IMPACT
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50kN & 100kN Load Frames
SL505 & SL512

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User Guide
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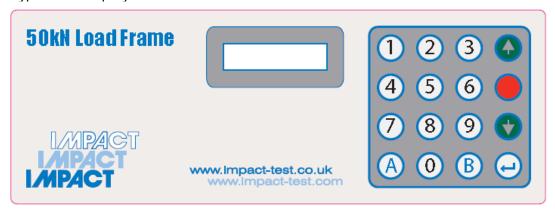
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Keypad and Display

Setting the Test Speed

Test Speeds are set using the numeric keypad. The position of the decimal point is fixed on the display, and as such does not need to be entered using the Numeric Keypad. To preset a speed of, for example 2.54000 mm/minute, enter 0254 on the numeric keypad. The speed will be entered on the bottom row of the display. After entering the preset speed, press the ENTER (ENT) key to set the Test Speed, which will now be shown on the top row of the display.

The A and B buttons on the keypad may be used to set any speed that is used on a regular basis, such as 1.2mm/minute for CBR or 50.8mm/minute for Marshall tests. To set the button speed enter the digits on the keypad as above and then press either button A or B to store that particular speed to that button.

Speeds in excess of 50.8mm/minute cannot be entered.

Keypad Operation

Press the UP key to start the ram moving upward at the test speed displayed. It will continue moving upward until the upper limit is reached or the STOP key is pressed.

To position the ram quickly, the UP key is held pressed. After 2 seconds, the ram speed will accelerate to 50mm/minute. When the Up key is released, the speed will revert to 5mm/minute.

Press the STOP key to halt ram travel at any time.

Press DOWN to return the ram. It will travel at the last set UP speed and continue until the Lower Limit is reached, or STOP is pressed. To change the DOWN speed, enter a new value using the keypad or press either the A or B button to use a pre-set speed.

Limit Switches

When the Upper limit on the ram assembly is encountered, the SL505 will stop and will then only permit a DOWN command.

When the Lower limit is encountered, the SL505 will stop and only an UP command is permitted.

Remote Address

SL505 includes a 9 way RS232 port to enable computer command and speed setting. All commands are in the form of ASCII characters.

To go UP send the ASCII character "1".

To go DOWN send the ASCII character "2"

To STOP send the ASCII character "0"

To read the Machine Status send ASCII "?" The SL505 will reply with a single byte to represent the status. Status may be read at any time.

ms bit 7   Ready   0= The motor drive is ready
6   Lower Limit   0= machine on the lower limit
5   Upper Limit   0= machine on the upper limit
4   Spare   always 0
3   Gate   0= motor running 1= motor stopped
2   Direction   0=Down or Stopped. 1= UP
1   Zero current   0 ie Motor is energized
ls bit   0   Microstep   1=1,000 steps/rev 0= 10,000 steps/rev

Speed Control by RS232

To set the Test Speed in the range 0.00001 to 9.99999 mm/min send the 7 ASCII character string "7 n n n n n" where n is a number 0 to 9.
For example "750342" would set a speed of 5.03421 mm/min

To set speeds in the range 10 to 99 mm/min send "8 n n n n n".
For example "8600000" sets a speed of 60.0000 mm/min

Speed may be changed while the machine is running. Note that a DOWN command via RS232 will return the machine at the current Test Speed.

Acknowledgement

UP, DOWN and STOP commands are acknowledged by echoing back the ASCII characters sent.
Speed commands echo the 6 ASCII speed numerals when the message is complete, ie after about 20 ms. If the message is incomplete after 50 ms the system times out and no reply is sent. If the 6 character message contains anything other than numerals the message is echoed but the speed remains unchanged
.
Connection is as follows:-   2   Data from AS904
3   Data to AS904
5   0 Volts

Specification

Controls	UP, DOWN, STOP, Upper Limit, Lower Limit all contact closures to OV.
Test Speed Range	0.00001 to 50.8mm/min
Return Speed (Down)	0.00001 to 50.8mm/min
Mechanical Ratio	12 turns per mm
Stepping Resolution	Speed 0.00001 to 0.99999mm/min 10,000/rev Speed 1.00000 to 99.9999mm/min 1,000/rev
Speed Accuracy	+/- 0.5% standard (+/- 30 ppm if required)
Stop condition	Motor energised to defeat back-drive
Speed Display	6 digit LCD with 17.8mm character height. Ranges –9.99999 and 99.9999
Power Requirement	5 volts at 100ma for the control circuits 35 volts at 2.5 Amps for the Motor

Maintenance

Under normal operation the SL505 does not require any special maintenance. All that is required is to ensure that the machine is stored under suitable conditions. Water and excessive humidity can cause oxidation and therefore damage to the machine. Take care that it is not accidentally damaged in any way.

Periodically clean the machine and oil parts that are not painted. Do not use solvents, which may damage the paint and made of synthetic materials.

If the machine is to be stored and not used for any length of time disconnect the electricity supply, oil the parts that are not painted and cover the machine to protect it from dust.

Should you experience any problems with your machine please contact your local distributor or Impact Test Equipment head office.