

# ALYA MMP communication protocol

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## Supported device types and versions

The protocol supports communication with the ALYA communication computer to collect data from barcode readers and ALYA multi-measurement workstation (MMP).

Communication takes place via three UDP channels:

- data from barcode readers (the cone number) is sent to the port specified by the [UDP Port Reader](#) configuration parameter (by default 3131). The D2000 KOM responds by confirming the message number.
- data about the cones weighted by MMP (the cone number, weight, width, height) are sent to a port one higher than the [UDP Port Reader](#) parameter (by default 3132). The D2000 KOM responds with a message containing the confirmation of the message number and other data depending on the configuration. All these data will be sent based on the values of the respective output I/O tags.
- Watchdog messages are sent to a port by two higher than the [UDP Port Reader](#) (by default 3133). The D2000 KOM responds with a message containing the confirmation of the message number.

If the D2000 KOM does not confirm the message to the ALYA communication computer, the ALYA communication computer buffers the collected data and resends it periodically.

## Communication line configuration

- Category of communication line: **API**.

## Station configuration

- Communication protocol "**ALYA MMP**".
- The station address is not configured.

## Station protocol parameters

Dialogue window [station configuration](#) - "Protocol parameters" tab.

They influence some optional protocol parameters. The following station protocol parameters can be specified:

Parameter	Description	Unit	Default Value
Reader UDP Port	UDP port number for receiving messages from the <a href="#">barcode readers</a> .	-	3131
Data Timeout	Timeout for receiving a message from <a href="#">barcode readers</a> , <a href="#">scales</a> or a <a href="#">watchdog</a> . If the <a href="#">Ping Active</a> parameter is set to YES and the configured timeout elapses without receiving any message, the communication is considered to be interrupted and the station goes into communication error.	s	120
Nr. of Values for Output	The number of variables that the D2000 KOM sends in response to the message about weighted cones from the <a href="#">scales</a> .	-	15
Ping Active	Activation of MMP activity tracking - see the description of the <a href="#">Data Timeout</a> parameter.	YES /NO	YES

## I/O tag configuration

Supported value types of I/O tags: **Ai, Ci, Di, TxtI, Ao, Co, Dout, TxtO**.

The address is specified as a decimal number or as a hexadecimal number with a hash at the beginning (e.g. #0A).

Value type	Address	Description
I/O tag for handling <a href="#">barcode readers</a> .		
TxtI, Ci	0	Cone number from the message received from <a href="#">barcode readers</a> ( <b>CONE_NR</b> )
I/O tags for handling input from the <a href="#">scales</a> .		

Ai, Ci, Di, TxtI	1 .. 10	<p>Individual components of the received message from the <a href="#">scales</a>. According to the specification, there are five components (addresses 1-5):</p> <ul style="list-style-type: none"> <li>• <b>ID</b> - identifier of a message</li> <li>• <b>CONE_NR</b> - the cone number</li> <li>• <b>WEIGHT</b> - the weight of the cone measured by the multi-measurement workstation (MMP)</li> <li>• <b>WIDTH</b> - the width of the cone (diameter of the reel)</li> <li>• <b>HEIGHT</b> - the height of the cone (width of the reel)</li> </ul> <p>Should the message be extended, the D2000 supports defining up to 10 components without any modification of the protocol implementation.</p>
Di	0	<p>A trigger I/O tag for the message from the <a href="#">scales</a>. It is set to True with a new timestamp when a new message from the scales arrives and the input I/O tags from the previous row of the table have their values set by <a href="#">D2000 KOM</a>.</p>
I/O tags for handling the answer for the <a href="#">scales</a> .		
Co, TxtO, Ao	1 .. 32	<p>Individual components of a response to the <a href="#">scales</a>. According to the specification, there are seven components (addresses 1-7):</p> <ul style="list-style-type: none"> <li>• <b>ID</b> - identifier of a message (must be equal to the identifier of a message received from the scales).</li> <li>• <b>MACHINE</b> - the number of a site where a cone was reeled</li> <li>• <b>PRODUCT</b> - the name of a product</li> <li>• <b>LENGTH</b> - the length of a fibre reeled on a cone</li> <li>• <b>QUALITY</b> - the qualitative rating of the coil</li> <li>• <b>DATE</b> - date and time when reeling was completed</li> <li>• <b>OPERATOR</b> - the name of the operator of the site where a cone was produced</li> </ul> <p>Should the message be extended, the D2000 supports defining up to 32 components without any modification of the protocol implementation. <b>Note:</b> component with address 2 cannot be of TxtO type, to avoid the collision with a <a href="#">trigger for the fibre rupture message</a>.</p>
Dout	0	<p>Trigger I/O tag for the response to the <a href="#">scales</a>. By writing to the trigger the application activates sending the response that contains the output I/O tags from the previous row of the table. The number of values in the reply is determined by the configuration parameter <a href="#">Nr. Of Values for Output</a>.</p>
I/O tags for sending spontaneous messages about the rupture of the fibre to the <a href="#">scales</a> .		
Co, TxtO, Ao	1	The first component of a spontaneous message about a rupture of the fibre sent to the <a href="#">scales</a> .
TxtO	2	<p>The second component and at the same time a trigger of a spontaneous message about a rupture of the fibre sent by <a href="#">D2000 KOM</a> process to the <a href="#">scales</a>. The message contains components with addresses 1 and 2.</p>

## Document revisions

- Ver. 1.0 - July 3rd, 2017 - Document creation.



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