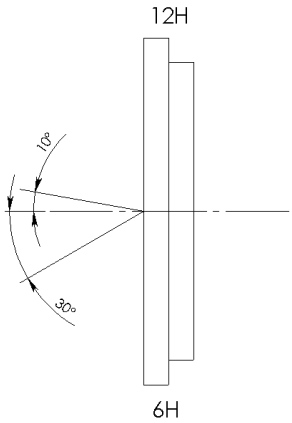
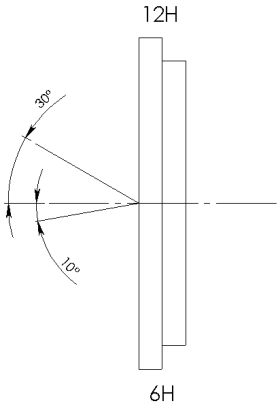
CHANGING THE MDM-1 VIEWING ANGLE

Most users are not aware but it is possible to change the viewing angle of the MDM-1 display. The MDM-1 LCD has a viewing direction of 6 o'clock. See Fig 1a. This means that it is good for a hand held instrument however it is not so good if you are looking down on a vertical mounted panel. In the presence of illumination vertically above i.e. fluorescent ceiling light then this may not be noticeable as light passes into the MDM-1 and is reflected back out and adding to the visibility.





The solution is to turn the glass through 180° so you now have a 12 o'clock view which favours reading above. This also works for the other display (DMX & DDM4) products from Lascar Electronics. Unfortunately, on the MDM-1 the design is not 100% symmetrical and segments, 3j and 3k (2 horizontal middle bars of digit 3) are transposed. Now if you are just displaying 7 segment style numbers with both segments on i.e. digit 3 then this is not a problem but if you are displaying text and/or starburst style numbers then you will need to modify the look-up table in software. Maybe a switch, link selectable or serial set-up option.

Backlighting can also help the perceived contrast. This consists of 4 yellow-green LED's wired as 2 parallel circuits. Current is limited by R10 and R11. These are set so that the maximum current is not exceeded when supply voltage is 5.5V (max), therefore when run at 5V, or less, they are not so bright. This can also be improved by running the supply, or just the backlighting, at 5.5V. Alternatively, if the supply voltage is 5V then the 47R surface mount resistors can be replaced with 33R types or 0R and an external current limit circuit (30mA per chain i.e. 60mA in total).