby)	150mA @ 12V DC, 80mA @ 24V DC.
Dimensions	160.5mm x 77.5mm x 76mm (6.32" x 3.05" x 2.99")
Mounting	DIN Rail mounted housing.
Electromagnetic compatibility	BS EN 50081-2 EMC Generic Emission Standard (Industrial) BS EN 50082-2 EMC Generic Immunity Standard (Industrial)
Electrical safety	BS EN 60950 Safety of I.T. equipment, including electrical business equipment.
Cold temperature	BS EN 60068-2-1 to -30 °C
Hot temperature	BS EN 60068-2-2 to +70°C
Humidity	BS2011-2-1 to 93% RH @ 40°C for 48 Hours
Vibration	BS EN60068-2-6 10 sweeps at 1 octave/minute in each of 3 major axes. 5Hz to 8Hz @ +/-7.5mm constant displacement 8Hz to 500Hz @ 2gn constant acceleration
Shock	BS EN 60068-2-27 3 Half sine shocks in each of 3 major axes 15gn amplitude, 11mS duration