

## ST1 Silo Weighing System

### FEATURES

- Appropriate for panel mounting
- LCD screen
- Language Interface available in English and French
- Voltage rating: 24 VDC/160 mA
- Up to 4 measurements per screen
- Up to 8 silo weight measurements and 16 temperature measurements
- Up to 8 deported casings and deported temperature casings
- Recommended load cell for weighing measurements: 178 extensometer

### OPTIONAL

- Modbus TCP & Ethernet IP connections available
- Up to 4 relay interface casings (16 relay outputs per casing)
- Up to 16 temperature control sensors (PT100)

### APPLICATIONS

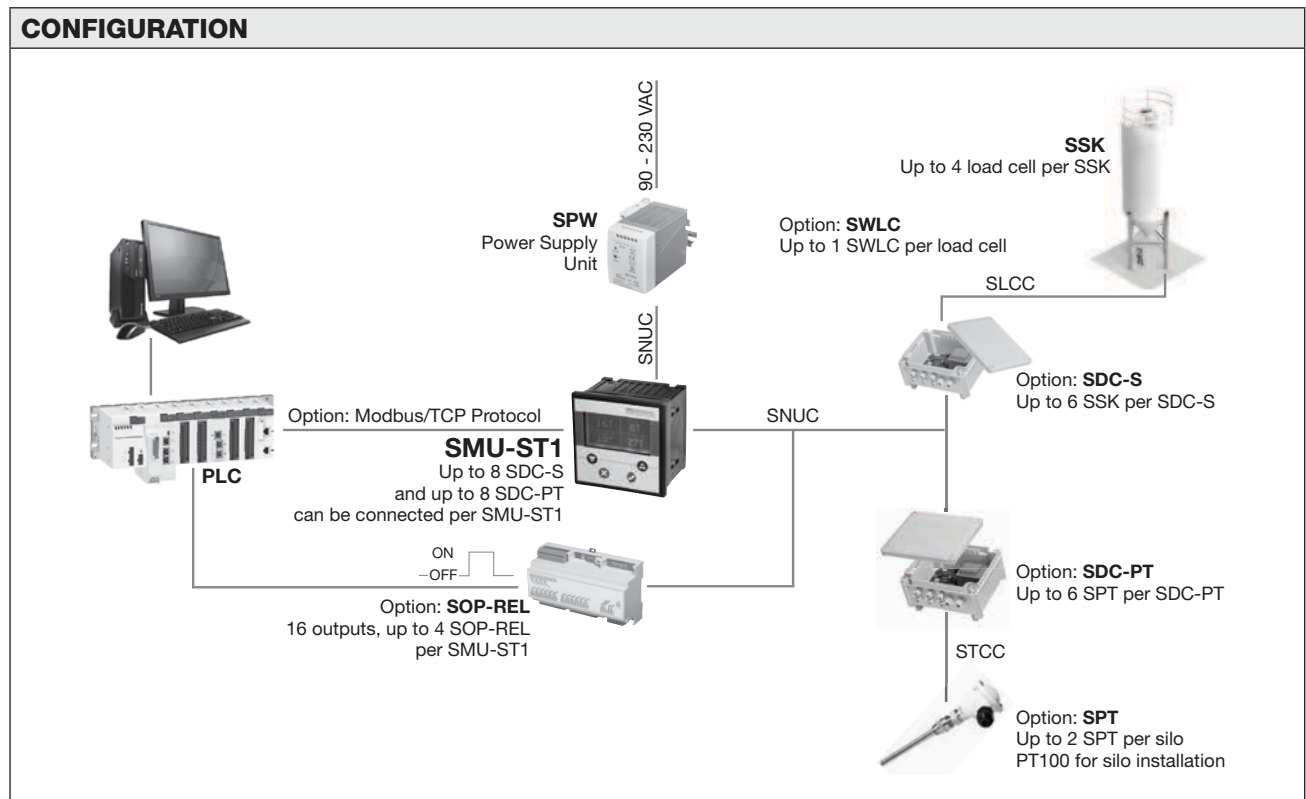
- Cement plant – aggregates storage tank
- Water treatment plant – storage/ batching tank
- Agriculture (weighing measurements only) – grain vessel
- F&B industry (weighing measurements only) – dairy storage plant, brewery, filling machine



### DESCRIPTION

Our modern and intuitive system can provide low uncertainty and highly repeatable weighing and temperature measurements. For our ST1 system, it can display both weight and temperature measurements of connected silos. Up to 8 silos can be supported with an option of up to a total of 16 PT100 Temperature Sensors, up to 4 relay interface casings and a Modbus TCP/ Ethernet IP connection.

### CONFIGURATION



## ST1 Silo Weighing System

**SPECIFICATIONS****ST1 CONTROLLER (SMU-ST1)****Performance**

- Silo Weight Measurement** Up to 8
- Temperature Measurement** Up to 16
- Microcontroller** Microchip PIC16
- Data Storage** 266KB

**Environmental**

- Operating Temperature** 0 to +50°C (32 to 122°F)
- Storage Temperature** -20 to +70°C (-4 to 158°F)
- Maximum Humidity Before Condensation** 90%

**Display and Keyboard**

- Display** Graphic LCD
- Display Dimensions** 128 x 64 pixels
- Keyboard** 4 button on the front of the device
- Available Languages** English and French

**Electrical**

- Voltage** 24VDC
- Current Rating** 160 mA
- Wattage** 2.5 W

**Enclosures**

- Dimensions** 96 x 96 x 72 mm L x H x D  
(3.78 x 3.78 x 2.83")
- Mounting** Panel Mounting
- Electrical Connections** 3.81 mm (0.15") removal terminal blocks

**POWER SUPPLY UNIT (SPW)**

- Input Voltage** 90/230VAC
- Output Voltage** 24VDC
- Power Output** 100 W
- Dimensions** 100 x 55 x 90 mm L x H x D  
(3.94 x 2.17 x 3.54")
- Mounting** DIN Rail

**DEPORTED CASING – SILO (SDC-S)**

- Input Voltage** 24 VDC
- Output Voltage** 5 VDC
- Wattage** 17 W
- Measuring Range** -2.4 to +2.4 mV/V
- Input Sensitivity** 0.002 mV
- Microcontroller** Microchip PIC32
- Data Storage** 2 MB
- Dimensions** 190 x 170 x 100 mm L x H x D  
(7.48 x 6.69 x 3.94")
- Operating Temperature** -10 to +50°C (14 to 122°F)
- Storage Temperature** -20 to +70°C (-4 to 158°F)
- CAN Bus** Up to 8 Deported Casing can be connected on the same bus

**SILO KIT (SSK)**

- Junction Box Dimensions** 80 x 80 x 52 mm L x H x D  
(3.15 x 3.15 x 2.05")
- Junction Box Material** Polystyrene
- Studs Dimensions** 25 x 25 x 12 mm L x H x D  
(0.98 x 0.98 x 0.47")
- Studs Thread** 3/8 inches
- Studs Material** Steel
- Template Dimensions** 178 x 25 x 15 mm L x H x D  
(7.01 x 0.98 x 0.59")
- Template Material** Steel

**PT100 TEMPERATURE SENSOR (SPT)**

- Material** Stainless steel
- Connection** ½" male cylindrical gas
- Probe Length** 200 mm (7.87")
- Dimensions** 300 x 100 x 70 mm L x H x D  
(11.81 x 3.94 x 2.76")
- Probe** 3-wire PT100 ceramic IEC 60751 class A
- Operating Temperature** -50 to +450°C (-58 to 842°F)
- Storage Temperature** -50 to +450°C (-58 to 842°F)

**DEPORTED TEMPERATURE CASING (SDC-PT)**

- Output Voltage** 24 VDC
- Wattage** 6.5 W
- Measuring Range** -50 to +150 °C (-58 to 302°F)
- Microcontroller** Microchip PIC32
- Data Storage** 2 MB
- Dimensions** 190 x 170 x 100 mm L x H x D  
(7.48 x 6.69 x 3.94")
- Operating Temperature** -10 to +50°C (14 to 122°F)
- Storage Temperature** -20 to +70°C (-4 to 158°F)

**WEATHER SHIELD – 178 LOAD CELL (SWLC)**

- Dimensions** 600 x 150 x 242 mm L x H x D  
(23.62 x 5.91 x 9.53")
- Material** Aluminum
- Material Width** 1 mm (0.04")
- Mounting** Collar clamping

## ST1 Silo Weighing System

**RELAY INTERFACE CASING (SOP-REL)**

**Max Relay Outputs Per Casing** 16  
**Max Relay Output Voltage** 24 VDC  
**Relay Current Rating** 1 Amps  
**Max Switching Power** 30 W  
**Life Expectancy** 100,000 ops  
**Operating Temperature** -10 to +50°C (14 to 122°F)  
**Storage Temperature** -20 to +70°C (-4 to 158°F)  
**Input Voltage** 24 VDC  
**Wattage** 6 W  
**Microcontroller** Microchip PIC32  
**Dimensions** 160 x 90 x 58 mm L x H x D  
(6.30 x 3.54 x 2.28")  
**CAN Bus** Up to 4 Interface Casing can be connected on the same bus

**MODBUS TCP – INSERTED IN ST1 (SCOM-MOD)**

**Dimensions** 82 x 60 x 15 mm L x H x D  
(3.23 x 2.36 x 0.59")  
**Microcontroller** Microchip PIC16  
**Operating Temperature** -10 to +50°C (14 to 122°F)  
**Storage Temperature** -20 to +70°C (-4 to 158°F)  
**Output Voltage** 5 VDC  
**Wattage** 1.5 W  
**Max Simultaneous Connection** 1  
**Max Number of Request** 10 per seconds  
**Electrical Connection** RJ-45  
**Connection Speed** 10 to 100 mbps

**RECOMMENDED LOAD CELLS****Model 178 Load Cell**

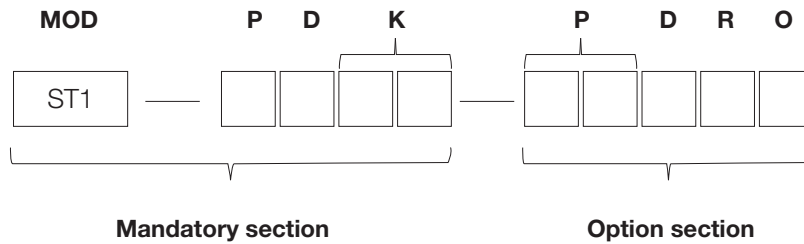
Note: Please refer to model's datasheet for further information. Refer to Document no: 63999. All specifications are subject to change without notice.

If you require any further information about any of the modules, please contact [vpgt.marketing@vpgsensors.com](mailto:vpgt.marketing@vpgsensors.com).

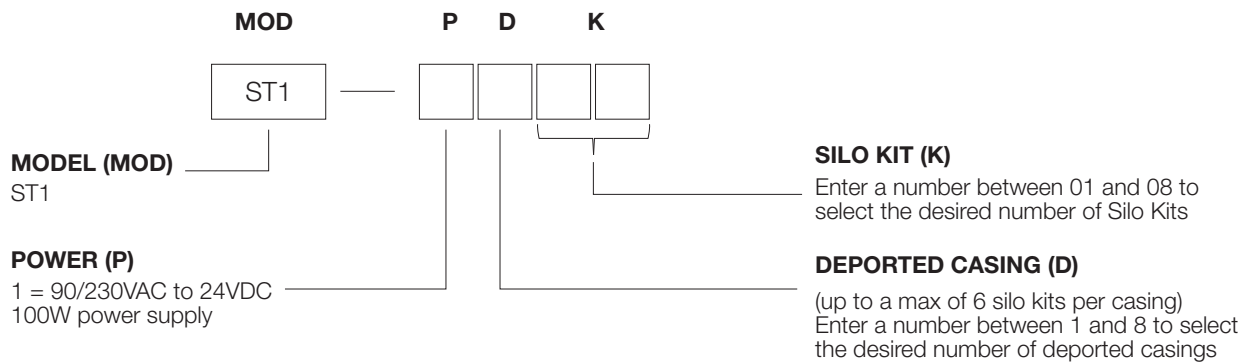
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**ORDERING INFORMATION FOR ST1**

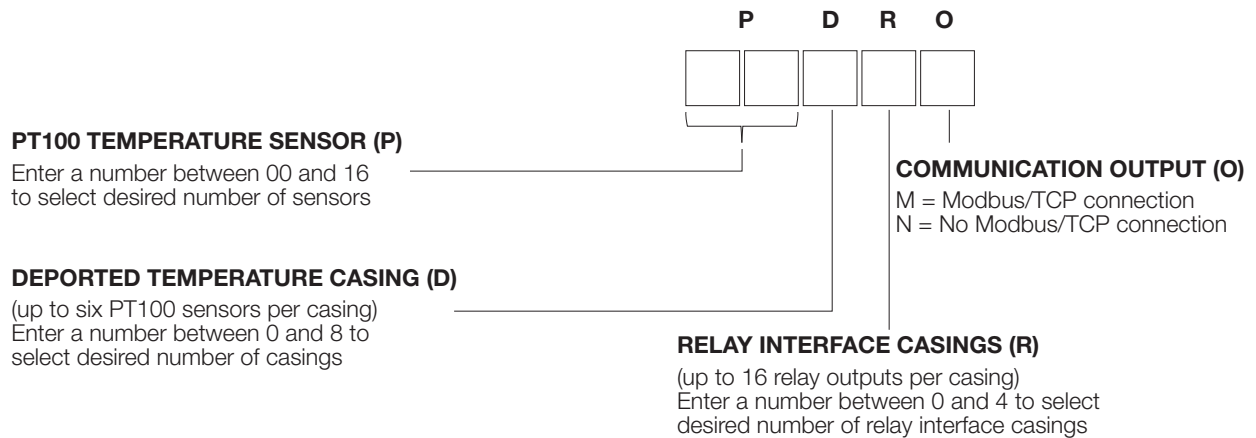
**Complete item number**



**Mandatory section of item number**



**Optional section of item number**



**Example Complete Item Selection Number:**

ST1- 1104 – 0821M with 90/230 VAC to 24 VDC 100 W power supply, 1 deported casing, 4 silo kits, 8 temperature casings, 2 deported temperature casings, 1 relay interface casings, and an Modbus TCP connection.

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**COMPONENTS FOR INDIVIDUAL PURCHASE**

**RTSP**

**XXXX**

RTSPST1	= MAIN CONTROL UNIT	RTSPSPT	= PT100 TEMP SENSOR
RTSPSPW	= POWER SUPPLY UNIT	RTSPSDCPT	= DEPORTED TEMP CASING FOR 6 PT100s
RTSPSDCS	= DEPORTED CASING FOR 6 SILO KITS	RTSPSOPREL	= OUTPUT - RELAY INTERFACE CASING
RTSPSSK	= SILO KIT	RTSPSCOMMOD	= COMMUNICATION - MODBUS/TCP
RTSPSLCC	= LOAD CELL AND SILO KITS CABLE	RTSPSNUC	= COMMUNICATION CABLE (CAN BUS)
RTSPSTCC	= TEMP SENSOR CABLE	RTSPSWLC	= LOAD CELL WEATHER SHIELD



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