INSTRUCTION MANUAL
MT960
TIMBER MOISTURE METER

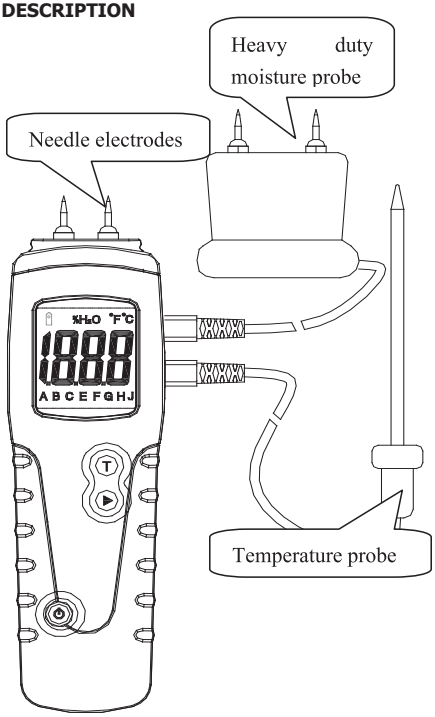
Contents

Page no

1. USER INSTRUCTIONS

This instrument is a conductivity moisture meter specifically designed for the timber industry. The instrument has eight calibration scales, enabling the user to take accurate moisture measurements in 150 wood species. Moisture measurements can be taken using the integral pin electrodes, or using the heavy duty moisture probe. When used with the temperature probe, the moisture measurements are automatically corrected with respect to temperature. This instrument is switched on by pressing "⏻" momentarily and switched off by pressing "⏻" and holding for 3 seconds or more. The instrument will switch off automatically after 5 minutes, the default automatically switch off time can be setting range 1 to 9 minutes (see section 4).

2. METER DESCRIPTION



3. MEASURING INSTRUCTIONS

Remove the cap to expose the needle electrodes OR Connect the heavy duty moisture probe socket on the right hand side of this instrument and switch-on by pressing "⏻". Select the appropriate wood calibration scale (A, B, C, E, F, G, H or J) by referring to the enclosed wood calibration table and pressing "▶". Push into the wood and observe the reading.

4. USING THIS INSTRUMENT WITHOUT THE TEMPERATURE PROBE

The instrument is calibrated for wood at 20°C (68°F). In general, timber that is hotter than 20°C will give higher readings and timber colder than 20°C will give lower readings. An approximate manual correction of 0.5% moisture content per 5°C may be subtracted from timber that is above 20°C. For timber that is below 20°C, a manual correction of 0.5% moisture content per 5°C may be added to the measured value.

5. AUTOMATICALLY TEMPERATURE CORRECTED (ATC)

Switch the instrument on and select the appropriate wood calibration scale as detailed in sections 1. Using a hammer and nail of nominal 3 mm diameter, make a hole in the wood to be tested. Remove the nail and push the Temperature Probe into the hole until the tip is at the required depth. Connect the Temperature Probe into the instrument via the "Temp" socket. Then using this instrument to measure timber can obtain the automatically temperature corrected (ATC) moisture value. If you need to read current temperature of timber press "T" button, then LCD will display the temperature. Press "T" button the LCD will display either °C or °F temperature. Pressing "▶" button the LCD display moisture value again. (Temperature Range: -35°C ~ 80°C).

6. SET-UP AUTOMATICALLY SWITCH-OFF TIME

Combinatorial using "⏻" + "▶" button can change the default automatically switch-off time. Depress the "⏻" button don't release and press the "▶" button will automatically change the switch-off time (disable automatically switch-off or set from 1 to 9 minutes) by changing the code as detailed in the following table.

Code	Description
0	Disables automatic switch-off
1	Selects automatic switch-off at 1 minute
2	Selects automatic switch-off at 2 minutes
3	Selects automatic switch-off at 3 minutes
……	……And so on to……
9	Selects automatic switch-off at 9 minutes

7. CALIBRATION CHECK

There are two checked calibration in the cap of the instrument. Use the needle touch the two poles of calibration cap. When checking the calibration, the A scale should be selected and the temperature probe must be disconnected. Correctly calibrated the instrument will register %H2O values in the range 17.7 to 18.3 (at the "T" calibration) and in the range 25.5 to 26.5 (at "B" calibration). (If the tolerance is over +/-1 the instrument can't accurately measure the moisture of timber, then open the back cover, adjust the rheostat to adjust the tolerance to meet the range.)

8. CARE AND MAINTENANCE

When the instrument is not in use, keep it in its pouch together with its accessories. Store the kit in a stable, dust-free environment out of direct sunlight. Remove the batteries from the instrument if it is to be stored for periods of more than one month, or when the low battery power symbol appears on the display. Check the condition of accessories used with the instrument on a regular basis and replace them if they become worn or damaged.

9. CALIBRATION TABLES FOR WOOD

9.1. Timber Species Group Table

Common names of timbers as BS888&589:1973

Abura	E	Birch, Yellow	A
Afara	A	Bisselon	E
Aformosa	G	Bitterwood	F
Afzelia	E	Blackbutt	C
Agba	J	Bosquiea	A
Amboyna	G	Boxwood, Maracaibo	A
Ash, American	B	Camphorwood, E African	C
Ash, European	A	Canarium, African	B
Ash, Japanese	A	Cedar, Japanese	B
Ayan	C	Cedar, West Indian	J
Baguacu, Brazilian	F	Cedar, Western Red	C
Balsa	A	Cherry, European	J
Banga Wanga	A	Chestnut	C
Basswood	G	Coachwood	G
Beech, European	C	Cordia, American Light	F
Berlina	B	Cypress, E African	A
Binvang	E	Cypress, Japanese (8-18%mc)	J
Birch, European	J	Cypress, Japanese (18-28%mc)	C

Dahoma	A
Danta	C
Douglas Fir	B
Elm, Japanese Grey Bark	B
Elm, English	E
Elm, Rock	E
Elm, White	E
Empress, Tree	J
Erimado	F
Fir, Douglas	B
Fir, Grand	A
Fir, Noble	J
Greenheart	C
Guarea, Black	J
Guarea, White	H
Gum, American Red	A
Gum, Saligna	B
Gum, Southern	B
Gum, Spotted	A
Gurjun	A
Hemlock, Western	C
Hiba	J
Hickory	F
Hyedunani	B
Iroko	F
Ironbank	B
Jarrah	C
Jelutong	C
Karpur	A
Karri	A
Kauri, New Zealand	E
Kauri, Queensland	J
Keruing	F
Kuroka	A
Larch, European	C
Larch, Japanese	C
Larch, Western	F
Lime	E
Loliondo	C
Mahogany, African	J
Mahogany, West Indian	B
Makore	B
Mansoia	B
Maple, Pacific	A
Maple, Queensland	B
Maple, Rock	A
Maple, Sugar	A
Matai	E
Meranti, Red (dark/light)	B
Meranti, White	B
Merbau	B
Missanda	C
Muhuhi	J
Muninga	G
Musine	J
Musizi	J
Myrtle, Tasmanian	A
Naingon	C
Oak, American Red	A
Oak, American White	A
Oak, European	A
Oak, Japanese	A
Oak, Tasmanian	C
Oak, Turkey	E
Obeche	G
Odoko	E
Okwen	B
Olive, E African	B
Olivillo	G
Opepe	H
Padang	A
Padauk, African	F
Panga Panga	A
Persimmon	G
Pillarwood	F
Pine, American long leaf	C
Pine, American pitch	C
Pine, Bunya	B
Pine, Caribbean Pitch	C
Pine, Corsican	C
Pine, Hoop	C
Pine, Huon	B
Pine, Japanese Black	B
Pine, Kauri	E

Pine, Lodgepole	A
Pine, Maritime	B
Pine, New Zealand White	B
Pine, Nicaraguan Pitch	C
Pine, Parana	B
Pine, Ponderosa	C
Pine, Radiata	C
Pine, Red	B
Pine, Scots	A
Pine, Sugar	C
Pine, Yellow	A
Poplar, Black	A
Pterygota, African	A
Pyinkado	E
Queensland Kauri	J
Queensland Walnut	C
Ramin	G
Redwood, Baltic (European)	A
Redwood, Californian	B
Rosewood, Indian	A
Rubberwood	H
Santa Maria	H
Sapele	C
Sen	A
Seraya, Red	C
Silky Oak, African	C
Silky Oak, Australian	C
Spruce, Japanese (8-18%mc)	J
Spruce, Japanese (18-28%mc)	C
Spruce, Norway (European)	C
Spruce, Sitka	C
Stringybark, Messmate	C
Stringybark, Yellow	C
Sterculia, Brown	A
Sycamore	F
Tallowwood	A
Teak	F
Totara	E
Turpentine	C
Utile	J
Walnut, African	J
Walnut, American	A
Walnut, European	C
Walnut, New Guinea	B
Walnut, Queensland	C
Wawa	G
Wandoo	J
Whitewood	C
Yew	C

9.2. Botanical Names of Timbers

Abies alba	B
Abies grandis	A
Abies procera	J
Acanthopanex ricinifolius	A
Acer macrophyllum	A
Acer pseudoplatanus	F
Acer saccharum	A
Aetoxicon punctatum	G
Aformosia elata	G
Afaelia spp	E
Agathis australis	E
Agathis palmerstoni	J
Agathis robusta	J
Amblygonocarpus andgensis	A
Amblygonocarpus obtusungulis	A
Araucaria angustifolia	B
Araucaria bidwilli	B
Araucaria cunninghamii	C
Berlinia grandiflora	B
Berlinia spp	B
Betula alba	J
Betula alleghaniensis	J
Betula pendula	J
Betula spp	J
Bosquiera phoberos	A
Brachylaena hutchinsii	J
Brachylaena spp	B
Calophyllum brasiliense	H
Canarium schweinfurthii	B
Cardwellia sublimes	C
Carya glabra	F
Cassipourea elliotii	F

Cassipourea melanosana	F
Castanea sutiva	C
Cedrea odorata	J
Ceratopetalum apetala	G
Chamaecyparis spp (8-18%mc)	J
Chamaecyparis spp (18-28%mc)	C
Chlorophora excelsa	F
Cordial alliodora	F
Corton megalocarpus	J
Cryptomelia japonica	B
Cupressus spp	A
Dacryium franklinii	B
Dalbergia latifolia	A
Diospyros virginiana	G
Dipterocarpus (Keruing)	F
Dipterocarpus zeylanicus	A
Distemonanthus benthamianus	C
Dracontomelium mangiferum	B
Dryobanalops spp	A
Dyera costulata	C
Entandrophragma angolense	H
Entandrophragma cylindricum	C
Entandrophragma utile	J
Endiandra palmerstoni	C
Erythrophleum spp	C
Eucalyptus acmenicides	C
Eucalyptus crebra	B
Eucalyptus diversicolor	A
Eucalyptus globules	B
Eucalyptus maculate	A
Eucalyptus marginata	C
Eucalyptus microcorys	A
Eucalyptus obliqua	C
Eucalyptus pilularis	C
Eucalyptus saligna	B
Eucalyptus wandoo	J
Fagus sylvatica	C
Flindersia brayleyana	B
Fraxinus Americana	B
Fraxinus excelsior	A
Fraxinus japonicus	A
Fraxinus mardshurica	A
Gonystylus macrophyllum	G
Gossweilodendron balsamiferum	J
Gossypiospermum proerox	A
Grevillea robusta	C
Guarea cedrata	H
Guarea thomsonii	J
Guibortia ehie	B
Hevea barsilensis	H
Intsia bijuga	B
Juglans nigra	A
Juglans regia	C
Khaya senegalensis	E
Khaya ivorensis	J
Larix deciduas	C
Larix kaempferi	C
Larix leptolepis	C
Larix occidentalis	F
Liquidamper styraciflua	A
Lovoa klaineana	J
Lovoa trichiloides	J
Maesopsis eminii	J
Mansonia altissima	B
Millettia stuhimannii	A
Mimusops heckelii	B
Mitragyna ciliate	E
Nauclea diderrichii	H
Nesogordonia papaverifera	C
Nothofagus cunninghamii	A
Ochroma lagopus	A
Ochroma pyramidalis	A
Ocotea rodiaei	C
Ocotea usambarensis	C
Octomeles sumatrana	E
Olea hochstetteri	B
Olea welwitschii	C
Palaquium spp	A
Paulownia tomentosa	J
Pericopsis elata	G
Picea abies	C
Picea jezoensis (8-18%mc)	J
Picea jezoensis (18-28%mc)	C
Picea sitchensis	C

Picaenia excelsa	C
Pinus caribaea	C
Pinus contorta	A
Pinus lampertiana	C
Pinus nigra	C
Pinus palustris	C
Pinus pinaster	B
Pinus ponderosa	C
Pinus radiate	C
Pinus spp	B
Pinus strobus	A
Pinus sylvestris	A
Pinus thunbergii	B
Pipadeniastrum africanum	A
Piptadenia africana	A
Podocarpus dacrydiodes	B
Podocarpus spicatus	C
Podocarpus totara	E
Populus spp	A
Pruns avium	J
Pseudotsuga menzesii	B
Pterocarpus angolensis	G
Pterocarpus indicus	G
Pterocarpus soyauxii	F
Pterygota bequaertii	A
Quercus cerris	E
Quercus delegatensis	C
Quercus gigantean	C
Quercus robur	A
Quercus spp	A
Ricinodendron heudelotti	F
Sarcocepalus diderrichii	H
Scottellia coriacea	E
Sequoia sempervirens	B
Shorea smithiana	G
Shorea spp	B
Sterculia rhinopetala	A
Swietenia candollei	A
Swietenia mahogani	B
Syncarpia glomulifera	C
Syncarpia laurifolia	C
Tarrietia utillis	C
Taxus baccata	C
Tectona grandis	F
Terminalia superba	A
Thuja plicata	C
Tujopsis dolabrat	J
Tieghamella heckelii	B
Tilia anericana	G
Tilia vulgaris	E
Triploehiton scleroxylon	G
Tsuga heterophylia	C
Ulmus amercana	E
Ulmus procea	E
Ulmus thomasii	E
Xylia dolabriformis	E
Zelkova serrata	B

NOTES:

The calibration data in this table are based on standard tests by oven-drying of commercial samples of the various wood species, between 7% and fibre saturation. Above fibre saturation point (25%-30%) reading are approximate only and generally apply to wood that has dried and been re-wetted.

The instrument is calibrated for wood at 20°C (68°F). If the temperature of wood varies by more than 5°C, the meter reading can be corrected approximately by adding 0,5% for every 5°C below 20°C or subtracting 0,5% for every 5°C above 20°C.

Readings higher by 1%-2% may be obtained where wood has been impregnated with a water-borne preservative. High readings obtained with some ply-woods of peculiar composition must be treated with caution.

Building material measuring: selected scale A and measure building material, referring the following table can obtain the building material moisture value.

Std Scale A	Build	Species Group							Chip -
		B	C	E	F	G	H	J	board
%H2O									
6	3								
7	4.8	9.2	9.4	8.6	6.8	6.7	11.0	10.1	
8	7.0	10.0	10.3	9.3	7.4	7.4	11.5	11.0	
9	8.7	10.8	10.9	9.7	7.9	8.1	12.1	11.6	8.5
10	10.5	11.7	11.5	10.4	8.6	8.8	12.7	12.2	9.4
11	12.2	12.7	12.6	11.3	9.5	9.7	13.4	13.4	10.5
12	13.3	13.6	13.7	12.1	10.5	10.5	14.0	14.3	11.5
13	14.8	14.5	14.5	12.7	11.2	11.2	14.5	15.1	12.5
14	16.2	15.3	15.5	13.4	11.8	11.8	15.0	16.0	13.5
15	16.6	16.3	16.7	14.1	12.5	12.6	15.6	17.0	14.4
16	17.2	16.9	17.5	14.8	13.0	13.2	16.0	17.7	14.9
17	18.8	17.7	18.8	15.7	14.3	13.9	16.6	18.5	15.3
18	19.6	18.2	19.7	16.3	15.0	14.5	17.0	19.1	16.1
19	20.2	19.0	21.0	16.9	15.9	15.2	17.6	20.0	16.7
20	20.6	20.0	22.6	17.8	16.9	16.1	18.4	21.3	17.2
21	20.9	20.8	23.5	18.5	17.6	16.8	19.1	22.3	18.3
22	21.5	21.5	24.5	29.3	18.3	17.4	19.7	23.2	19.1
23	22.1	22.9	26.4	20.2	19.8	18.6	21.2	24.5	19.9
24	22.7	23.5	27.4	20.8	20.4	19.0	22.0	25.8	20.5
25	23.2	24.2	27.8	21.2	21.0	19.4	22.7	26.3	23
26	23.6	25.3	29.0	22.4	22.3	20.1	23.9	27.3	
27	24.0	26.6	30.0	23.3	23.5	20.8	24.9	28.2	
28	24.2	27.9	31.2	24.2	24.6	21.6	25.7	29.2	
29	24.4	29.3	32.5	25.6	26.0	22.9	26.9	30.2	
30	24.6	30.8	33.7	26.8	27.5	24.1	28.2	31.1	
32	25.0								
37	25.8								
39	26.1								
40	27.2								
46.5	33.0								

MAJOR TECH (PTY) LTD

South Africa

www.major-tech.com

sales@major-tech.com

Australia

www.majortech.com.au

info@majortech.com.au