

# SIEMENS

## Integration of SIWAREX CS (7MH4910-0AA01) Electronic Weighing System into SIMOTION

Various head modules providing different scopes of functions can be used with the distributed peripheral system ET 200S. The scope of communication available with SIWAREX CS and the diagnostic scope depend on the individual head module (IM151-1).

In the simplest configuration with the IM151-1 basic or standard head module, the scales are set and adjusted exclusively with the SIWATOOL CS PC program. In this case, only the weighing result combined with status information is available in the SIMOTION.

When using the head module providing advanced features, the SIWAREX CS can be parameterized both via SIWATOOL CS and via SIMOTION. In this case, all weighing parameters can be accessed via the SIMOTION data block communication features.

For more detailed information refer to the SIWAREX CS and ET200S equipment manuals.

By means of the head module providing advanced features, the process data (weighing result) as well as the data block communication (weighing parameters) are read in the included ST program (Siw\_CS.st, zip file).

# SIEMENS

The following data blocks are read out as an example:

- DS 3 adjustment parameters
- DS 4 limit parameters
- DS 9 information on the module
- DS 30 process values
  
- The DS 4 limit parameter is also written.

The program is independent of the corresponding SIMOTION platform.

See also **Article ID: 11886029**

“Compatibility list of peripheral modules which can be used with SIMOTION“

## **Program description:**

The SIWAREX CS module is configured with logic address 696.  
Two I/O variables have been specified for the project.

<b><u>Name</u></b>	<b><u>Address</u></b>	<b><u>Data type</u></b>	<b><u>Field length</u></b>
siwarex_in	PIB 696	Array	8
siwarex_out	PQB 696	Array	8

Process data is accessed in the “background” routine integrated into the background task.

- The **siwarex\_refresh\_counter** variable indicates the SIWAREX refresh counter.  
SIWAREX CS performs an internal update of the values every 20 ms. Each update creates a number which may be used like a time stamp in the SIMOTION CPU.
- The **siwarex\_net** variable indicates the current net weight.

All input data is available in the **siwarex\_input** array:

```
siwarex_input [0] = reserved  
siwarex_input [1] = refresh counter (0...127)  
siwarex_input [2] = reserved  
siwarex_input [3] = asynchronous error info (bit-wise)  
siwarex_input [4] = process value (gross/net weight by default)  
siwarex_input [5] = process value (gross/net weight by default)  
siwarex_input [6] = status  
siwarex_input [7] = status
```

# SIEMENS

Data block communication (weighing parameters) is processed via the motion tasks.  
4 examples are illustrated below. Further data blocks required for the weighing function may be read and written (if required) according to the same principle.

- **Data block 3 “Adjustment parameters“** is read in Motion Task 1 (motion\_1 routine).  
The readout is started by setting the **DS3\_Start** variable to 1.  
**DS3\_Read\_functionResult** indicates the result of the function  
**DS3\_Read\_dataLength** indicates the data length read  
**DS3\_Read\_data** indicates data read  
The **Counter\_MT1** variable can be used to check whether the task has been started.
- **Data block 9 “Module Info“** is read in Motion Task 2 (motion\_2 routine).  
The readout is started by setting the **DS9\_Start** variable to 1.  
**DS9\_Read\_functionResult** indicates the result of the function  
**DS9\_Read\_dataLength** indicates the data length read  
**DS9\_Read\_data** indicates data read  
The **Counter\_MT2** variable can be used to check whether the task has been started.
- **Data block 4 “Limit parameters“** is read and written in Motion Task 3 (motion\_3 routine).  
The readout is started by setting the **DS4\_Start** variable to 1.  
**DS4\_Read\_functionResult** indicates the result of the function  
**DS4\_Read\_dataLength** indicates the data length read  
**DS4\_Read\_data** indicates data read  
The **Counter\_MT3** variable can be used to check whether the task has been started.

Afterwards, data block 4 can also be written.

As soon as the values specified in the SIWAREX module have been read, the required parameters can be adapted. (The ST routine includes comments regarding parameter adaptation.)

If the **DS4\_Write\_Enable** variable is set to 1, data block 4 is written again after successful readout (if required with adapted / modified values)

- **Data block 30 “Process values“** is read in Motion Task 4 (motion\_4 routine).  
The readout is started by setting the **DS30\_Start** variable to 1.  
**DS30\_Read\_functionResult** indicates the result of the function  
**DS30\_Read\_dataLength** indicates the data length read  
**DS30\_Read\_data** indicates data read  
The **Counter\_MT4** variable can be used to check whether the task has been started.

The variables are created based on the received values:

DS30\_Net = net weight

DS30\_Gross = gross weight

See the attached Siw\_CS.st zip file.