

Communication protocol for IDECON weigher - OPC-UA.

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1 Introduction

IDECON weighers provide a communication channel based on the OPC UA standard through which they display useful information, for example, for production monitoring.

All information displayed by the weigher is read-only.

The weigher does not provide for receiving commands.

The configuration channel must be activated and configured before being used.

Connection to the weigher is made through the scale's IP address.

The general syntax is: `opc.tcp://<weigher address>:<port>`.

The address of the weigher depends on how it was configured.

Example:

```
opc.tcp://192.168.1.10:4840
```

2 OPC UA

2.1 Appearance and configuration

- In order to access the configuration page, follow the path below:
 - Settings
 - Setup
 - General
 - Accessories
 - Communication
 - Opc-ua
- The configuration includes:
 - Enabling the protocol
 - Weigher refresh time (reserved parameter)
 - Debug level (reserved parameter)
 - Variables to expose (in 64-bit mask format)
 - Combobox to facilitate the calculation of the bit mask of the exposed variables

2.2 How to obtain the values of the variables.

To obtain the value of a variable it is possible to read the value as needed or to subscribe to receive notification of the change in the value of the variable.

All OPC-UA variables are updated only if the value changes, if the value of the variable does not change no notification is sent

Example (subscribe LastWeight_mg):

```
; product transit 100g
LastWeight_mg=100000
; product transit 101g
LastWeight_mg=101000
; product transit 101g
; no change in weight therefore no notification of changes
```

Esempio (subscribe LastWeight_mg e gTotalPieces):

```
; product transit 100g
LastWeight_mg=100000
gTotalPieces=325
; product transit 101g
LastWeight_mg=101000
gTotalPieces=326
; product transit 101g
; the product counter increases so I know that a product with the same weight
as the previous one has passed through
gTotalPieces=327
```

2.3 Variables currently managed

The production variables are duplicated, one set for the global batch (the name begins with g) and one set for the split batch (the name begins with s).

nome	tipo dato	descrizione
MotorRunning	UINT	0 = conveyor belts stopped 1 = conveyor belts in adjustment 2 = fully operational conveyor belts 3 = power saving 4 = restart from power saving
SerialNumber	STRING	Serial no.
LineCode	STRING	Line code
User	STRING	Active user
Recipe	STRING	Active recipe
ProductCode	STRING	Product code
ActualThroughput	UINT	Actual throughput
LastWeight_mg	UINT	Last weight detected expressed in mg
LastWeightFlags	UINT	Last weight flags (see user manual)
BatchOpened	UINT	Batch opened/closed
BatchCode	STRING	Batch code
ProductionOrder	STRING	Production order
ExtraField_1	STRING	Extra field 1
ExtraField_2	STRING	Extra field 2
Global batch		
gTotalPieces	UINT	Total pieces
gTotalPiecesApproved	UINT	Accepted products
gTotalPieces++	UINT	Total pieces ++
gTotalPieces+	UINT	Total pieces +
gTotalPiecesOK	UINT	Total pieces OK
gTotalPiecesOK+	UINT	Total pieces OK+
gTotalPiecesOK-	UINT	Total pieces OK-
gTotalPieces-	UINT	Total pieces -
gTotalPieces--	UINT	Total pieces --
gAverageWeight	DOUBLE	Batch average
gMeanError	DOUBLE	Mean error
gStandardDeviation	DOUBLE	Standard deviation
Split batch		
sTotalPieces	UINT	Total pieces
sTotalPiecesApproved	UINT	Accepted products
sTotalPieces++	UINT	Total pieces ++
sTotalPieces+	UINT	Total pieces +
sTotalPiecesOK	UINT	Total pieces OK
sTotalPiecesOK+	UINT	Total pieces OK+
sTotalPiecesOK-	UINT	Total pieces OK-
sTotalPieces-	UINT	Total pieces -

sTotalPieces--	UINT	Total pieces --
sAverageWeight	DOUBLE	Batch average
sMeanError	DOUBLE	Mean error
sStandardDeviation	DOUBLE	Standard deviation
sBatchNumber	UINT	Progressive number of the split batch

NOTE:



Currently the OPC UA server is restarted every time the configuration page settings are saved. Any connected clients must expect this condition otherwise incorrect data may occur. Each time you save the settings you should make a connection again and check that any previously reserved variables are still available and with the same ID.

It is possible to request the value of a variable or receive notification of its change with a frequency not exceeding 1 request every 1.2 seconds.