

HY10 JSON Data Exchange Interface

Weighing Indicator:

PUE HY 10

PUE 71

This document describes the process of data exchange in weighing indicators via protocol of json format. In order to ensure correct communication it is necessary to use names given in this document and provide data of relevant type. The data must be sent using Websocket. To send data it is necessary to establish connection via 4101 port.



Versions management			
Version	Date	Author	Modifications description
1.0	20.11.2017	Karol Kustra	Document created
1.1	23.11.2017	Karol Kustra	Command update: GET_STATUS, DBREAD, DBDEL, GET_TABLES DBREAD commands added

1. Downloading the List of Available Tables

To download the list of available tables, it is necessary to send correctly formed inquiry.

Inquiry:

```
{
  "COMMAND": "GET_TABLES",
}
```

Response:

```
{
  "COMMAND": "GET_TABLES",
  "RECORD": [
    {
      "NAME": "PRODUCTS",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Products",
      "TRANSLATION_CURRENT": "Towary"
    },
    {
      "NAME": "USERS",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Operators",
      "TRANSLATION_CURRENT": "Operatorzy"
    },
    {
      "NAME": "LABELS",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Labels",
      "TRANSLATION_CURRENT": "Etykiety"
    },
    {
      "NAME": "PACKAGES",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Packages",
      "TRANSLATION_CURRENT": "Opakowania"
    },
    {
      "NAME": "CLIENTS",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Customers",
      "TRANSLATION_CURRENT": "Kontrahenci"
    },
    {
      "NAME": "WAREHOUSES",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Warehouses",
      "TRANSLATION_CURRENT": "Magazyny"
    },
    {
      "NAME": "ADD_VAR",
      "READ_ONLY": false,
      "TRANSLATION_EN": "Extra variables",
      "TRANSLATION_CURRENT": "Zmienne dodatkowe"
    },
    {
      "NAME": "UNIV_VAR",
      "READ_ONLY": false,
    }
  ]
}
```

```

        "TRANSLATION_EN": "Universal variables",
        "TRANSLATION_CURRENT": "Zmienne uniwersalne"
    },
    {
        "NAME": "VEHICLES",
        "READ_ONLY": false,
        "TRANSLATION_EN": "Vehicles",
        "TRANSLATION_CURRENT": "Samochody"
    },
    {
        "NAME": "WEIGHMENTS",
        "READ_ONLY": false,
        "TRANSLATION_EN": "Weighing records",
        "TRANSLATION_CURRENT": "Ważenia"
    }
],
"STS": "OK"
}

```

2. Information on Table - Basic Data

Example: Users table

Inquiry:

```
{  
  "COMMAND": "DBINFO",  
  "TABLE": "USERS",  
  "PARAM": "COLUMNS"  
}
```

Response:

```
{  
  "COMMAND": "DBINFO",  
  "TABLE": "USERS",  
  "COLUMNS": "ID NAME CODE PSW PERM CARD_NUMBER MODE AUTO_MODE ACTIVE ID_WORKFLOW  
SURNAME MIN MAX",  
  "STS": "OK"  
}
```

3. Information on Table - Detailed Data

Example: Users table

Inquiry:

```
{
  "COMMAND": "DBINFO",
  "TABLE": "USERS",
  "PARAM": "COLUMNS_DETAILS"
}
```

Response:

```
{
  "COMMAND": "DBINFO",
  "TABLE": "USERS",
  "COLUMNS_DETAILS": [
    {
      "NAME": "ID",
      "TYPE": "INT",
      "MIN": "",
      "MAX": "",
      "DETAILS_EN": null,
      "DETAILS_CURRENT": null,
      "DEFAULT": "",
      "TRANSLATION_EN": "ID",
      "TRANSLATION_CURRENT": "ID"
    },
    {
      "NAME": "NAME",
      "TYPE": "TEXT",
      "MIN": "",
      "MAX": "",
      "DETAILS_EN": null,
      "DETAILS_CURRENT": null,
      "DEFAULT": "",
      "TRANSLATION_EN": "Name",
      "TRANSLATION_CURRENT": "Nazwa"
    },
    {
      "NAME": "CODE",
      "TYPE": "TEXT",
      "MIN": "",
      "MAX": "",
      "DETAILS_EN": null,
      "DETAILS_CURRENT": null,
      "DEFAULT": "",
      "TRANSLATION_EN": "Code",
      "TRANSLATION_CURRENT": "Kod"
    },
    {
      "NAME": "PSW",
      "TYPE": "PASSWORD",
      "MIN": "",
      "MAX": "",
      "DETAILS_EN": null,
      "DETAILS_CURRENT": null,

```

```

        "DEFAULT": "",
        "TRANSLATION_EN": "Password",
        "TRANSLATION_CURRENT": "Hasło"
    },
    {
        "NAME": "PERM",
        "TYPE": "ENUM",
        "MIN": "0",
        "MAX": "3",
        "DETAILS_EN": "None|Operator|Advanced Operator|Administrator",
        "DETAILS_CURRENT": "Brak|Operator|Operator  
Zaawansowany|Administrator",
        "DEFAULT": "3",
        "TRANSLATION_EN": "Access level",
        "TRANSLATION_CURRENT": "Uprawnienia"
    },
    {
        "NAME": "CARD_NUMBER",
        "TYPE": "TEXT",
        "MIN": "",
        "MAX": "",
        "DETAILS_EN": null,
        "DETAILS_CURRENT": null,
        "DEFAULT": "",
        "TRANSLATION_EN": "Card number",
        "TRANSLATION_CURRENT": "Numer karty"
    },
    {
        "NAME": "MODE",
        "TYPE": "ENUM",
        "MIN": "0",
        "MAX": "17",
        "DETAILS_EN": "Weighing|Parts counting  
|Deviations|PGC|Comparator|Vibratory Batcher|Vehicle scale|Dosing  
|Weighing animals|Mass  
control|Density|Formulations|Interactive|PGC|None|SQC|Transactions|  
Formulation orders",
        "DETAILS_CURRENT": "Ważenie|Liczenie  
sztuk|Odchyłki|KTP|Komparator|Dozownik Wibracyjny|Waga  
samochodowa|Dozowanie|Ważenie zwierząt|Kontrola  
masy|Gęstość|Receptury|Interaktywny|KTP|Brak|SQC|Transakcje|Zleceni  
a receptur",
        "DEFAULT": "14",
        "TRANSLATION_EN": "Change working mode",
        "TRANSLATION_CURRENT": "Zmień mod pracy"
    },
    {
        "NAME": "AUTO_MODE",
        "TYPE": "ENUM",
        "MIN": "0",
        "MAX": "1",
        "DETAILS_EN": "No|Yes",
        "DETAILS_CURRENT": "Nie|Tak",
        "DEFAULT": "0",
        "TRANSLATION_EN": "Automatically",
        "TRANSLATION_CURRENT": "Automatycznie"
    },
    {
        "NAME": "ACTIVE",
        "TYPE": "ENUM",
        "MIN": "0",
        "MAX": "1",
        "DETAILS_EN": "No|Yes",

```

```

        "DETAILS_CURRENT": "Nie|Tak",
        "DEFAULT": "1",
        "TRANSLATION_EN": "Active account",
        "TRANSLATION_CURRENT": "Konto aktywne"
    },
    {
        "NAME": "ID_WORKFLOW",
        "TYPE": "DB_IDENT",
        "MIN": "",
        "MAX": "",
        "DETAILS_EN": "WORKFLOW",
        "DETAILS_CURRENT": "WORKFLOW",
        "DEFAULT": "WORKFLOW",
        "TRANSLATION_EN": "Workflow",
        "TRANSLATION_CURRENT": "Proces identyfikacji"
    },
    {
        "NAME": "SURNAME",
        "TYPE": "TEXT",
        "MIN": "",
        "MAX": "",
        "DETAILS_EN": null,
        "DETAILS_CURRENT": null,
        "DEFAULT": "",
        "TRANSLATION_EN": "Name and surname",
        "TRANSLATION_CURRENT": "Imię i nazwisko"
    },
    {
        "NAME": "MIN",
        "TYPE": "NUMERIC",
        "MIN": "",
        "MAX": "",
        "DETAILS_EN": null,
        "DETAILS_CURRENT": null,
        "DEFAULT": "",
        "TRANSLATION_EN": "Min",
        "TRANSLATION_CURRENT": "Min"
    },
    {
        "NAME": "MAX",
        "TYPE": "NUMERIC",
        "MIN": "",
        "MAX": "",
        "DETAILS_EN": null,
        "DETAILS_CURRENT": null,
        "DEFAULT": "",
        "TRANSLATION_EN": "Max",
        "TRANSLATION_CURRENT": "Max"
    }
    ],
    "STS": "OK"
}

```


4. Information on Table - Records Quantity

Example: Users table

Inquiry:

```
{  
  "COMMAND": "DBINFO",  
  "TABLE": "USERS",  
  "PARAM": "COUNT"  
}
```

Response:

```
{  
  "COMMAND": "DBINFO",  
  "TABLE": "USERS",  
  "COUNT": "4",  
  "STS": "OK"  
}
```

5. Downloading Records

Example: Users table

Inquiry:

```
{
  "COMMAND": "DBREADRANGE",
  "TABLE": "USERS",
  "KEY": "1,4"
}
```

//CAUTION - in single inquiry concerning records range, the maximum records quantity should be 100 records

Response:

```
{
  "COMMAND": "DBREADRANGE",
  "TABLE": "USERS",
  "RECORD": [
    {
      "ID": "1",
      "NAME": "Administrator",
      "CODE": "1",
      "PSW": "1",
      "PERM": "4",
      "CARD_NUMBER": "0001015213022101",
      "MODE": "15",
      "AUTO_MODE": "1",
      "ACTIVE": "2",
      "ID_WORKFLOW": "0",
      "SURNAME": "",
      "MIN": "0",
      "MAX": "0"
    },
    {
      "ID": "3",
      "NAME": "Standardowy123",
      "CODE": "3333",
      "PSW": "1",
      "PERM": "2",
      "CARD_NUMBER": "0076000114013185",
      "MODE": "15",
      "AUTO_MODE": "1",
      "ACTIVE": "2",
      "ID_WORKFLOW": "0",
      "SURNAME": "",
      "MIN": "0",
      "MAX": "0"
    },
    {
      "ID": "2",
      "NAME": "Zaawansowany",
      "CODE": "2",
      "PSW": "1",
      "PERM": "3",
      "CARD_NUMBER": "0005000146024067",
      "MODE": "15",
      "AUTO_MODE": "1",
      "ACTIVE": "2",
      "ID_WORKFLOW": "0",

```

```
        "SURNAME": "",
        "MIN": "0",
        "MAX": "0"
    },
    {
        "ID": "5",
        "NAME": "testowy",
        "CODE": "",
        "PSW": "",
        "PERM": "1",
        "CARD_NUMBER": "",
        "MODE": "15",
        "AUTO_MODE": "1",
        "ACTIVE": "2",
        "ID_WORKFLOW": "0",
        "SURNAME": "",
        "MIN": "0",
        "MAX": "0"
    }
1,
"COUNT": "4",
"STS": "OK"
}
```

6. Records Editing

Example: Users table

KEY_COLUMN = NAME or CODE or ID (Unless a given column is not in a given table)

Inquiry:

```
{
  "COMMAND": "DBEDIT",
  "TABLE": "USERS",
  "KEY_COLUMN": "ID",
  "KEY": "5",
  "RECORD": {
    "ID": "5",
    "NAME": "Test",
    "CODE": "",
    "PSW": "",
    "PERM": "1",
    "CARD_NUMBER": "",
    "MODE": "15",
    "AUTO_MODE": "1",
    "ACTIVE": "2",
    "ID_WORKFLOW": "0",
    "SURNAME": "",
    "MIN": "0",
    "MAX": "0"
  }
}
```

Response:

```
{
  "COMMAND": "DBEDITID",
  "TABLE": "USERS",
  "KEY": "5",
  "STS": "OK"
}
```

7. Adding a New Record

Example: Users table

Inquiry:

```
{
  "COMMAND": "DBADD",
  "TABLE": "USERS",
  "RECORD": {
    "NAME": "New"
  }
}
```

Response:

```
{
  "COMMAND": "DBADD",
  "TABLE": "USERS",
  "RECORD": {
    "ID": "7",
    "NAME": "New",
    "CODE": "",
    "PSW": "",
    "PERM": "1",
    "CARD_NUMBER": "",
    "MODE": "15",
    "AUTO_MODE": "1",
    "ACTIVE": "2",
    "ID_WORKFLOW": "0",
    "SURNAME": "",
    "MIN": "0",
    "MAX": "0"
  },
  "STS": "OK"
}
```

8. Record Setting/Selection

Example: Users table

Possible selection by column:

KEY_COLUMN = NAME or CODE or ID (Unless a given column is not in a given table)

Inquiry:

```
{  
  "COMMAND": "DBSELECT",  
  "TABLE": "USERS",  
  "KEY": "New",  
  "KEY_COLUMN": "NAME"  
}
```

Response:

```
{  
  "COMMAND": "DBSELECT",  
  "TABLE": "USERS",  
  "STS": "OK"  
}
```

9. Record Deletion

Example: Users table

Possible selection by column:

KEY_COLUMN = NAME or CODE or ID (Unless a given column is not in a given table)

Inquiry:

```
{  
  "COMMAND": "DBDEL",  
  "TABLE": "USERS",  
  "KEY_COLUMN": "ID",  
  "KEY": "7"  
}
```

Response:

```
{  
  "COMMAND": "DBDELID",  
  "TABLE": "USERS",  
  "KEY": "7",  
  "STS": "OK"  
}
```

10. Balance/Scale Status Readout

Inquiry:

```
{  
  "COMMAND": "GET_STATUS"  
}
```

Response:

```
{  
  "Product": {  
    "id": "",  
    "name": "",  
    "code": "",  
    "guid": "",  
    "count": null  
  },  
  "Operator": {  
    "id": "",  
    "name": "",  
    "code": "",  
    "guid": "",  
    "count": null  
  },  
  "Client": {  
    "id": "",  
    "name": "",  
    "code": "",  
    "guid": "",  
    "count": null  
  },  
  "Warehouse_Dest": {  
    "id": "",  
    "name": "",  
    "code": "",  
    "guid": "",  
    "count": null  
  },  
  "Packages": [  
  ],  
  "Warehouse_Source": {  
    "id": "",  
    "name": "",  
    "code": "",  
    "guid": "",  
    "count": null  
  },  
  "WorkModeCurrent": "Ważenie",  
  "WorkModeEN": "Weighing",  
  "Batch_Number": "",  
  "Lot_Number": "",  
  "Min": 95,  
  "Min2": 0,  
  "Max": 105,  
  "Max2": 0  
}
```


11. Mass Readout

Inquiry:

```
{  
  "COMMAND": "GET_MASS"  
}
```

Response:

```
{  
  "NetAct": {  
    "Value": "7.2",  
    "Unit": "kg"  
  },  
  "NetCal": {  
    "Value": "7.2",  
    "Unit": "kg"  
  },  
  "Tare": "10",  
  "Range": "",  
  "Max": 3009,  
  "isStab": true,  
  "isTare": true,  
  "isZero": false,  
  "PlatformIndex": 0  
}
```

12. Single Record Download

Inquiry:

```
{  
  "COMMAND": "DBREADID",  
  "TABLE": "CLIENTS",  
  "KEY": "Radwag",  
  "KEY_COLUMN": "NAME"  
}
```

Response:

```
{  
  "COMMAND": "DBREADID",  
  "TABLE": "CLIENTS",  
  "KEY": "Radwag",  
  "KEY_COLUMN": "NAME",  
  "RECORD": {  
    "ID": "1",  
    "NAME": "Radwag",  
    "CODE": "1",  
    "TAX_ID": "",  
    "ADDRESS": "",  
    "POSTAL_CODE": "",  
    "CITY": "",  
    "DISCOUNT": "0",  
    "ID_LABEL": "0"  
  },  
  "STS": "OK"  
}
```

13. Taring/Zeroing

```
{  
  "COMMAND" : "TARE"  
}  
  
{  
  "COMMAND" : "TARE"  
  "STS" : "OK"  
}  
  
{  
  "COMMAND" : "ZERO"  
}  
  
{  
  "COMMAND" : "ZERO"  
  "STS" : "OK"  
}
```

Caution: The command initiates taring/zeroing start only. The status determines acceptance of the command for execution only and is not synonymous with the command execution.

14. Example of Use

In the below example, few records will be created and selected: operator, customer and two products.

Inquiries:

```
{
  "COMMAND": "DBADD",
  "TABLE": "PRODUCTS",
  "RECORD": {
    "NAME": "Sample product 1"
  }
}

{
  "COMMAND": "DBADD",
  "TABLE": "PRODUCTS",
  "RECORD": {
    "NAME": "Sample product 2"
  }
}

{
  "COMMAND": "DBADD",
  "TABLE": "USERS",
  "RECORD": {
    "NAME": "Sample User 1",
    "PSW": "123"
  }
}

{
  "COMMAND": "DBADD",
  "TABLE": "CLIENTS",
  "RECORD": {
    "NAME": "Sample client 1"
  }
}

{
  "COMMAND": "DBSELECT",
  "TABLE": "CLIENTS",
  "KEY": "Sample client 1",
  "KEY_COLUMN": "NAME"
}

{
  "COMMAND": "DBSELECT",
  "TABLE": "USERS",
  "KEY": "Sample User 1",
  "KEY_COLUMN": "NAME"
}

{
  "COMMAND": "DBSELECT",
  "TABLE": "PRODUCTS",
  "KEY": "Sample product 2",
  "KEY_COLUMN": "NAME"
}
```

Downloading of the weighing records performed using balance/scale.

Inquiry:

```
{
  "COMMAND": "DBINFO",
  "TABLE": "WEIGHMENTS",
  "PARAM": "COUNT"
}
```

Response:

```
{
  "COMMAND": "DBINFO",
  "TABLE": "WEIGHMENTS",
  "COUNT": "3",
  "STS": "OK"
}
```

Inquiry:

```
{
  "COMMAND": "DBREADRANGE",
  "TABLE": "WEIGHMENTS",
  "KEY": "1,3"
}

{
  "COMMAND": "DBREADRANGE",
  "TABLE": "WEIGHMENTS",
  "RECORD": [
    {
      "ID": "5",
      "TIME": "2017-11-21 09:28:01",
      "MASS_CAL": "11 g",
      "MASS_ACT": "11 g",
      "TARE": "0 g",
      "PLATFORM": "1",
      "CHECKWEIGHING": "0",
      "ID_USER": "1",
      "ID_PRODUCT": "3",
      "ID_CLIENT": "2",
      "ID_VEHICLE": "1",
      "ID_PACKAGE": "0",
      "ID_WH_DEST": "0",
      "ID_WH_SOURCE": "2",
      "LOT": "",
      "BATCH": "",
      "COUNTER_ST": "0",
      "COUNTER_USER": "0",
      "REF_MASS": "0 g",
      "UNIT_MASS": "0 g",
      "PRICE": "0 ",
      "VAT": "0",
      "DISCOUNT": "0",
      "VALUE": "--- ",
      "VAR1": "",
      "VAR2": "",
      "VAR3": "",
      "MIN": "9",
      "MAX": "11",
      "MIN2": "0",
      "MAX2": "0"
    },
    {

```

```

        "ID": "3",
        "TIME": "2017-11-21 09:27:00",
        "MASS_CAL": "30 g",
        "MASS_ACT": "30 g",
        "TARE": "0 g",
        "PLATFORM": "1",
        "CHECKWEIGHING": "0",
        "ID_USER": "1",
        "ID_PRODUCT": "2",
        "ID_CLIENT": "2",
        "ID_VEHICLE": "1",
        "ID_PACKAGE": "0",
        "ID_WH_DEST": "0",
        "ID_WH_SOURCE": "2",
        "LOT": "",
        "BATCH": "",
        "COUNTER_ST": "0",
        "COUNTER_USER": "0",
        "REF_MASS": "0 g",
        "UNIT_MASS": "0 g",
        "PRICE": "0 ",
        "VAT": "0",
        "DISCOUNT": "0",
        "VALUE": "--- ",
        "VAR1": "",
        "VAR2": "",
        "VAR3": "",
        "MIN": "28.95",
        "MAX": "33.05",
        "MIN2": "0",
        "MAX2": "0"
    },
    {
        "ID": "1",
        "TIME": "2017-11-21 09:26:18",
        "MASS_CAL": "154 g",
        "MASS_ACT": "154 g",
        "TARE": "0 g",
        "PLATFORM": "1",
        "CHECKWEIGHING": "0",
        "ID_USER": "1",
        "ID_PRODUCT": "1",
        "ID_CLIENT": "2",
        "ID_VEHICLE": "1",
        "ID_PACKAGE": "0",
        "ID_WH_DEST": "0",
        "ID_WH_SOURCE": "2",
        "LOT": "",
        "BATCH": "",
        "COUNTER_ST": "0",
        "COUNTER_USER": "0",
        "REF_MASS": "0 g",
        "UNIT_MASS": "0 g",
        "PRICE": "0 ",
        "VAT": "0",
        "DISCOUNT": "0",
        "VALUE": "--- ",
        "VAR1": "",
        "VAR2": "",
        "VAR3": "",
        "MIN": "151.5",
        "MAX": "168.5",
        "MIN2": "0",

```

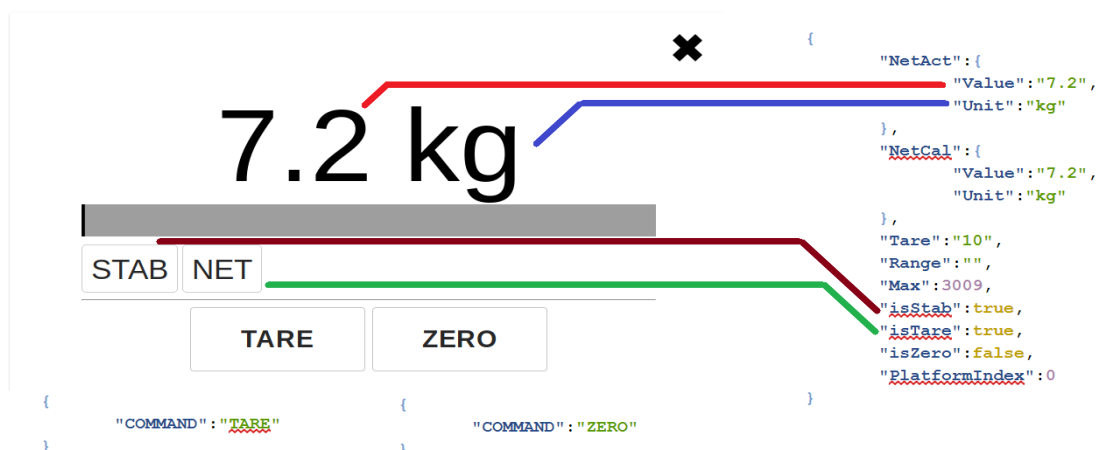
```
        "MAX2": "0"
    }
1,
"COUNT": "3",
"STS": "OK"
}
```

15. EWI - Extended Web Interface

The module enables creating your own web page and running it on the weighing terminal. A simple example is displaying mass received from the weighing terminal on a html web page and creating customized interface.



Data for mass readout is downloaded using single GET_MASS command. Zeroing and taring functions are downloaded using ZERO and TARE commands.



YouTube: <http://bit.ly/2BQeiYF>

Github: <https://github.com/Radwag/EWI>

