www.jbctools.com

PROGRAMMERS GUIDE

Communication Protocol for Automated Processes

Control Units

UCR245, UCR 470, ALE, NAE, DDE, DME and HDE

This manual corresponds to the following references:

- **UCR245:**
    - **UCR245-5A** (100-230 V)
- **UCR470:**
    - **UCR470-5A** (100-230 V)
- **ALE:**

Without solder wire perforation:

- **ALE-9..UA** (100 V)
- **ALE-1..UA** (120 V)
- **ALE-2..UA** (230 V)

With solder wire perforation:

- **ALE-9..UVA** (100 V)
- **ALE-1..UVA** (120 V)
- **ALE-2..UVA** (230 V)

- **NAE:**
    - **NAE-9C** (100 V)
    - **NAE-1C** (120 V)
    - **NAE-2C** (230 V)
- **DDE:**
    - **DDE-9C** (100 V)
    - **DDE-1C** (120 V)
    - **DDE-2C** (230 V)
- **DME:**
    - **DME-9C** (100 V)
    - **DME-1C** (120 V)
    - **DME-2C** (230 V)
- **HDE:**
    - **DME-9A** (100 V)
    - **DME-1A** (120 V)
    - **DME-2A** (230 V)

Communication Protocol

Communication protocol was developed to help you set up the communication between soldering stations and a robot (PC or PLC).

It can be applied to the following JBC's control units:
- **UCR** Control Unit for Robot
- **ALE** Automatic-Feed Soldering Control Unit
- **NAE** 2-Tool Control Unit
- **DDE** 2-Tool Control Unit
- **DME** 4-Tool Control Unit
- **HDE** Heavy Duty Control Unit

The protocol is divided into three layers:
- **PHL:** Physical layer
- **DLL:** Data link layer
- **APL:** Application layer (depends on station model)

Physical Layer (PHL) for UCR

- **UCR** Control Unit for Robot can be connected to a PLC using a five-pin Communications Cable (Ref. 0020261).

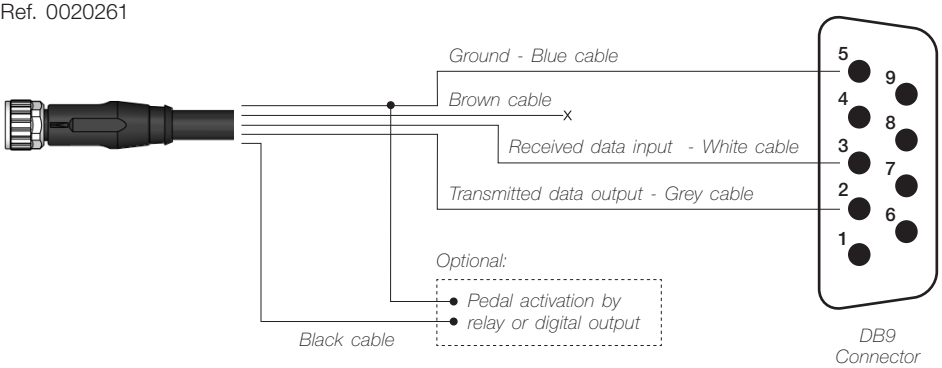
- Serial communication type is RS-232, configured as 19200 bps, eight (8) data bits, no (N) parity bit and one (1) stop bit (19200-8N1).

- The communication connector provides "switch" input.

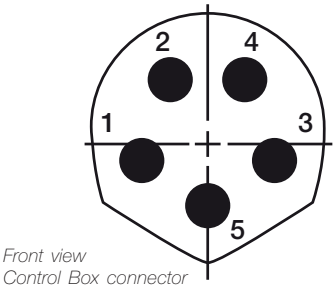
- For a proper connection, it is necessary to connect only 3 cables to the corresponding 3 pins at a typical DB9 male connector (PLC or computer).

Communications Connector

Communications Cable
Ref. 0020261



Communications Connector



Front view
Control Box connector

Pin distribution		
Pin	**Color**	**Description**
1	Brown	Not used
2	White	Serial input: RS232 RX
3	Blue	Common reference: GND for RS232 and pedal
4	Black	Switch input: 0V or 24V to start feeding. Leave it open to stop.
5	Grey	Serial output: RS232 TX

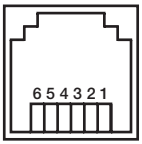
Switch input activates the Control Box, using a relay or transistor digital output. Digital output from the PLC to the switch input can be PNP or NPN style, as well as a relay contact.

Physical Layer (PHL) for ALE, NAE, DDE, DME and HDE Control Units

- JBC control units can be connected to a PLC by a RJ12 direct cable (ref. 0019751) and DB9-RJ12 Adapter (ref. 0015383).

- Serial communication type is RS-232, configured as 19200 bps, eight (8) data bits, no (N) parity bit and one (1) stop bit (19200-8N1).

Robot Station Connector



Female RJ12 Connector

Pin distribution	
Pin	**Description**
1	Not used
2	Common reference: RS232 GND
3	Serial input: RS232 RX
4	Serial output: RS232 TX
5	Common reference: RS232 GND
6	Not used

Data Link Layer (DLL) *Applies to all*

The frame format is shown in the tables below. By factory settings, communications are made with addresses. They can be disabled using W-SAD command. Depending on the command used, the Data field* is not necessary.

With no address

Start	Control Header*	Control Command	Data*	Stop	Check
1 byte	1 byte	3 bytes	0 or 5 bytes	1 byte	1 byte
STX	`R´, `W´, À´, `N´	“code”	“-9999” to “99999”	ETX	BCC

With address (factory default)

Start	Source Address	Target Address	Control Header*	Control Command	Data*	Stop	Check
1 byte	2 bytes	2 bytes	1 byte	3 bytes	0 or 5 bytes	1 byte	1 byte
STX	“00” to “99”	“00” to “99”	`R´, `W´, À´, `N´	“code”	“-9999” to “99999”	ETX	BCC

**Info*

Control Header Field*		Data Field
R (Read)		Is not used
W (Write)		Used
A (Acknowlegement)	Response to Reading Comands	Used
	Response to Writing Comands	Is not used
N (Negative Acknowlegement)		Used

Frame Fields

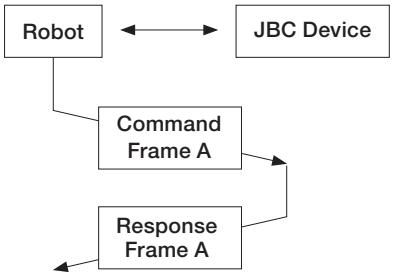
Start	Start of transmission. Corresponds to the character STX of ASCII code (0x02).
Source Address	The Source Address range is from “00” to “99”. The factory setting for Robot Address is “00”.
Target Address	The Target Address range is from “00” to “99”. Factory settings for JBC devices are as follows: · Soldering Stations Address is “01” · Solder Feeder Address is “10” · Fume Extractor Address is “20”
Control Header	Four Codes are used (see table from page 5).
Control Command	Select the command to be used (see pages 11-29).
Data	Composed of five digits. First tens of thousand is sent and thereafter successively until the last unit. Example: in order to send “12345” it is first sent “1”, and finally “5”. If it is a negative number, the minus sign is at the tens of thousands digit, shown as an ASCII character “-”. Example: In order to send “-50”, the data will be sent is “-0050”. If the number has less than five digits, then zeros will be placed before. Example: in order to send “375” the data will be sent is “00375”.
Stop	End of transmission. Corresponds to the ASCII code character ETX (0x03).
Check	This is an error Check Field. The value is obtained by calculating the logic function XOR for the whole frame, excluding the BCC.

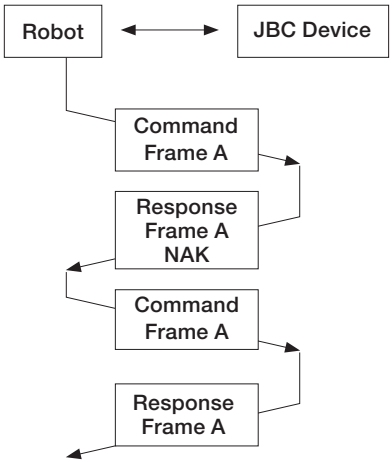
Frame Reception

The Robot sends a Command Frame to the JBC device. This information is send to the Application Layer (APL). The Command Frame obtained from the robot is correct if it has the correct length and **"starts with STX + finishes with ETX + correct BCC".**

The JBC device will send a Response Frame. In the case of a Response Frame with errors, the Robot determines the number of consecutive Command Frames that will send to the JBC device. If the Robot receives a Response Frame with errors, it cannot be resent by the JBC device.

The JBC device does not expect ACK/NAK from the Robot.





Application Layer (APL)

The robot starts the communication with a Command Frame and the JBC device sends a Response Frame. For a detailed functional description, see the tables with the command overview starting on page 11.

- Temperature is always shown in ºC.
- The power is given in thousands of the theorical maximum JBC Device power [%] without decimals.

Tools:

Number	Description
0	Without tool
1	T210
2	T245/T470
2	TR245/TR470
3	PA120/AM120
4	HT420/AT420
5	DS360
6	DR560
7	NT115
8	NP115/AN115
9	TRA245/TRA470

Ports:

Number	Description
1	Port 1
2	Port 2
3	Port 3
4	Port 4

Station Errors:

Number	Description
00000	OK
00001	Stop due by overload (TRAFO)
00002	Temperature sensor error
00003	Memory
00004	Mains frequency
00005	JBC device model
00006	Not connected MCU tools
00007	Warning overload (TRAFO)

Port Errors:

Number	Description
00000	OK
00001	Short-circuit
00002	Short-circuit non-recoverable, JBC Device should be restarted
00003	Open circuit
00004	No tool
00005	No tool accepted
00006	Tool detection
00007	Stop due by maximum powers (not implemented)
00008	Stop due by overload (MOS)
00009	Warning overload (MOS)

Communication Errors:

Number	Description
00001	BCC error (frame error when doing the sum check)
00002	Format error (format is not correct, i.e. incorrect size)
00003	Out of range (modified value out of limit)
00004	Control error (control code not accepted)
00005	Robot Control Mode Error (in JBC Device Menu is “off” for “Robot Mode” selected)
00006	Station model error (station unknown)
99999	Undefined (error not defined)

Tool Operating Status:
(Standard Processes)

Number	Description
00000	Working
00001	Stand, it still has not gone into sleep mode (delay)
00002	Sleep*
00003	Hibernation*

**Not selectable with W-PSx commands.*

Tool Operating Status:
(Automated Processes)

Number	Description
00000	Working
00010	Cooling

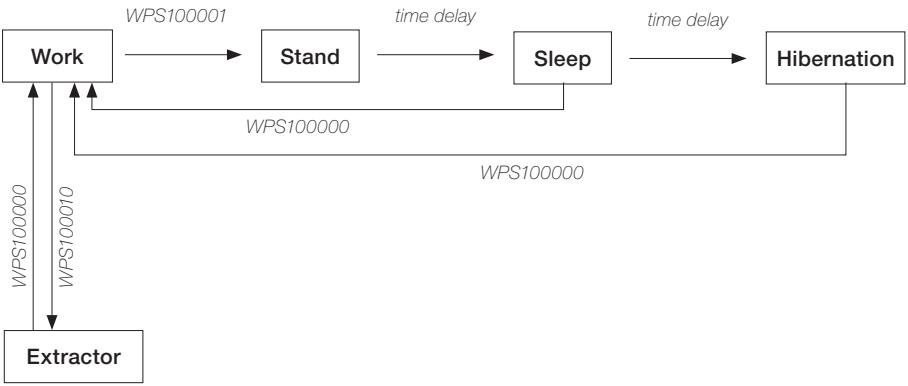
Suction Status:

Number	Description
00000	Desoldering OFF
00100	Desoldering ON

Motor Status:

Number	Description
00000	Motor OFF
01000	Motor ON and forward motion (dispensing)
02000	Motor ON and backward motion

The following diagram shows the soldering stations work flow:



Commands

Code	Description	Details
W-PSx	Write - Port Status + port	Sets the Tool Operating Status. Replace the 'x' with the number of the destination port in ASCII, for example "WPS1". The Data Field contains the selected Operating Status for the tool. Send "00000" for Working, "00010" for Extractor (stand by) or "00001" for Stand. The Tool Operating Status is managed by the robot. Except sleep and hipermantion mode, whose status are reached after time delay. See page 10 for more information. The JBC device answers with an "A-PSx" (example "APS1").
R-PSx	Read - Port Status + port	To get the Tool Operating Status. See page 10 for identifier information. The 'x' must be replaced with the number of the destination port in ACCII, for example "RPS1". The Data Field contains the tool operating status. The JBC device respons with an "A-PSx".
W-STx	Write - Select Temp. + port	Sets the Tip Working Temperature. Replace the 'x' with the number of the destination port in ASCII, for example "WST1". The Data Field contains the selected temperature, expressed in °C. The temperature modification must be done in steps of 5 degrees. The JBC device responds with an "A-STx", for expamle "AST1". **Warning:** selected temperature is a volatile setting, therefore use the W-NVS frame in order to save it into the station memory.

Code	Description	Details
R-STx	Read - Select Temp. + port	To get the set Working Temperature. Replace the 'x' with the number of the destination port in ASCII, for example "RST1". The JBC device responds with an "A-STx". The Data Field contains the current Working Temperature, expressed in °C , for expamle "AST100350".
R-TTx	Read - Tip Temp. + port	To get the current Tip Temperuature. The 'x' must be replaced with the number of the destination port in ACCII (example "RTT1"). The JBC device respons with an "A-TTx" and the Data Field contains the current tip temperature expressed in °C, expamle "ATT100183".
R-PPx	Read - Port Power + port	To get the current power delivered to the tip. The 'x' must be replaced with the number of the destination port in ACCII (example "RPP1"). The Data Field contains the delivered power expressed in ‰, for example "APP100840" for 84%. The JBC device response with A-PPx.

Code	Description	Details
W-Axy	Write - Adjust Temperature + port + tool	Sets a temperature offset. Used when a tool temperature fine-adjustment is needed. The 'x' must be replaced with the number of the destination port and the "y" with the tool number in ACCII, for example "WA12", for port 1 and tool TR245. See page 8 for identifier information. The Data field contains the Adjustment Temperature for the tool, expresed in °C. The maximum adjustment temp is +/- 50°C, for example "WA1200012". The temperature offset must be done in steps of 1 degree. Note: In order to send -50 °C, the data will be sent is "-0050". The JBC device answers with an "A-Axy".
R-Axy	Read - Adjust Temperature + port + tool	To get the Tool Adjustment Temperature. The 'x' must be replaced with the number of the destination port and the "y" with the tool number in ACCII, for example "RA12" for port 1 and tool TR245. See page 8 for identifier information. The JBC device answers with an "A-Axy". The Data Field contains the Tool Ajustment Temperature, expressed in °C.
W-MAT	Write - Maximum Temperature	Set the Maximum Temperature selectable with W-STx. The Data Field contains the Maximum Work Temperature, expressed in °C The JBC device responds with an "A-MAT".

Code	Description	Details
R-MAT	Read - Maximum Temperature	To get the Maximum Temperature selectable With W-STx. The JBC device responds with an “A-MAT”. The Data Field contains the Maximum Working Temperature, expressed in °C.
W-MIT	Write - Minimum temperature	Set the Minimum Temperature selectble with W-STx. The Data Field contains the Minimum Work Temperature, expressed in °C. The JBC device responds with an “A-MIT”
R-MIT	Read - Minimum temperature	To get the Minimum Temperature selectable with W-STx. The JBC device responds with an “A-MIT”. The Data Field contains the Minimum Work Temperature, expressed in °C.
W-Sxy	Write - Sleep Temperature + port + tool	Sets the Sleep Temperature. The ‘x’ must be replaced with the number of the destination port and the “y” with the tool number* in ACCII, for example “WS12”, for port 1 and tool TR245. See page 8 for identifier information. The Sleep Temperature must be done in steps of 5 degrees. The data Field contains the Sleep Temperature for the tool, expressed in °C. The JBC device answers with an “A-Sxy”.

Code	Description	Details
R-Sxy	Read - Sleep Temperature + port + tool	To get the Sleep Temperature. The 'x' must be replaced with the number of the destination port and the "y" with the tool number in ACCII, for example "RS12", for port 1 and tool TR245. See page 8 for identifier information. The JBC device answers with an "A-Sxy". The Data Field contains the Sleep Temperature, expressed in °C.
W-Dxy	Write - Sleep Delay + port + tool	Sets the Sleep Delay Time. The 'x' must be replaced with the number of the destination port and the "y" with the tool number* in ACCII, for example "WD12", for port 1 and tool TR245. See page 8 for identifier information. The data Field contains the delay time, to enter into sleep since the command W-PSx-00001 is received. The Sleep Delay must be set in steps of 1 minute with a range from 0 to 9. To disable the sleep mode, send "99999". The JBC device answers with an "A-Dxy".
R-Dxy	Read - Sleep delay + port + tool	To get the Sleep Delay Time. The 'x' must be replaced with the number of the destination port and the "y" with the tool number* in ACCII, for example "RD12", for port 1 and tool TR245. See page 8 for identifier information. The JBC device answers with an "A-Dxy". The Data Field contains the current Sleep Delay Time, expressed in minutes. If get answered "99999", the sleep mode is disabled.

Code	Description	Details
W-Hxy	Write - Hibernation Delay + port + tool	Sets the Hibernation Delay Time. The 'x' must be replaced with the number of the destination port and the "y" with the tool number* in ACCII, for example "WH12", for port 1 and tool TR245. See page 8 for identifier information. The Data Field contains the delay time to enter into Hibernation since the Sleep Tool Operating Status is reached. The Hibernation Delay must be set in steps of 5 minutes with a range from 0 to 60 minutes. The Data Field contains the current Hibernation Delay Time, expressed in minutes. To disable the Hibernation mode, send "99999". The JBC device answers with an "A-Hxy".
R-Hxy	Read - Hibernation Delay + port + tool	To get the Hibernation Delay Time. The 'x' must be replaced with the number of the destination port and the "y" with the tool number* in ACCII, for example "RH12", for port 1 and tool TR245. See page 8 for identifier information. The JBC device answers with an "A-Hxy". The Data Field contains the Hibernation Delay Time, expressed in minutes. If get answered "99999", the Hibernation Mode is disabled.

Code	Description	Details
R-EDx	Read - enter delay time (sleep/ hibernation) + port	To get the remaining delay time before enter into sleep or hibernation mode. The 'x' must be replaced with the number of the destination port in ACCII, for example "RED1". The JBC device answers with an "A-EDx". The Data Field contains the remaing time, expressed in seconds.
R-TT	Read - Transformer Temperature	To get the Power Supply Temperature. The JBC device responds with an "A-TT". The Data Field contains the Transformer Temperature, expressed in °C.
R-QTx	Read - Transistor Temp. + port	To get the current Transitor Temperature. The 'x' must be replaced with the number of the destination port in ACCII, for example "RQT1". The JBC device answers with an "A-QTx". The Data Field contains the current Transitor Temperature, expressed in °C.
W-HAx	Write - Higher Temp Alarm + port	Sets the upper Temperature Alarm limit. The 'x' must be replaced with the number of the destination port in ASCII, for example, "WHA1". The data Field contains the upper Temperature Alarm limit, epressed in °C. The temperature modification must be done in steps of 5 degrees. The JBC device responds with an "A-HAx".

Code	Description	Details
R-HAx	Read - Higher Temp. Alarm + port	To get the Upper Temperature Alarm limit. The 'x' must be replaced with the number of the destination port in ACCII, for example "RHA1". The JBC device answers with an "A-HAx". The Data Field contains the upper Temperature Alarm limit, expressed in °C.
W-LAx	Write - Lower Temp Alarm + port	Sets the lower Temperature Alarm limit. The 'x' must be replaced with the number of the destination port in ASCII, for example, "WLA1". The Data Field contains the Lower Temperature Alarm limit, expressed in °C. The temperature modification must be done in steps of 5 degrees. The JBC device responds with an "A-LAx".
R-LAx	Read - Lower Temp Alarm + port	To get the Lower Temperature Alarm limit. Replace the 'x' with the number of the destination port in ASCII, for example, "RLA1". The JBC device responds with an "A-LAx". The Data Field contains the lower Temperature Alarm limit, expressed in °C.

Code	Description	Details
W-HDx	Write - Higher Delay Alarm + port	Sets the delay time to activate the Upper Temperature Alarm. The delay time starts when the tip temperature is above the value in HAx. Replace the 'x' with the number of the destination port in ASCII, for example "WHD1". The Data Field contains the delay time to activate the Upper Temperature Alarm, expressed in seconds and hundrets of seconds, according to: Format "ss.cc" in ASCII. "ss" corresponds to the time in seconds, and "cc" corresponds to the time in hundreds of a second. Example: "01.60" means 1,6s; "00.10" means 0.1s. The JBC device responds with an "A-HDx". To disable the Hibernation mode, send "99999".
R-HDx	Read - Higher Delay Alarm + port	To get the delay time to activate the Upper Temperature Alarm. Replace the 'x' with the number of the destination port in ASCII, for example "RHD1". The Data Field contains the delay time to activate the Upper Temperature Alarm, expressed in seconds and hundreds of seconds, according to: "Format "ss.cc" in ASCII. "ss" corresponds to the time in seconds, and "cc" corresponds to the time in hundredths of a second. Example: "01.60" means 1,6s; "00.10" means 0,1s. When the tip temperature is above the Upper Temperature Alarm for a longer time than the delay set in the HDx, the Alarm will be set to 1." The Data Field contains the Higher Delay Alarm. "99999" means that the alarm is disabled.

Code	Description	Details
W-LDx	Write - Lower Delay Alarm + port	Sets the delay time to activate the Lower Temperature Alarm. The delay time is counted, when the temperature falls below the “Lower Temperature Alarm” limit; previously defined with LAx. Replace the ‘x’ with the number of the destination port in ASCII, for example “WLD1”. The Data Field contains the delay time to activate the “Lower Temperature Alarm”, expressed in seconds and hundrets of seconds, according to: Format “ss.cc” in ASCII. “ss” corresponds to the time in seconds, and “cc” corresponds to the time in hundredths of a second. Example: “01.60” means 1,6s; “00.10” means 0,1s. The JBC device responds with an “A-LDx”. To disable the Hibernation mode, send “99999”.
R-LDx	Read - Lower Delay Alarm + port	To get the delay time to activate the Lower Temperature Alarm. When the tip temperature falls down the Lower Temperature Alarm for a longer time than the delay set in the W-Lax, the Alarm will be set to 10. Replace the ‘x’ with the number of the destination port in ASCII, for example “RLD1”. The Data Field contains the delay time to activate the “Lower Temperature Alarm”, expressed in seconds and hundrets of seconds, according to: Format “ss.cc” in ASCII. “ss” corresponds to the time in seconds, and “cc” corresponds to the time in hundredths of a second. Example: “01.60” means 1,6s; “00.10” means 0,1s. The JBC device responds with an “A-LDx” “99999” means that the alarm is disabled.

Code	Description	Details
R-TAx	Read - Temperature Alarm + port	To get the Temperature Alarm indicator. Replace the 'x' with the number of the destination port in ASCII, for example "RTA1". The JBC device responds with an "A-TAx". The Data Field contains the Temperature Alarm value according to: 0 - Alarm disabled 1 - Alarm activated The units digit contains the high temperature alarm (HTA) and the tens digit contains the low temperature alarm (LTA). Example: 00001 = HTA 00010 = LTA 00011 = HTA+LTA '0' means there is no alarm. '1' means the alarm has been previously set to "on".
R-SMN	Read - Station Model Name	To get the JBC Device Model Name The JBC device responds with an "A-SMN". The Data Field contains the requested information.
R-CTx	Read - Connect Tool + port	To get the Connected Tool. See page 8 for value information. The 'x' must be replaced with the number of the destination port in ACCII, for example "RCT1". The JBC device response with A-CTx. The Data Field contains the identifier of the current connected tool.

Code	Description	Details
R-PEx	Read - Port Error + port	To get the Port Error. See page 9 for value information. The 'x' must be replaced with the number of the destination port in ACCII, for example "RPE1". The JBC device answers with an "A-PEx". The Data Field contains the current Port Error. For example "APE100004" for "no tool" error.
R-SER	Read - Station Error	To get the JBC Device Error. See page 9 for value information. The JBC device responds with an "A-SER". The Data Field contains the JBC Device Error value.
W-RST	Write - Restart Station	To restart the JBC Device.
W-RSP	Write - Reset Station Parameters (factory default)	To reset the JBC Device Parameters to the factory default parameters. The JBC device responds with an "A-RSP".
R-CPx	Read - Counter Plugged Hours + port	To get the Counter value for "Plugged Hours", Replace the 'x' with the number of the destination port in ASCII, for example "RCP1". The JBC device responds with an "A-CPx" The Data Field contains the Counter value of "Plugged Hours", expressed in hours.

Code	Description	Details
R-CNx	Read - Counter No Tool Hours + port	To get the Counter value of “No Tool Hours” Replace the ‘x’ with the number of the destination port in ASCII, for example “RCN1”. The JBC device responds with an “A-CNx”. The Data Field contains the Counter value of “No Tool Hours”, expressed in hours.
R-CSx	Read - Counter Sleep Hours + port	To get the Counter value of “Sleep Hours” Replace the ‘x’ with the number of the destination port in ASCII, for example “RCS1”. The JBC device responds with an “A-CSx”. The Data Field contains the Counter value of “Sleep Hours”, expressed in hours.
R-CHx	Read - Counter Hibernation Hours + port	To get the Counter value of “Hibernation Hours”. Replace the ‘x’ with the number of the destination port in ASCII, for example “RCH1”. The JBC device responds with an “A-CHx”. The Data Field contains the Counter value of “Hibernation Hours”, expressed in hours.
R-CWx	Read - Counter Work Hours + port	To get the Counter value of “Work Hours”. Replace the ‘x’ with the number of the destination port in ASCII, for example “RCW1”. The JBC device responds with an “A-CWx”. The Data Field contains the Counter value of “Work Hours”, expressed in hours.

Code	Description	Details
R-CCx	Read - Counter Sleep + port	To get the Counter value of “Sleep Cycles”, means the number of times the tool went into Sleep Mode. The ‘x’ must be replaced with the number of the destination port in ACCII, for example “RCC1”. The JBC device responds with an “ACCx” The Data field contains the number of times the tool went into Sleep Mode.
R-CDx	Read - Counter Desold + port	To get the Counter value of “Desoldering Cycles”, means the number of times the desoldering tool has been activated. The ‘x’ must be replaced with the number of the destination port in ACCII, for example “RCC1”. The JBC device responds with an “A-CDx”. The Data field contains the number of times the desoldering tool has been activated.
W-NVS	Write - Non-volatile Setting	To save the work temperature selected with W-STx, in the EEPROM memory. The next time the JBC Device starts, this stored temperature will be loaded. The data field must contains “00000”. The JBC device responds with an “A-NVS”.
W-SAD	Write new source address / new addressing mode	Forces the station to write a new source address by filling the data field with a value compressed between “00000” and “00099”. If the data field contains “00000”, the station assumes that the protocol is changed to “with-no-address” mode. **Warning: Command only available for UCR stations.**

Code	Description	Details
R-FST	Read - Fuse state	To get the JBC Device Fuse status. The JBC device responds with an “A-FST”. The Data Field contains the JBC Device Fuse status value according to: ‘0’ - There is no fuse ‘1’ - There is fuse **Warning: Command only available for UCR stations.**
R-SVR	Read - Software version	To get the JBC Device Software Version. The JBC device responds with an “A-SVR”. The Data Field contains the requested information.
R-DCx	Read - Counter Dispensed Cycles + port	To read the desoldering counter cycles the ‘x’ must be replaced with the destination port number in ASCII of the request, for example “RCD3”. The equipment answers with an “ACDx” as the control field, in the example “ACD3”. Data field will contain the requested information.
R-DLx	Read - Counter Dispensed Cycles + port	To read the dispensed length counter the ‘x’ must be replaced with the destination port number in ASCII of the request, for example “RDL1”. The equipment answers with an “ADLx” as the control field, in the example “ADL1”. Data field will contain the requested information in hexadecimal. Units [dmm]. Example: 1000 dmm -> Data field = 0x00000003E8

Code	Description	Details
W-IFE	Write - Ignore Fuse Error	To ignore fuse error, allowing the station to continue working. The equipment answers with an “AIFE” as the control field.
R-MOD	Read - Mode	To read the station’s dispensing mode. The data field will contain the requested information. Mode: ‘0’: Continuous mode ‘1’: Discontinuous mode ‘2’: Program mode ‘3’: Tin reload Example: Continuous -> Data field = 00000
W-MOD	Write - Mode	To modify the station’s dispensing mode. The equipment answers with an “AMOD” as the control field.
R-LEN	Read - Length	To read the station’s dispensing length. The equipment answers with an “ALEN” as the control field. The data field will contain the requested information. Units [dmm]. Example: 1000 dmm -> Data field = 01000

Code	Description	Details
W-LEN	Write - Length	The equipment answers with an “ALEN” as the control field.
R-FEE	Read - Dispensing Status	To read the station’s dispensing motor status. The equipment answers with an “AFEE” as the control field. The data field will contain whether the station is dispensing. • ‘0’ dispensing motor stopped • ‘1’ dispensing motor running
R-SPD	Read - Speed	To read the station’s dispensing speed. The equipment answers with an “ASPD” as the control field. The data field will contain the requested information. Units [dmm/s]. Example: 100 dmm/s -> Data field = 00100
W-SPD	Write - Speed	To modify the station’s dispensing length. The equipment answers with an “ASPD” as the control field.
R-DIA	Read - Diameter	To read the station’s soldering wire diameter. The equipment answers with an “ADIA” as the control field. The data field will contain the requested information. Units [cmm]. Example: 100 cmm -> Data field = 00100

Code	Description	Details
W-DIA	Write - Diameter	To modify the station's soldering wire diameter. The equipment answers with an "ADIA" as the control field.
R-BCK	Read - Backward Length	To read the station's backward length. The equipment answers with an "ABCK" as the control field. The data field will contain the requested information. Units [dmm]. Example: 10 dmm -> Data field = 00010
W-BCK	Write - Backward Length	To modify the station's backward length. The equipment answers with an "ABCK" as the control field.
R-WCD	Read - Wire Clogging Detection	To read the station's wire clogging detection. The equipment answers with an "AWCD" as the control field. The data field will contain the request information. • '0' wire clogging detection deactivated • '1' wire clogging detection activated
W-WCD	Write - Wire Clogging Detection	To modify the station's wire clogging detection. The equipment answers with an "AWCD" as the control field.

Code	Description	Details
W-STR	Write - Start Dispensing	To activate the station's dispensing motor. The equipment answers with an "ASTR" as the control field.
W-STP	Write - Stop Dispensing	To deactivate the station's dispensing motor. The equipment answers with an "ASTP" as the control field.

Communication Frame Examples for Soldering Stations

Frame with addresses - Write Maximum Work Temperature Command
Source Address: 00; original Target Address: 01; Command: W-MAT; set Max. Work Temp. to 375ºC

Codification	Start	Source Address	Target Address	Operation Header	Operation Code	Data	Stop	Check
ASCII	STX	00	01	W	MAT	00375	ETX	calculated
HEX	02	3030	3031	57	4D4154	3030333735	03	3E

Sending code: 0230303031574D41543030333735033E

Frame without addresses - Write Maximum Work Temperature Command
Command: W-MAT; set Max. Work Temp. to 375 ºC / 707 ºF

Codification	Start	Operation Header	Operation Code	Data	Stop	Check
ASCII	STX	W	MAT	00375	ETX	calculated
HEX	02	57	4D4154	3030333735	03	3F

Sending code: 02574D41543030333735033F

Factory Settings for Control Box

Communication configuration: 19200 - 8N1

General Settings:

With Addresses: Trarget Address: 01
Source Address: 00
Device Port: 1
Mode/Status: Extract (stand by)
Selected Work Temperature: 350 ºC / 662 ºF
Sleep Temperature: 150 ºC / 302 ºF
Sleep Delay Time: 10 sec.

Device Settings:

Max. Temperature: 500 ºC / 932 ºF
Min. Temperature: 90 ºC / 194 ºF

Tool Settings:

Upper Temperature Alarm: not set
Lower Temperature Alarm: not set
Adjust Temperature: 0 ºC / 32 ºF
Sleep Temperature: 150 ºC / 302 ºF
Sleep Delay Time: 0 sec.
Hibernation Delay Time: 10 sec.

This product should not be thrown in the garbage.
In accordance with the European directive 2012/19/EU, electronic equipment at the end of its life must be collected and returned to an authorized recycling facility.

More information available on our website

www.jbctools.com

0024318-230124