

Networking Specifications

**multikon-eco
new glass
inspection machines**

Rev. 2.2

Date: 03-11-2015

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1. Version History

vr=1 => vr=2

- version 2015.3.0 or later of inspection software
- telegram “pv” (MK to Line), version 1 -> 2
- telegram “ml” (Line to MK), add order for working set (mold list)
- add additional channels for multikon eco-ek (infeed control)
- add optional jo field to cd for multi sort production
- changes to previous version are **bold blue**.
- additions to previous version are blue.

2. Introduction

The **MULTIKON DATA INTERFACE (MKDI)** provides container data to external systems.

3. Physical Interface

Network interface via Ethernet RJ45 connector.

The server can be configured to provide a TCP-server-socket on a predefined port (default 10001).

One client can connect to this port and receive bottle data. This client can optionally send commands to the Multikon.

4. Protocol Frame

All data is transmitted in a readable ASCII-format i.e. there are no characters with an ASCII-value < 0x20. Each telegram is terminated by <CR><LF>.

All data fields are of the form “field = value” and are separated by “;”

Each message contains at least the “tt” field (telegram type).

5. Telegram types

5.1. Protocol version information (pv) (MK to Line)

The first message which the server socket (on the MK) will send out after a client login, is the communication protocol version. This version number should be checked by the line information system to avoid undefined results in case of a protocol modification.

Fields:

tt “pv” telegram type (protocol version)

vr version, **1 or 2**

Example: tt=pv;vr=1<CR><LF>

5.3. Get systematic reject list (gr) (Line to MK)

This command can be used to query the current reject list on the machine, a “rl” telegram will be sent as answer to this request.

Fields:

tt “gr” telegram type (get reject)

5.4. Systematic reject list (rl) (MK to Line)

Answer to “gr”, currently active systematic reject list.

Fields:

tt “rl” telegram type (reject list)

mn list of mold numbers, values 0..99 (0 for noread) each separated by “,”

Example:

```
tt=rl;mn=0,5,7,15,29<CR><LF>
```

indicates that noreads (0) as well as mold numbers 5,7,15 and 29 are on the reject list.

5.5. Add systematic reject (ar) (Line to MK)

This command adds one mold number to the systematic reject list of the machine. The new reject list (“rl”) will be sent as answer to this command.

Fields:

tt “ar” telegram type (add reject)

mn list of mold numbers, values 0..99 (0 for noread) each separated by “,”

5.6. Delete systematic reject (dr) (Line to MK)

This command deletes one mold number from the systematic reject list of the machine. The new reject list (“rl”) will be sent as answer to this command.

Fields:

tt “dr” telegram type (delete reject)

mn list of mold numbers, values 0..99 (0 for noread) each separated by “,”

5.7. Get mold list (gm) (MK to Line)

This command can be used to query the currently in the IS machine installed molds (working set), a “ml” telegram will be sent as answer to this request.

Fields:

tt “gm” telegram type (get mold)

5.8. Mold list (ml) (Line to MK)

Answer to “gm”, currently working set of molds in the IS.

The position if molds in the returned list (mn) should be the following:

- “closer to cold-end” first (“further from cold-end” last)
- “closer to operator side” first (“further from operator side” last)

Example: For a double gob machine the first mold in the list should be the one closest to the cooling oven (1st section) and closest to the operator, then the one further from the operator (first section), after that the next section (2nd section)...

Fields:

tt “ml” telegram type (mold list)

mn list of mold numbers (working set IS)

5.9. Test samples (ts) (MK to Line)

This is the notification sent out by the MK after each execution of the test sample procedure (when the user ends the procedure with failed/success or restarts it).

Fields:

tt “ts” telegram type (test samples)

re result of test: 0=failed, 1=success, 2=restart

Example:

```
tt=ts;re=1<CR><LF>
```

test samples procedure was executed successfully

6. Multikon Eco default channel assignment

The default assignment has (fixed) 99 channels and reserves 60 “static” channels (admin only, station based) and 39 channels as “custom” (user defined defect types).

Note: Top->Down in this list is Left->Right in the cd-telegram’s st field.

- 1 Finish1 (Ref.)
- 2 Base
- 3 Base Stress
- 4 Base Rim
- 5 Mold Bottom
- 6 Mold Top
- 7 Mold Number
- 8 Finish2 (Inc.)
- 9 reserved
- 10 reserved
- 11 reserved
- 12 reserved
- 13 “body too small” (eco-ek)
- 14 “body too large” (eco-ek)
- 15 “containers too close” (eco-ek)
- 16 “container down” (eco-ek)
- 17 “finish too large” (eco-ek)
- 18 “overheight” (eco-ek)
- 19 “shard” (eco-ek)
- 20 reserved
- 21 SW1
- 22 SW2
- 23 SW3
- 24 SW4
- 25 SW5
- 26 SW6
- 27 SW1-Stress
- 28 SW2-Stress
- 29 SW3-Stress
- 30 SW4-Stress
- 31 SW5-Stress
- 32 SW6-Stress
- 33 SW1-Dimension
- 34 SW2-Dimension
- 35 SW3-Dimension
- 36 SW4-Dimension
- 37 SW5-Dimension
- 38 SW6-Dimension
- 39 SW1-Top
- 40 SW2-Top
- 41 SW3-Top
- 42 SW4-Top
- 43 SW5-Top

44	SW6-Top
45	Dimension
46	reserved
47	reserved
48	reserved
49	reserved
50	reserved
51	reserved
52	reserved
53	reserved
54	reserved
55	reserved
56	reserved
57	reserved
58	reserved
59	reserved
60	reserved
61	Custom 1
62	Custom 2
63	Custom 3
64	Custom 4
65	Custom 5
66	Custom 6
67	Custom 7
68	Custom 8
69	Custom 9
70	Custom 10
71	Custom 11
72	Custom 12
73	Custom 13
74	Custom 14
75	Custom 15
76	Custom 16
77	Custom 17
78	Custom 18
79	Custom 19
80	Custom 20
81	Custom 21
82	Custom 22
83	Custom 23
84	Custom 24
85	Custom 25
86	Custom 26
87	Custom 27
88	Custom 28
89	Custom 29
90	Custom 30
91	Custom 31
92	Custom 32
93	Custom 33

94	Custom 34
95	Custom 35
96	Custom 36
97	Custom 37
98	Custom 38
99	Custom 39