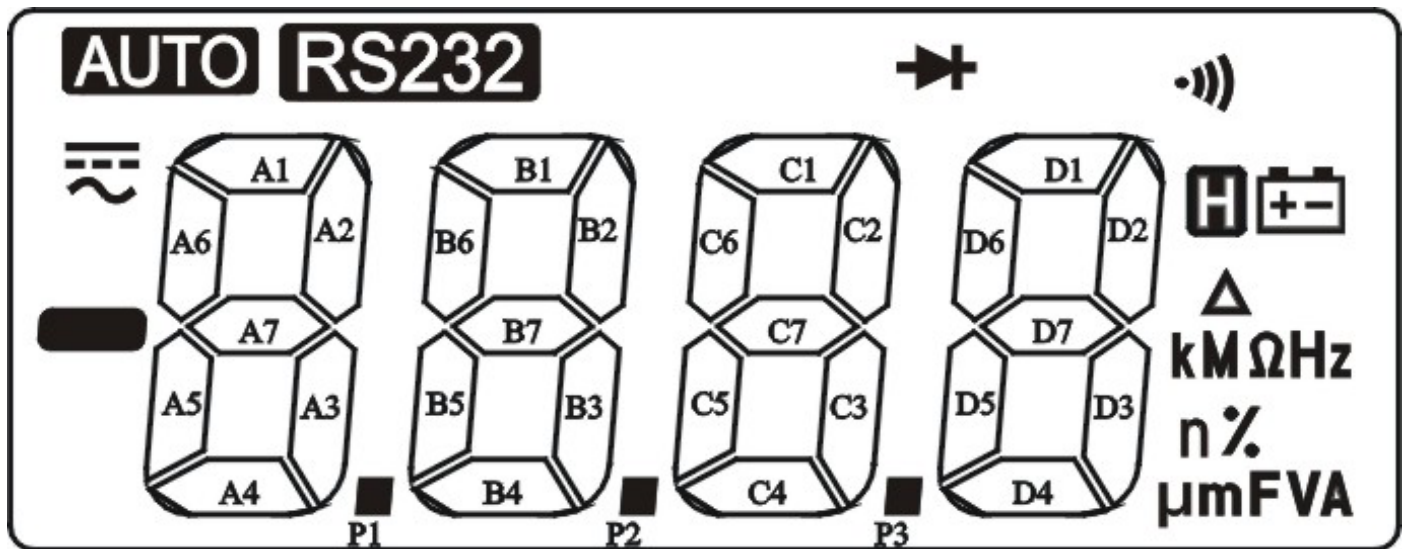


2500-count DMMs communication protocol

After connecting meter and PC computer via interface cable & after initiating COM port, meter will automatically output 14-byte data of which format is corresponding to LCD map as shown below, and annunciator "RS232" will appear on LCD display. The output rate is equal to the LCD display update rate.

Baud rate: 2400, N, 8, 1



Output Data set	Bit 7 ~ Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1'st byte	0001	~	---	AUTO	RS232
2'nd byte	0010	█	A5	A6	A1
3'rd byte	0011	A4	A3	A7	A2
4'th byte	0100	P1	B5	B6	B1
5'th byte	0101	B4	B3	B7	B2
6'th byte	0110	P2	C5	C6	C1
7'th byte	0111	C4	C3	C7	C2
8'th byte	1000	P3	D5	D6	D1
9'th byte	1001	D4	D3	D7	D2
10'th byte	1010	u	n	k	➔
11'th byte	1011	m	%	M	⋄
12'th byte	1100	F	Ω	Δ	⊞
13'th byte	1101	A	V	Hz	⊞
14'th byte	1110	x	x	x	x

1: Corresponding LCD segment on

0: LCD segment off

X: don't care

DIGITS DECODE

AND " 2'nd, 4'th, 6'th, & 8'th bytes " with "00000111B"
then get (n-2'nd, n-4'th, n-6'th, & n-8'th)

AND " 3'rd, 5'th, 7'th, & 9'th bytes " with "00001111B"
then get (n-3'rd, n-5'th, n-7'th, & n-9'th)

if (n-2'nd, n-3'rd) = (00H, 05H)

then DIGIT1 = "1"

if (n-2'nd, n-3'rd) = (05H, 5BH)

then DIGIT1 = "2"

if (n-2'nd, n-3'rd) = (01H, 0FH)

then DIGIT1 = "3"

if (n-2'nd, n-3'rd) = (02H, 07H)

then DIGIT1 = "4"

if (n-2'nd, n-3'rd) = (03H, 0EH)

then DIGIT1 = "5"

if (n-2'nd, n-3'rd) = (07H, 0EH)

then DIGIT1 = "6"

if (n-2'nd, n-3'rd) = (01H, 05H)

then DIGIT1 = "7"

if (n-2'nd, n-3'rd) = (07H, 0FH)

then DIGIT1 = "8"

if (n-2'nd, n-3'rd) = (03H, 0FH)

then DIGIT1 = "9"

if (n-2'nd, n-3'rd) = (07H, 0DH)

then DIGIT1 = "0"

(n-4'th, n-5'th) is for DIGIT2. (n-6'th, n-7'th) is for DIGIT3. (n-8'th, n-9'th) is for DIGIT4. They can be decoded by same principle.

DECIMAL POINT DECODE

for example, (DIGIT1, DIGIT2, DIGIT3, DIGIT4) = (2, 1, 8, 9)

if (bit3 of 4'th byte) =1

then Reading= "2.189"

if (bit3 of 6'h byte) =1

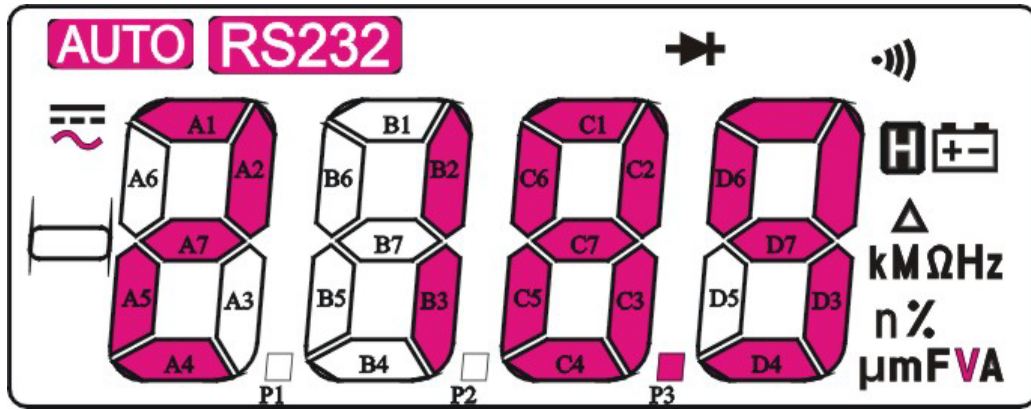
then Reading= "21.89"

if (bit3 of 8th byte) =1

then Reading= "218.9"

else Reading= "2189"

For example: LCD reading is “**AC 218.9V auto-ranging**”, 14-byte data output is:



Output Data set	Bit 7 ~ Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	HEX format
1'st byte	0001	1	0	1	1	1BH
2'nd byte	0010	0	1	0	1	25H
3'rd byte	0011	1	0	1	1	3BH
4'th byte	0100	0	0	0	0	40H
5'th byte	0101	0	1	0	1	55H
6'th byte	0110	0	1	1	1	67H
7'th byte	0111	1	1	1	1	7FH
8'th byte	1000	1	0	1	1	8BH
9'th byte	1001	1	1	1	1	9FH
10'th byte	1010	0	0	0	0	A0H
11'th byte	1011	0	0	0	0	B0H
12'th byte	1100	0	0	0	0	C0H
13'th byte	1101	0	1	0	0	D4H
14'th byte	1110	0	0	0	0	E0H

PS1:
Only TXD and RXD lines of COM port are used for 2500-count meter communication. DTR/DSR and RTS/CTS control lines are connected together respectively inside interface cable at computer side, and do not need to be individually proceeded with during transmission.

PS2:
2500-count meter outputs 14-byte update data only while the voltage level of TXD line is positive. It is recommended to have TXD line output negative voltage while the transmission is not needed. This can save meter's battery power consumption a little bit.

PS3:
Pressing the **SELECT** button while turning the meter on to disable meter's APO (Auto Power Off) feature manually for long-term data logging.