






Electric Safety Test (EST) unit troubleshooting

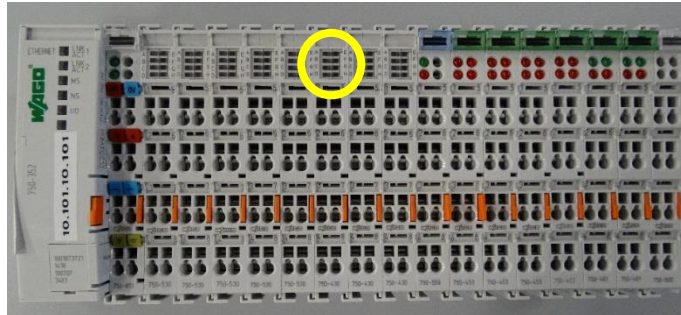
Following instructions are applicable to both **ABAG** (ATB-ECO) and **GWinstek** (GPT-9804) electric safety tests units.

Possible problem	Possible solution																								
Electric safety test unit problem	<p>1. If a EST Check Box is available (see the picture) you should first execute the associated test procedure (read more) to troubleshoot the single test.</p> 																								
Electrical problem	<p>2. Ensure electric safety test unit on-off button is turned on</p> <p>3. Check fuse/thermal switch inside the electrical cabinet of the test bench</p> <p>4. Check fuse on the backside of the electric safety tests unit</p> <p>5. Ensure clamp of the electrical safety test unit is connected to the appliance under test</p> <p>6. (when applicable) Ensure quick test cover is closed, see picture</p> 																								
Interlock problem	<p>7. Make sure an appliance is plugged to the designated electrical socket</p> <ul style="list-style-type: none"> ○ Open the diagnostic program of the test bench; ○ Under the “Digital Output” tab make sure AS Appliance Supply (sometimes BS) command is OFF (red); ○ Under “Digital Input” activate SELHT (it should turn to green); ○ Press and hold both interlock push buttons simultaneously (on the electrical DER2 box) and check that signal is received by Microplan diagnostic program (INTERLOCK indicator shall turn to green color). <div style="text-align: center;"> <table border="1" style="margin: auto;"> <thead> <tr> <th colspan="3">Digital Input</th> <th colspan="3">Digital Output</th> <th colspan="2">Analog output</th> </tr> </thead> <tbody> <tr> <td>STOP</td><td>PROCEED</td><td>REPEAT</td> <td>ABORT</td><td>HELP</td><td>INFO</td> <td>UP</td><td>DOWN</td> </tr> <tr> <td>PREV</td><td>NEXT</td><td>EMERGENCY</td> <td>BIP</td><td>INTERLOCK</td><td>DI13</td> <td>DI14</td><td>DI15</td> </tr> </tbody> </table>  </div> <p>8. If not, press simultaneously both interlock buttons and check if the led (yellow circled in the following picture) of the associated digital input module (usually 750-530 from Wago) turns to green color.</p>	Digital Input			Digital Output			Analog output		STOP	PROCEED	REPEAT	ABORT	HELP	INFO	UP	DOWN	PREV	NEXT	EMERGENCY	BIP	INTERLOCK	DI13	DI14	DI15
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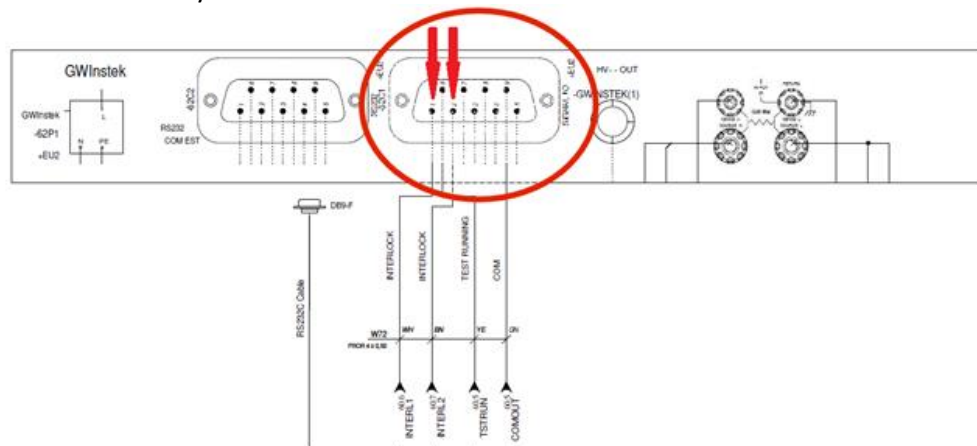


**Possible
problem**

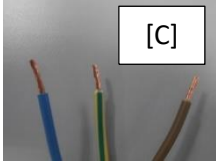
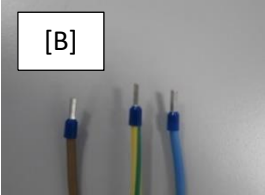
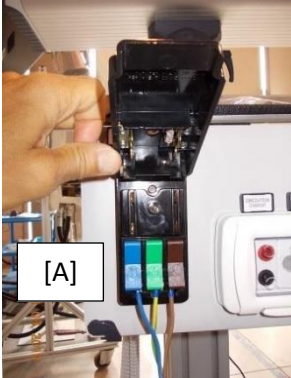


Possible solution



9. Inside the electrical cabinet check the integrity of the comparator fuse, replace if necessary;
10. With the door of the electrical cabinet open
 - Use the diagnostic program of the test bench, under “Digital Input” activate SELHT (it should turn to green);
 - Press simultaneously both interlock buttons and check that the led onboard the comparator changes its status;
11. Disconnect the DB9 connector of the EST GwInstek unit and check with a multimeter if there is continuity between pin1 and pin2 with both interlock buttons pressed. Be aware that the INTERLOCK circuit is under the control of the safety device, therefore the double INTERLOCK push buttons must be pressed together at the same time and kept pressed throughout the duration of the electric safety tests.





Possible problem	Possible solution
<p>3-wires cable not correctly inserted</p>	<p>12. (when applicable) Ensure the 3-wires of the appliance cable are correctly inserted into the socket [A]. Sometimes 3-wires end electric rods are too short [B] to make contact with the socket. As a trial remove the electric rods from the 3-wires cable and plug its own copper wires [C] directly into the socket.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>[C]</p> </div> <div style="text-align: center;">  <p>[B]</p> </div> <div style="text-align: center;">  <p>[A]</p> </div> </div>
<p>PC COM port damaged</p>	<p>13. Contact Microplan Support</p>
<p>GWinstek unit wrong settings (not for ABAG units)</p>	<p>14. Read the document GWinstek initial settings</p>
<p>Serial cable problem</p>	<p>15. Replace the serial cable. The PC COM port and the electric safety test unit COM port are both RS232 DB9 male. Therefore one of the following 4 configurations is allowed:</p> <ul style="list-style-type: none"> a) crossed cable RS232 DB9 female/female (<u>preferred</u>) b) crossed cable RS232 DB9 male/female + gender changer [A] c) not crossed cable RS232 DB9 female/female + null modem [B] d) not crossed cable RS232 DB9 male/female + gender changer [A] + null modem [B] (<u>recurrent</u>) <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>[A]</p> </div> <div style="text-align: center;">  <p>[B]</p> </div> </div>



Possible problem	Possible solution
<p>Serial communication problem</p>	<p>16. Inspect serial communication cable for possible damages. Consult Microplan Support before replacing it.</p> <p>17. Ensure serial cable is correctly inserted on both ends, the electric safety tests unit back side and the COM port of the PC of the test bench</p>
	<p>18. Ensure serial cable is connected to the <u>designated</u> COM port of the PC of the test bench; if a different COM port is used, the system will return an error message</p> <p>19. Reduce the baud rate of the serial communication (consult Microplan Support)</p> <p>20. Noise can disturb the serial communication therefore you should try to keep EST cables distant from those of serial communication, power supplies and signals. Check paths of these cables and ensure they are segregated accordingly.</p> <p>21. In case of Moxa optocoupler [A] check that its power supply plug is plugged in the socket [B] which is the nearest to the EST unit D-sub connector [C] and check that 5-12V are available on the same power supply cable.</p>
	<p>22. Temporarily remove the optocoupler. Be aware that the optocoupler protects the EST unit, therefore it has to be restored (or replaced) before releasing the test bench for ordinary use.</p>