

TV-XX/XX weighing indicators software, version 6.43 and up

Serial link data communications protocol

Supported by versions 16.50, 16.05, 16.12, 16.22.

Activate	-> 01H + 4 byte for number	*
Upon sending command, the device is ready to indicate weight in 20 ms		
Receive data from the display	-> 10H; <-9 byte for display	-
Receive passive key data	-> 11H; <-1 byte for key	-
Reset passive key	-> 19H	
Receive active key	-> 14H; <-1 byte for key	-
Output active key	-> 13H + 1 byte for key	*
Reset active key	-> 15H	*
Output data on the indicator	-> 12H + 8 byte for data	*
Shift to weight indication	-> 18H	*
Zero setting	-> 0DH	*
Accept 1st status word	-> 16H; <-1 byte	-
Accept 2nd status word	-> 17H; <-1 byte	-
Network reset	-> 02H	

-> send to indicator,

<- accept from indicator

For commands marked '*', the indicator outputs confirmation by #FF code.

After output reset active key to active key channel.

Make a pause of 10-50 milliseconds between commands sending, if possible.

1. The software can work using channels RS-232 and RS-485.

2.

2.1. Indicator activation: if the indicator number equals 0, in this case, it always responds to the commands accepted from serial link.

If the indicator number does not equal to zero, it needs to be activated. In order to do so, send 01H command to the serial link, and then 4 symbol bytes corresponding to the indicator's number.

After that, the indicator will be activated.

2.2. Data acceptance from the indicator: send 10H command to IBM serial link. In response to the command, the indicator will send a line of 9 bytes in symbol format. The first byte symbol is '=', the content of bytes from 2 to 8 directly corresponds to the content of the indicator display, and the last byte provides the status of three information LEDs. Example: '=0.00000\$'.

2.3. Passive key code acceptance. Passive key concept of operation:

a) code of the pressed key is recorded in the indicator buffer;

b) subsequent pressing of the indicator's keys does not change the code in the buffer;

c) passive key reset (see below) enables to record the pressed indicator key in buffer and, respectively, IBM reads a new passive key value.

Passive key code acceptance: the indicator receives 11H command, in response it sends a passive key buffer (one byte in symbol format).

2.4. Passive key reset: the indicator receives 19H command.

2.5. Active key acceptance (active key means the key currently processed by the indicator). The list of active keys and codes returned by them is given below:

0-30H, 1-31H, 2-32H, 3-33H, 4-34H, 5-35H, 6-36H, 7-37H, 8-38H, 9-39H, Ф-3AH, ТАРА (container)-54H, ВВОД (input)-3DH, запятая (comma)-2EH, БР/НЕТТО/HETTO (gross/net)-3EH.

Active key acceptance: the indicator receives 14H command and then returns the active key code (one byte in the format set out above).

2.6. Active key output (emulation capability for key pressing from IBM is available). In order to do this, IBM sends 13H to the indicator via the serial link, and then sends a byte of the emulated key (the format is provided in clause 2.5). After that, the active key reset is necessary (see below).

2.7. Active key reset: the indicator receives 15H command.

2.8. Output data from the computer on the indicator's display: the indicator receives 12H command, then a series of eight symbol data bytes (the first byte is the senior one on the display, the last byte is on the LEDs). The indicator automatically displays the received data. LEDs codes: 20h – off, 21h – only КОМПОН (CONTROL) is on, 27h – all three LEDs are on, lit one after another, respectively.

2.9. Shift to weight indication (upon completion of data output from the computer on the indicator, the latter must be transferred to weight indication). The indicator receives 18H command.

2.10. First status word (30H – passive keyboard is not ready, 31H – passive keyboard is ready). The indicator receives 16H command – the indicator outputs a byte (as set out above).

2.11. Second status word (30H – weight indication mode, 31H – keyboard input mode). The indicator receives 17H command – the indicator outputs a byte (as set out above).

2.12. Network reset. Termination as to data gathering from the current indicator must be accompanied by the command СБРОС СЕТИ (NETWORK RESET) – 02H. It will deactivate all indicators in the network and prepare the next indicator for activation.

For weight batchers of version 6.02

Readout of the set trigger level of the selected weight point. Command format:

04h + 'N' + 'U',

where N is the number of the selected point from 1 to 8;

U is the weight point level (H – upper or L – lower)

The indicator will respond with a line of 11 symbols. Example:

'00011.00000'.

In order to record the weight point value, send the following 10-symbol sequence:

03h + 'N' + 'U' + D,

where D = '00001.0000'.

In response to command acceptance, the indicator outputs #FFh confirmation code.

Important: During the recording of trigger level values via the series link, the set values recorded during indicator calibration in ROM are not changed and cannot be read. Upon resetting or powering up, the set values are loaded from the indicator's ROM.