

**RETAIL**  
**Jeroen van Blitterswijk**

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USER MANUAL

METTLER TOLEDO OPOS DRIVERS

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| Version  | Date      | Author | Remarks  |
|----------|-----------|--------|--|
| 1.13.84  | 3-3-2010  | JBL    | Initial version  |
| 1.13.109 | 11-7-2012 | JBL    | New version. See release information in appendix F   |
| 1.13.128 | 24-1-2013 | JBL    | Added appendix G<br>Added function 3005 and 3006 to appendix A.<br>Modified capability ZeroScale in appendix E for VCODisp |

This document is about installation and usage of the OPOS drivers. This document does not include any reference to the Unified POS specification. The reader of this document should understand the Unified POS basics<sup>1</sup>.

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<sup>1</sup> For information about UnifiedPOS see <http://www.nrf-arts.org/UnifiedPOS> and <http://monroecs.com/unifiedpos.htm>

## **Introduction**

Service Objects are current to OPOS version 1.13, published in July 2009. They are fully compatible with the Unified POS Retail Peripheral Architecture, version 1.13 and the OPOS appendix to that specification. The Service Objects support the following Mettler Toledo communication dialogs.

- Mettler Toledo Price Computing Checkout scales that supports dialog 6 protocol
- Mettler Toledo Weight Only scales that supports the 8217 protocol
- Mettler Toledo VCODisp solution

Because of the number of different checkout scales (VIVA, DIVA, DURA, 8217 etc) the Service Objects are not named after their devices, but after their protocol. For the weight-only devices (with a single-lined weight display), the device has to be configured in order to support the 8217 protocol. The price-computing scales (with a multi-line display) have to be configured to support the dialog6 protocol. The VCODisp solution is the solution where a display is integrated on the PC (so no external display available).

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## **Installation**

### ***Running the Install***

Installation can be performed in either of two ways : using a GUI intallation which will guide you step by step or as a silent install from the console prompt.

### **GUI Installation**

To install, please perform the following steps

1. Navigate using the explorer to the folder that contains the setup
2. Double-click **setup.exe** to run the install program
3. Follow the on-screen instructions to complete the installation

### **Silent Install from the command prompt**

To perform a “silent install”, open a command windows and navigate to the directory containing the setup.exe file. Type the following command to execute the install process :

```
setup.exe /s
```

## Utilities

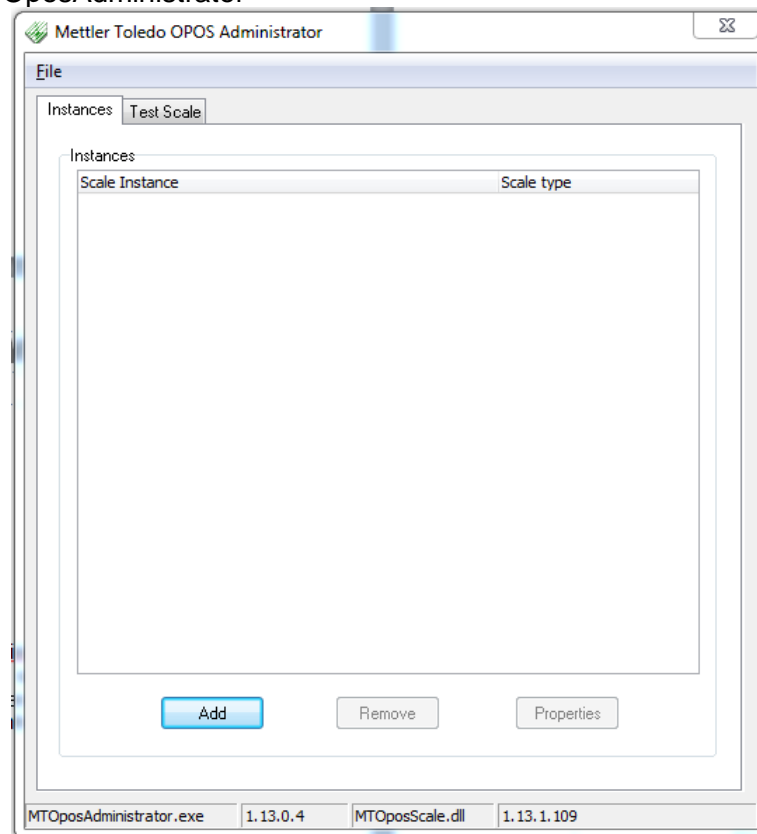
The installation package contains a utility called MTOposAdministrator that provides the ability to quickly connect and test the attached Mettler Toledo scale with the Mettler Toledo Service Objects. The OPOS Administrator is a fully operational OPOS application which exercises the communication through the Common Control and Service Objects to the physical device.

### ***Define device instances***

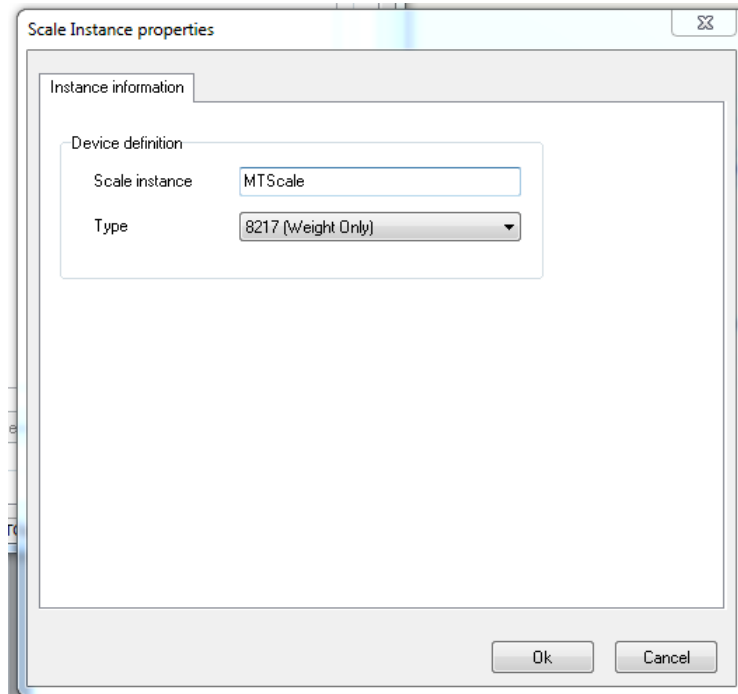
Before the OPOS drivers can be used, instances should be defined. Use MTOposAdministrator to do this. You can start this application by using Start → All programs → Mettler Toledo → OPOS → MTOposAdministrator

In order to define a instance, execute the following steps

1. Start the MTOposAdministrator



2. Press the add button



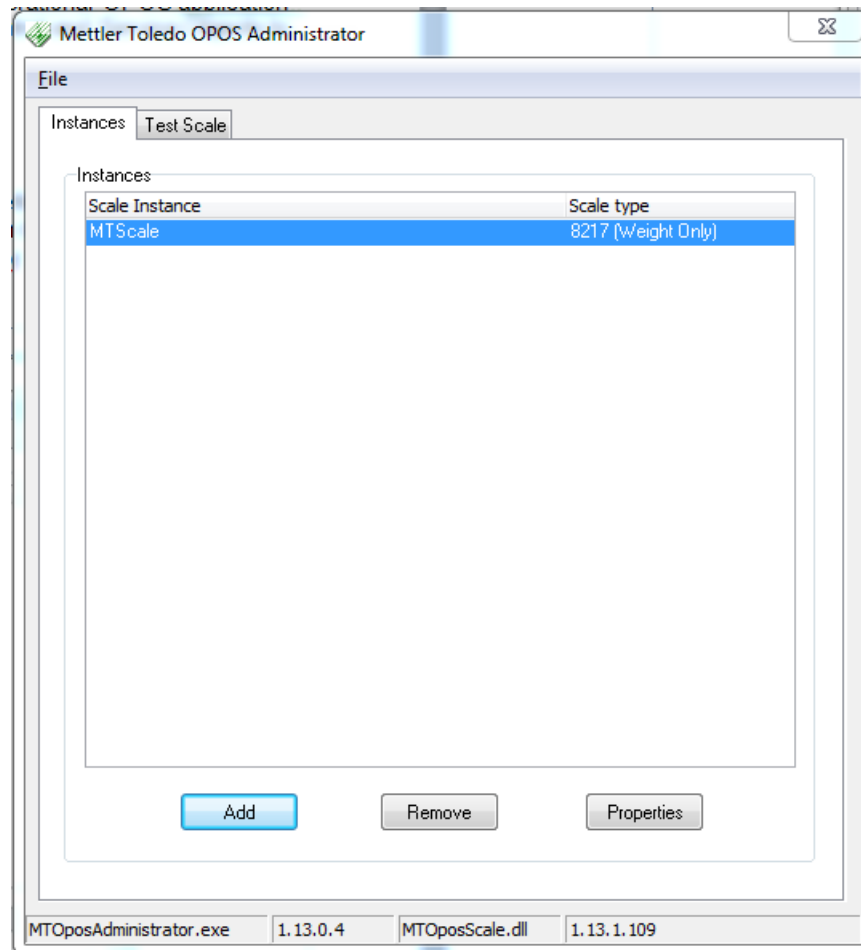
3. Define the scale instance name (here MTScale). This name should also be used by your OPOS application in order to connect to the device.

4. Define the scale type. The following possibilities

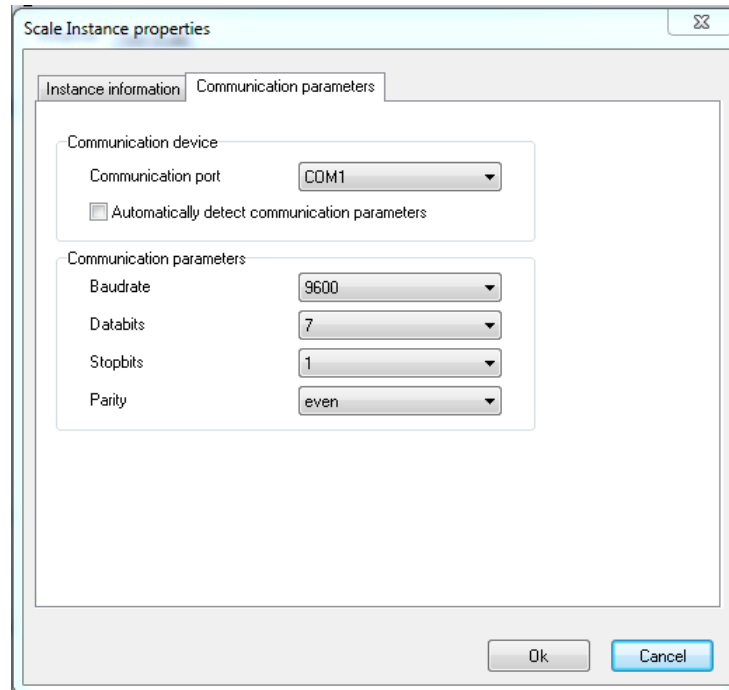
- 8217 (weight only)
- dialog6 (price computing)
- VCODisp

Depending on the selection here, the content of the communication parameters sheet will change.

5. Press Ok, the instance will be created and listed in the scale instances list.



6. If you want to change the communication parameters, select the instance and press the properties button.



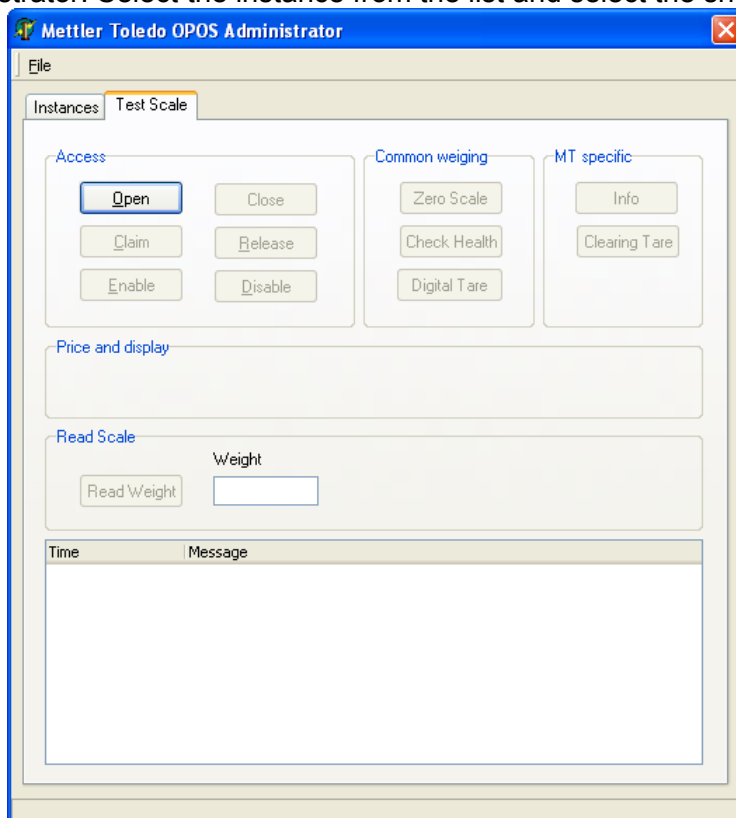
7. If you are not sure about the communication parameters, then select "Automatically detect communication parameters". The driver will try to find out the best possible communication parameters.
8. Press the button Ok in order to save the instance.

You can more instances. However, more instances to the same communication port will lead to problems when using the instance at the same time.



## ***Test a device instance***

Because the OPOS administrator is a fully functional OPOS application, the application does contain the OPOS methods and properties. In order to test an instance, start the MTOposAdministrator. Select the instance from the list and select the sheet "Test Scale".



The access group box does contain the same functions as should be executed normally in order to access the device. As long as the device is not opened, claimed and enabled, you will not be able to execute the common functions. All return values from the methods are displayed in the listbox at the bottom of the application.

## **Weight only devices**

In order to request the weight, the following steps should be exercised

1. Press the button "Open"

| Time     | Message             |
|----------|---------------------|
| 14:16:51 | Open successful [0] |

2. Press the button "Claim". If the claim is not successful then an other application is using the same instance.

| Time     | Message              |
|----------|----------------------|
| 14:17:01 | Claim successful [0] |
| 14:16:51 | Open successful [0]  |

3. Press the button "Enable"

| Time     | Message                   |
|----------|---------------------------|
| 14:17:14 | Device succesfull enabled |
| 14:17:01 | Claim successful [0]      |
| 14:16:51 | Open successful [0]       |

4. After the device is successfully enabled you can request the weight from the scale

**Read Scale**

Weight

| Time     | Message                    |
|----------|----------------------------|
| 14:17:22 | ReadWeight successful      |
| 14:17:14 | Device successfull enabled |
| 14:17:01 | Claim successful [0]       |
| 14:16:51 | Open successful [0]        |

So the weigh in the platform is 70 gramm

## Price computing devices

In the case you want to test a price calculating scale, you need to do an additional step. This because first the unit price needs to be defined. After claiming (see weight only devices)

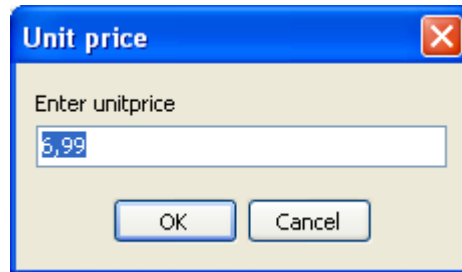
**Price and display**

**Read Scale**

Weight Price Amount

| Time     | Message                         |
|----------|---------------------------------|
| 14:21:10 | Device succesfull enabled       |
| 14:21:09 | Claim successful [0]            |
| 14:21:09 | Open successful [0]             |
| 14:20:58 | Device closed successfully [%d] |
| 14:17:22 | ReadWeight successful           |
| 14:17:14 | Device succesfull enabled       |
| 14:17:01 | Claim successful [0]            |
| 14:16:51 | Open successful [0]             |

1. Press the "Unit Price" button



2. Enter the unit price and press ok.

| Time     | Message                         |
|----------|---------------------------------|
| 14:23:06 | Set Unitprice to [6,99]         |
| 14:21:10 | Device succesfull enabled       |
| 14:21:09 | Claim successful [0]            |
| 14:21:09 | Open successful [0]             |
| 14:20:58 | Device closed successfully [%d] |
| 14:17:22 | ReadWeight successful           |
| 14:17:14 | Device succesfull enabled       |
| 14:17:01 | Claim successful [0]            |
| 14:16:51 | Open successful [0]             |

3. If you now request the weight again, then you will see not only the weight but also the calculated price received from the device (in this case 0,60)

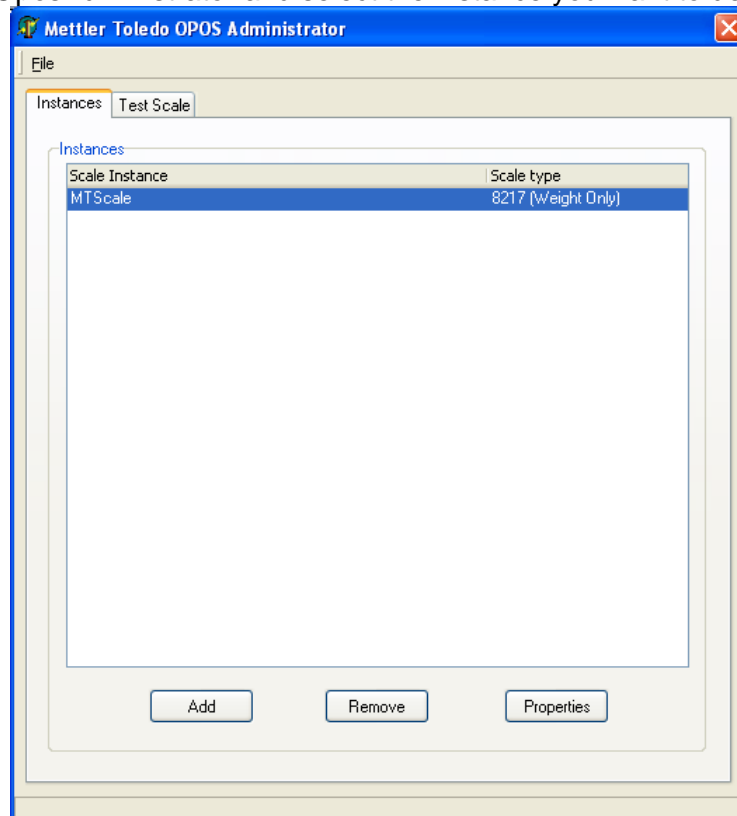
[Read Scale](#)

|  |          |       |        |
|--|----------|-------|--------|
| <input type="button" value="Read Weight"/> | Weight   | Price | Amount |
|  | 0,086 kg | 6,99  | 0,60   |

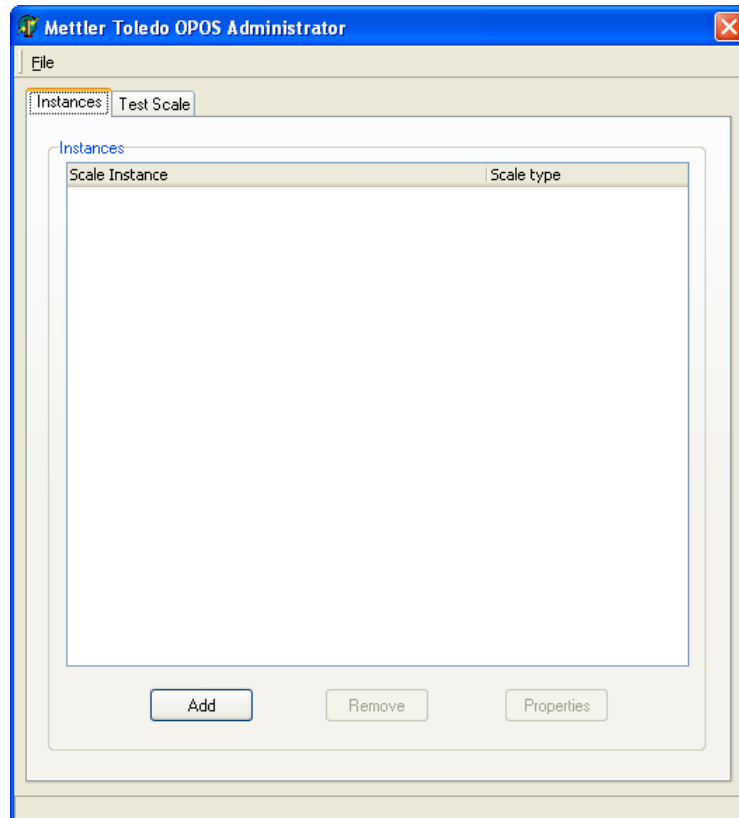
## ***Remove a device instance***

Using the MTOposAdministrator it is only possible to delete Mettler Toledo instances. In order to delete an instance, exercise the following steps

1. Start the MTOposAdministrator and select the instance you want to delete



2. Press the button remove



3. The instance is remove and cannot be used anymore

## **Appendix**

**Appendix A: DirectIO Command Support**

| DirectIO name   | IO number | Scale protocol |          |         |
|---|-----------|----------------|----------|---------|
|   | Interface | 8217           | Dialog 6 | VCODisp |
| Clear Tare  | 3001      | •              |          |         |
| Reset Scale Interface   | 3002      |                | •        | •       |
| Display count article (parameter string = count article name)                 | 3003      |                | •        |         |
| Display clear   | 3004      |                | •        |         |
| Zero scale  | 3005      |                |          | •       |
| Tare scale  | 3006      |                |          | •       |
| Activate display version info   | 4000      |                | •        | •       |
| Deactivate display version info   | 4001      |                | •        | •       |
| Request full version number (parameter string = full version)                 | 5000      | •              | •        | •       |
| Request build number only from full version (parameter string = build number) | 5001      | •              | •        | •       |



**Appendix B: Registry protocol dialog6**

| <b>Description</b>  | <b>Name</b> | <b>Type</b> | <b>Possible values</b>   |
|---|-------------|-------------|--|
| Service object name   | (default)   | REG_SZ      | MTOposScale.OPOSDialog6  |
| Autodetect communication parameters                           | AutoDetect  | REG_DWORD   | 0 = disable<br>1 = enable  |
| Communication baudrate  | Baudrate    | REG_DWORD   | 1200 = 1200 bps<br>2400 = 2400 bps<br>4800 = 4800 bps<br>9600 = 9600 bps |
| Communication databits  | Databits    | REG_DWORD   | 7 = 7 bits<br>8 = 8 bis  |
| Communication logging   | Logging     | REG_DWORD   | 0 = disable  |
| Communication parity  | Parity      | REG_DWORD   | 0 = none<br>1 = odd<br>2 = even  |
| Communication port  | Port        | REG_DWORD   | 1 = COM1<br>2 = COM2<br>x = COMx   |
| Service DLL name  | Service     | REG_SZ      | MTOPOS~1.DLL   |
| Communication stopbits  | Stopbits    | REG_DWORD   | 1 = 1 stopbit<br>2 = 2 stopbits  |
| DLL version on the moment the instance is created or modified | Version     | REG_SZ      | 1.13.0.14 (or actual DLL version)  |

**Appendix C: Registry protocol 8217**

| <b>Description</b>  | <b>Name</b> | <b>Type</b> | <b>Possible values</b>   |
|---|-------------|-------------|--|
| Service object name   | (default)   | REG_SZ      | MTOposScale.OPOS8217   |
| Autodetect communication parameters                           | AutoDetect  | REG_DWORD   | 0 = disable<br>1 = enable  |
| Communication baudrate  | Baudrate    | REG_DWORD   | 1200 = 1200 bps<br>2400 = 2400 bps<br>9600 = 9600 bps<br>19200 = 19200 bps |
| Communication databits  | Databits    | REG_DWORD   | 7 = 7 bits<br>8 = 8 bis  |
| Communication logging   | Logging     | REG_DWORD   | 0 = disable  |
| Communication parity  | Parity      | REG_DWORD   | 0 = none<br>1 = odd<br>2 = even  |
| Communication port  | Port        | REG_DWORD   | 1 = COM1<br>2 = COM2<br>x = COMx   |
| Service DLL name  | Service     | REG_SZ      | MTOPOS~1.DLL   |
| Communication stopbits  | Stopbits    | REG_DWORD   | 1 = 1 stopbit<br>2 = 2 stopbits  |
| DLL version on the moment the instance is created or modified | Version     | REG_SZ      | 1.13.0.14 (or actual DLL version)  |

***Appendix D: Registry protocol VCODisp***

| <b>Description</b>  | <b>Name</b>  | <b>Type</b> | <b>Possible values</b>                 |
|---|--------------|-------------|--|
| Service object name   | (default)    | REG_SZ      | MTOposScale.OPOSVCOPos                 |
| Pipe name for receiving information                           | PipeReceive  | REG_SZ      | \\.\pipe\VCOOut                        |
| Pipe name for sending information                             | PipeTransmit | REG_SZ      | \\.\pipe\VCOIn                         |
| VCODisp application name as displayed in the taskmanager      | VCOAppName   | REG_SZ      | Vcodisp.exe                            |
| VCODisp application start command                             | VCOAppStart  | REG_SZ      | Vcodispstrchk.exe (including pathname) |
| Service DLL name  | Service      | REG_SZ      | MTOPOS~1.DLL                           |
| DLL version on the moment the instance is created or modified | Version      | REG_SZ      | 1.13.0.14 (or actual DLL version)      |

## ***Appendix E: Capabilities***

This table shows the capabilities of the different Mettler Toledo OPOS scales.

| Property name             | Scale protocol |          |         |
|---------------------------|----------------|----------|---------|
|                           | 8217           | Dialog 6 | VCODisp |
| CapCompareFirmwareVersion | No             | No       | No      |
| CapDisplay                | Yes            | Yes      | Yes     |
| CapDisplayText            | No             | Yes      | Yes     |
| CapPriceCalculating       | No             | Yes      | Yes     |
| CapStatusUpdate           | No             | No       | No      |
| CapStatisticsReporting    | No             | No       | No      |
| CapTareWeight             | Yes            | Yes      | Yes     |
| CapZeroScale              | Yes            | No       | Yes     |
| CapUpdateFirmware         | No             | No       | No      |
| CapUpdateStatistics       | No             | No       | No      |

***Appendix F: Release information***

| <b>Release</b>    | <b>Modifications</b>  |
|-------------------|---|
| <b>1.13.0.109</b> | <ul style="list-style-type: none"><li>- Implemented ScaleNotInMotionSinceLastWeighing</li><li>- Modified identification in dialog6</li><li>- All VCODisp settings are stored now in the registry</li><li>- VCODisp updated to version 1.02.09</li></ul> |
| <b>1.13.0.127</b> | <ul style="list-style-type: none"><li>- Implemented ZeroScale and TareScale functionality for VCODisp</li><li>- VCODisp updated to version 1.02.11</li></ul>  |

**Appendix G : Implemented error codes****OPOS Error Values**

According to the UnifiedPOS manual the following errornames and values are defined.

| OPOS Error name        | OPOS error value | Description   |
|------------------------|------------------|---|
| OPOS_SUCCESS           | 0                | Command is executed without problems  |
| OPOS_E_NOTCLAIMED      | 103              | Device is not claimed and can not be used.  |
| OPOS_E_DISABLED        | 105              | Device is disabled, please enable it before use   |
| OPOS_E_ILLEGAL         | 106              | Method is not implemented. Check capabilities properties before using a method.                   |
| OPOS_E_NOEXIST         | 109              | Device does not exist   |
| OPOS_E_TIMEOUT         | 112              | Communication timeout   |
| OPOS_E_EXTENDED        | 114              | Extended error, please check the extended resultcode property for more information (errors > 200) |
| OPOS_ESCAL_OVERWEIGHT  | 201              | Scale is in overweight  |
| OPOS_ESCAL_UNDERZERO   | 202              | Scale is below zero   |
| OPOS_ESCAL_SAMEWEIGHT  | 203              | Product is not removed from scale. No weight deviation seen.                                      |
| OPOS_OR_S_SPECIFIC     | 450              | Undefined error during opening device.  |
| OPOS_OR_S_CONFIG       | 403              | No configuration for device   |
| OPOS_OR_S_NOTSUPPORTED | 402              | Device not supported  |

The names are used in the tables below;

**Protocol dialog 6**

The following result codes are implemented in the service object for the dialog6 protocol.

| <b>Function</b>        | <b>Result (OPOS errorname)</b> |
|------------------------|--------------------------------|
| DirectIO               | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_FAILURE                 |
|                        | OPOS_SUCCESS                   |
| OpenService            | OPOS_E_NOEXIST                 |
|                        | OPOS_ORIS_CONFIG               |
|                        | OPOS_ORIS_NOTSUPPORTED         |
|                        | OPOS_SUCCESS                   |
| ReadWeight             | OPOS_ORIS_SPECIFIC             |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_ESCAL_SAME_WEIGHT         |
|                        | OPOS_ESCAL_OVERWEIGHT          |
|                        | OPOS_ESCAL_UNDER_ZERO          |
|                        | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_TIMEOUT                 |
|                        | OPOS_E_FAILURE                 |
| CheckHealth            | OPOS_E_DISABLED                |
|                        | OPOS_E_NOTCLAIMED              |
| ClaimDevice            | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_E_TIMEOUT                 |
| ClearInput             | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_ILLEGAL                 |
| DisplayText            | OPOS_SUCCESS                   |
|                        | OPOS_E_ILLEGAL                 |
| ReleaseDevice          | OPOS_E_NOTCLAIMED              |
|                        | OPOS_E_ILLEGAL                 |
| ResetStatistics        | OPOS_E_ILLEGAL                 |
| RetrieveStatistics     | OPOS_E_ILLEGAL                 |
| UpdateFirmware         | OPOS_E_ILLEGAL                 |
| UpdateStatistics       | OPOS_E_ILLEGAL                 |
| ZeroScale              | OPOS_E_ILLEGAL                 |
| CompareFirmwareVersion | OPOS_E_ILLEGAL                 |

**Protocol 8217**

The following result codes are implemented in the service object for the 8217 protocol.

| <b>Function</b>        | <b>Result (OPOS errorname)</b> |
|------------------------|--------------------------------|
| DirectIO               | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_FAILURE                 |
|                        | OPOS_SUCCESS                   |
| OpenService            | OPOS_E_NOEXIST                 |
|                        | OPOS_ORIS_CONFIG               |
|                        | OPOS_ORIS_NOTSUPPORTED         |
|                        | OPOS_SUCCESS                   |
| ReadWeight             | OPOS_ORIS_SPECIFIC             |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_ESCAL_SAME_WEIGHT         |
|                        | OPOS_ESCAL_OVERWEIGHT          |
|                        | OPOS_ESCAL_UNDER_ZERO          |
|                        | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_TIMEOUT                 |
|                        | OPOS_E_FAILURE                 |
| ZeroScale              | OPOS_E_DISABLED                |
|                        | OPOS_E_NOTCLAIMED              |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_E_DISABLED                |
|                        | OPOS_E_NOTCLAIMED              |
| CheckHealth            | OPOS_ESCAL_UNDER_ZERO          |
|                        | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
| ClaimDevice            | OPOS_E_TIMEOUT                 |
|                        | OPOS_E_ILLEGAL                 |
| ClearInput             | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
| DisplayText            | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
| ReleaseDevice          | OPOS_E_NOTCLAIMED              |
|                        | OPOS_E_ILLEGAL                 |
| ResetStatistics        | OPOS_E_ILLEGAL                 |
| RetrieveStatistics     | OPOS_E_ILLEGAL                 |
| UpdateFirmware         | OPOS_E_ILLEGAL                 |
| UpdateStatistics       | OPOS_E_ILLEGAL                 |
| ZeroScale              | OPOS_E_ILLEGAL                 |
| CompareFirmwareVersion | OPOS_E_ILLEGAL                 |



**VCODisp**

The following result codes are implemented in the service object for the VCODisp protocol.

| <b>Function</b>        | <b>Result (OPOS errorname)</b> |
|------------------------|--------------------------------|
| DirectIO               | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_FAILURE                 |
|                        | OPOS_SUCCESS                   |
| OpenService            | OPOS_E_NOEXIST                 |
|                        | OPOS_ORIS_CONFIG               |
|                        | OPOS_ORIS_NOTSUPPORTED         |
|                        | OPOS_SUCCESS                   |
| ReadWeight             | OPOS_ORIS_SPECIFIC             |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_ESCAL_SAME_WEIGHT         |
|                        | OPOS_ESCAL_OVERWEIGHT          |
|                        | OPOS_ESCAL_UNDER_ZERO          |
|                        | OPOS_E_ILLEGAL                 |
|                        | OPOS_E_TIMEOUT                 |
|                        | OPOS_E_FAILURE                 |
| ZeroScale              | OPOS_E_DISABLED                |
|                        | OPOS_E_NOTCLAIMED              |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_E_DISABLED                |
| CheckHealth            | OPOS_E_NOTCLAIMED              |
|                        | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
| ClaimDevice            | OPOS_E_TIMEOUT                 |
|                        | OPOS_E_ILLEGAL                 |
| ClearInput             | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
| DisplayText            | OPOS_E_ILLEGAL                 |
|                        | OPOS_SUCCESS                   |
|                        | OPOS_E_ILLEGAL                 |
| ReleaseDevice          | OPOS_E_NOTCLAIMED              |
|                        | OPOS_E_ILLEGAL                 |
| ResetStatistics        | OPOS_E_ILLEGAL                 |
| RetrieveStatistics     | OPOS_E_ILLEGAL                 |
| UpdateFirmware         | OPOS_E_ILLEGAL                 |
| UpdateStatistics       | OPOS_E_ILLEGAL                 |
| ZeroScale              | OPOS_E_ILLEGAL                 |
| CompareFirmwareVersion | OPOS_E_ILLEGAL                 |

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**METTLER TOLEDO**