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MDA485, Transmission Protocol.

The **MDA485** protocol is a simple multidrop routine, for both numeric- and alphanumeric-displays, for use on a two-wire serial RS422/485 transmission line. Max. 255 individual addresses (or 16 groups). All systems-call for simultaneous updating of all connected displays. Data is send as ASCII-characters (9600,N,8,1), gathered in packages with <start>-, <status>- and <stop>-characters.

NOTE1: In direct transmission mode(i.e.: no addressing, no protocol), the characters are written one at the time, from left to right(all address jumpers OFF).

NOTE2: By address setup the 820-interface automatically changes to protocol transmission.

Address 00(no jumpers in connector):

You can write directly to a display in standard ASCII code, without protocol from left to right.

<CR> = return to start; <FF> = clear display; <BS> = backspace;

Protocol flow:

Start - (<NAK><SOH>) and stop- (<EOT>) characters are always needed for maintaining the protocol flow; all other characters may be omitted with no consequence for the flow.

NOTE3: All displays are regarded as a 1-line type; regardless of the actual number of lines and characters.

NOTE4: By cursor-addressing you may use VT100 sequences, ex: <ESC>[:25HDISPLAY TEST = Start at character no. 26.

Protocol communication:

Choose by setting the desired address jumpers in connector.

<NAK><SOH> = start package. 01-FF = character address. Data- / function-information follows here. <EOT> identifies end of package.

Data is always written from the top left corner. Address no.(hex value) is send as 2 ASCII characters. Ex: address number 16h = 31h + 36h.

By cursor-addressing the following sequence is used:

<NAK><SOH>01<ETX>1C<STX>08DISPLAY TEST<EOT>, where <ETX>1C is the cursor address switch and the two first ASCII characters point to the start position, counted from 0.

In smaller displays, data is simply overwritten by each data-refreshment!

All systems-call:

If the address no. is replaced with: ?? (= 3Fh + 3Fh) all displays will be addressed simultaneously.

Group-call:

If the LSB in the address no. is replaced by ?, all displays in the group designated by the number in the MSB position will be addressed, ex: <NAK><SOH>5?.....<EOT> = all addresses 50h to 5Fh are activated.

Control characters:

Only active under protocol transmission. <ETX> followed by the hex value of the control character (written as 2 ASCII characters) activates the selected control action, ex: <ETX>0C = <FF>.

Available control characters:

<CR> = 0Dh / carriage return

<BS> = 08h / back space

<FF> = 0Ch / clear display

<STX> = 02h / start of transmission (written in ASCII)

<EOT> = 04h /end of text. Package is terminated wherever <EOT> occurs in the package. You have to start a completely new package, if you have more data for the display.

