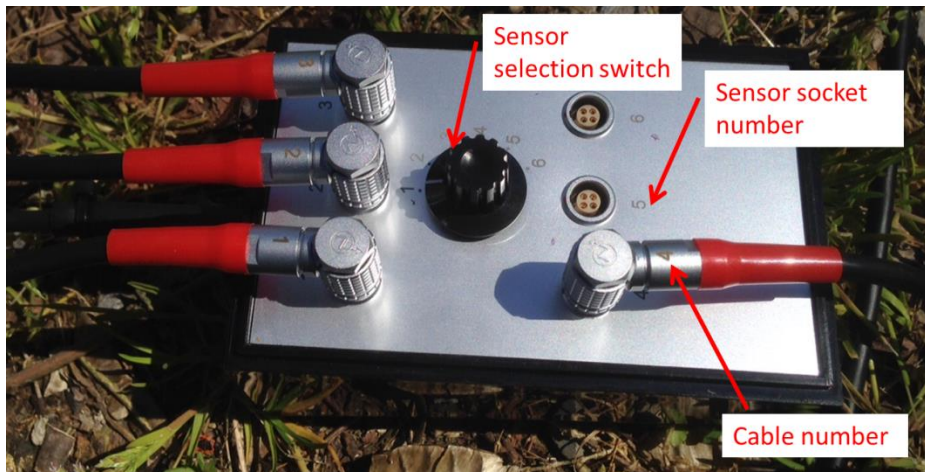


Short instruction manual for IML Microhammer using multiple sensors

System components:



- ① Sensor
- ② Sensor fixation screw
- ③ Electronic unit
- ④ USB interface
- ⑤ Connection socket for hammer and sensor
- ⑥ Impact cap fixation screw
- ⑦ Impact cap
- ⑧ Hammer



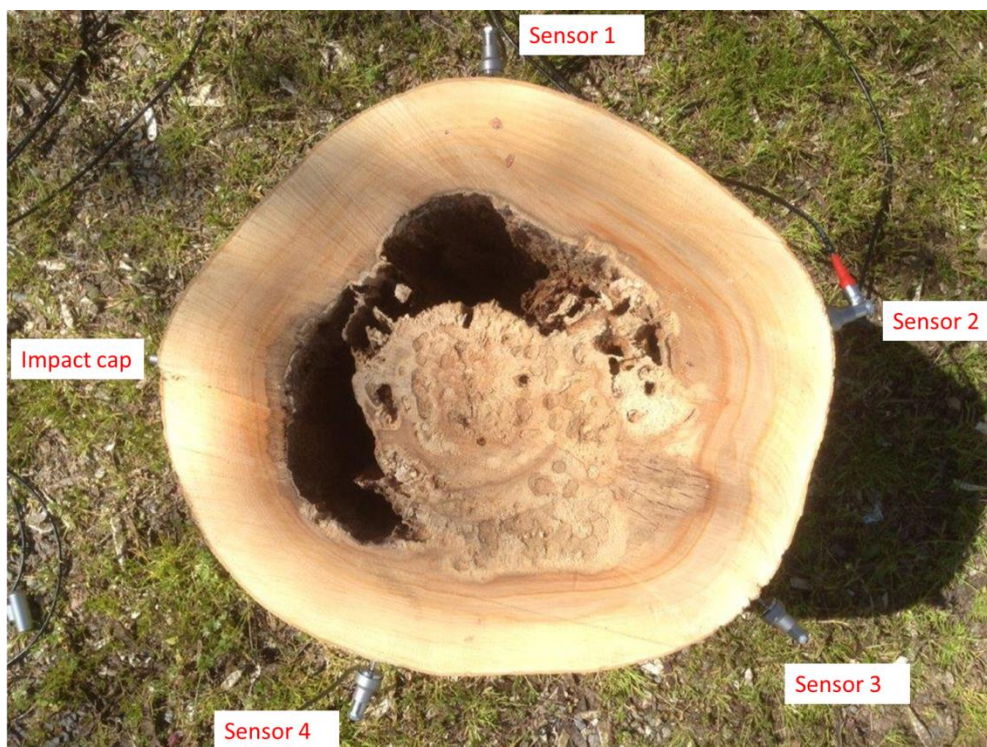
Relay box for connecting up to six sensors

Installation procedure on the tree:



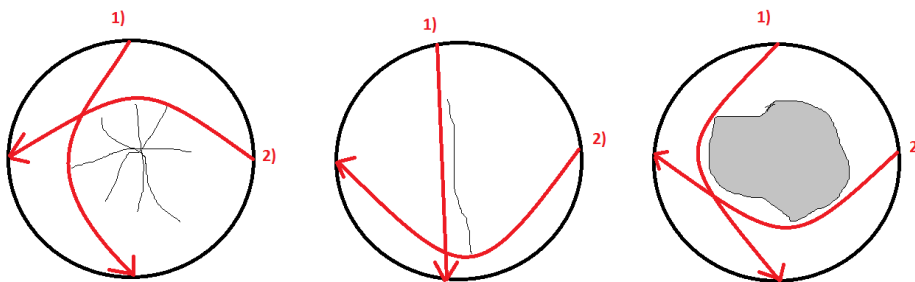
1. Fix sensor fixation screws to the tree at determined measurement points – (min. 1 cm into sapwood)
2. Attach sensor cables to sensor fixation screws
3. Connect sensor cables to relay box according to sensor socket number
4. Connect relay box with electronic unit (red color connection socket on electronic unit)
5. Connect hammer with electronic unit (black color connection socket on electronic unit)

Measurement process:



6. Select sensor on relay box with the sensor selection switch (f.e. sensor 1)
7. Insert distance into electronic unit between impact cap to sensor 1 using a caliper or measurement tape – if no diameter is entered measurement result is in microseconds
8. Start measurement and hit with hammer on impact cap (3 times)
9. Save measurement and change sensor selection switch to sensor no. 2 etc.
10. Start another measurement and proceed as before

Defects affect stress wave velocity:



Different defect types such as cracks and cavity cause stress wave attenuation. Comparing stress wave velocities between different sensors give information about existing defects.

Measurement result output:

```

*****
*
*                               Micro Hammer Measurements
*
*   No. of msmts. : 8
*   Period       : From 21.04.16 13:31:03 to 21.04.16 13:49:47
*
*****

```

Msmt. no.	Id number	Date	Time	Diameter	Value	Remark
1		21.04.16	13:39:43	028 cm	1180 m/sec	
2		21.04.16	13:44:15	044 cm	1014 m/sec	
3		21.04.16	13:45:29	043 cm	1077 m/sec	
4		21.04.16	13:46:40	024 cm	1208 m/sec	
5		21.04.16	13:48:08	000 cm	0237 µs	
6		21.04.16	13:48:37	000 cm	0428 µs	
7		21.04.16	13:49:13	000 cm	0403 µs	
8		21.04.16	13:49:47	000 cm	0198 µs	

Please read the manual for detailed instructions on electronic unit settings and transfer of measurement data.



Complete installation setup when performing measurement