



HVAC PRODUCTS PRICEBOOK



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Mechanical Thermostats

mechanical room thermostats

SIEMENS



Mechanical room thermostats for heating or cooling applications.

Product Code	Description	List Price
RAA11	Room thermostat, heating only or cooling only, 8..30°C, 230Vac, 6A, tamper proof	50.00
RAA21	Room thermostat, heating only or cooling only, 8..30°C, 230Vac, 6A	52.00
RAA31	Room thermostat, heating only or cooling only, 8..30°C, 230Vac, 6A, on/off switch	54.00
ARG70	Thermostat accessory, mounting plate for 4 x 4 conduit boxes	10.00
ARG70.1	Thermostat accessory, mounting plate for 2 x 4 conduit boxes	10.00

mechanical thermostats - clamp on

SIEMENS



Electromechanical temperature limitation with single pole changeover micro switch. Control medium: water, oil

Product Code	Description	List Price
RAM-TR.2000M	Thermostat, control type, pipe mounting, 17..90°C, external setpoint adjuster	61.00
RAM-TW.2000M	Thermostat, detector type, pipe mounting, 17..90°C, internal setpoint adjuster	63.00

mechanical thermostats - outside air temperature



Mechanical thermostats for plant room or outdoor applications.

Product Code	Description	List Price
RAK-TW.5000HS	Thermostat, immersion strap on or wall mount, 1600mm capillary, 5..65°C, IP65	212.00
TC3-543230	Imit thermostat, 0..50°C, IP54, 3k differential	75.00

Mechanical Thermostats

mechanical thermostats - capillary



Thermostats with adjustable temperature, deviation capillary with bulb.

Product Code	Description	List Price
RAK-TR.1000B-H	Thermostat, control type, 700mm capillary, 15..95°C, includes pocket	163.00
RAK-TW.5010S-H	Thermostat, frost protection, 1600mm capillary, -10..50°C	129.00
HCE940030	HRW thermostat control type, 1000mm capillary, 0..40C, 3K differential	86.15

mechanical thermostats - limit

SIEMENS



Siemens limit thermostats for use in heat generation plants and for general use in heating, ventilation and air conditioning plants.

- for general use in heating, ventilation and air conditioning plants
- single pole changeover microswitch
- pipe, pocket or wall mount options available
- visible switch off temperature

Product Code	Description	List Price
RAK-ST.1300P-M	Thermostat, safety limit, 700mm capillary, manual reset, 120..130°C, includes pocket	187.00
RAK-ST.1310P-M	Thermostat, safety limit, 700mm capillary, manual reset, 90..110°C, includes pocket	180.00
RAK-ST.1430S-M	Thermostat, safety limit, 1600mm capillary, manual reset, 80..100°C	162.00
RAK-TB.1400S-M	Thermostat, limit, 700mm capillary, manual reset, 45..60°C	150.00
RAK-TB.1410B-M	Thermostat, limit, 700mm capillary, manual reset, 50..70°C, includes pocket	162.00
RAK-TB.1420S-M	Thermostat, limit, 700mm capillary, manual reset, 65..80°C	172.00
RAK-TR.1000B-H	Thermostat, control type, 700mm capillary, 15..95°C, includes pocket	163.00
RAK-TW.5010S-H	Thermostat, frost protection, 1600mm capillary, -10..50°C	129.00
ALT-SB100	Protection pocket, single, brass, 100mm, ½" BSP	32.00
ALT-AB200	Thermostat accessory, protection pocket, for TKM2D	24.00
RAZ-ST.030FP-J	Thermostat, combined control & safety limit, 15..95°C, switch off at 110°C, includes pocket	347.00
RAZ-ST.1500P-J	Thermostat, combined control & safety limit, 15..95°C, switch off at 110..130°C, includes pocket	337.00
RAZ-ST.1510P-J	Thermostat, combined control & safety limit, 15..95°C, switch off at 90..100°C, includes pocket	322.00
ALT-DB100	Protection pocket, double, brass, 100mm	42.00

Electronic Thermostats

room thermostats

SIEMENS



Electric thermostat for heating or cooling applications

Features:

- ON/OFF or PWM outputs for heating and cooling
- remote on/off input

Product Code	Description	List Price
RCU10-N	Room thermostat, universal, heating and cooling, 8..30°C, 230Vac	67.50
RCU10.1	Room thermostat, universal, heating and cooling, 8..30°C, 230Vac, operating mode selector	185.00

Electronic Thermostats

wireless room thermostats - single relay output

SIEMENS



These thermostats offer wireless solutions for gas fire or gas burner control, under floor heating, hydronic (valve or pump) control and retro fitting where installing new wiring is a problem.

Features:

- battery powered with large LCD display
- easy setup with set and learn function

Product Code	Description	List Price
RDD100.1RF	Wireless room thermostat, heating only, RDE-MZ6 receiver sold separately	217.00
RDD100.1RFS	Wireless room thermostat, heating only, 230Vac, 8A, RCR100RF receiver included	391.00
RDE100.1RF	Wireless room thermostat, time switch, heating only, RDE-MZ6 receiver sold separately	272.00
RDE100.1RFS	Wireless room thermostat, time switch, heating only, 230Vac, 8A, RCR100RF receiver included	471.00
RDE-MZ6	Wireless multizone receiver, up to 6 zones, 230Vac, 8A, RDE100.1RF or RDD100.1RF sold separately	601.00

universal electronic thermostats

SIEMENS



The RDG/RDF series represents a compact wall-mounted or recessed thermostat version of elegant and modern design. The thermostats are for fan coil units, heat pump applications, radiators and radiant electric heating.

Features:

- surface or semi flush mount
- up to 3 fan speed settings
- automatic or manual fan speed selection
- automatic or manual heating/cooling changeover
- minimum and maximum setpoint limitation
- large backlit LCD display
- infrared remote control receiver (RDG100T only)
- auto timer mode with 8 programmable time schedules (RDG100T only)
- optional remote temperature sensor
- KNX communicating models available at request

Product Code	Description	List Price
RDG100	Universal room thermostat, 230Vac, 3 triac outputs, display (ideal for electric heating)	301.00
RDG100T	Universal room thermostat, 230Vac, 3 triac outputs, 1A, time clock, display	347.00
RDG110	Universal room thermostat, 230Vac, 2 relay outputs, 5A, display (ideal for heat pumps)	233.00
RDG160T	Universal room thermostat, 24Vac/dc, 2 x 0..10Vdc outputs, display, ECM fan, time switch	366.00
RDF300.02	Universal room thermostat, semi flush mount, 230Vac, 2 relay outputs, display	178.00
RDF340	Universal room thermostat, semi flush mount, 24Vac, 0..10Vdc output, display	257.00
QAH11/AP	Sensor probe, temperature, 2.5m cable	45.00
SOD-TN3	Vector outdoor temperature sensor, NTC 3K, IP65	53.71
SDB-TN3-20-W	Vector temperature sensor, duct mount, 3K NTC, 200mm probe length, -40..100C	80.77
QAA32	Room sensor, temperature, NTC	43.00
TPTS-R/U/BB	Black bulb sensor, 3K NTC, room mounted, for IR heating (Titan)	104.03
IRA211	Infrared remote control, for fan coil thermostats with infrared receiver	73.00
ARG71	Flush box to fit RDE410	27.00
SB632	Siemens flush box, for cavity walls	8.00

Electronic Thermostats

underfloor heating thermostats

SIEMENS



The RDE is used for the control of room temperature in heating systems. The controller acquires the room temperature with its integrated sensor or floor sensor option (RDE100.1 only).

Features:

- 2 position control
- 7 day time switch
- 230Vac or battery powered

Product Code	Description	List Price
RDE100	Room temperature controller, timeclock, 240Vac	156.00
RDE100.1	Room thermostat, time clock, aux input, battery powered	156.00
QAH11/AP	Cable temperature sensor, -20..70°C, for RDE100.1 or RCU15	45.00
RDD310/EH	Room thermostat, semi flush mount, 2 pos. control, 230Vac, 16A relay, LCD display	188.00
RDE410/EH	Room temperature controller, semi flush mount, 5..40C, 230Vac, 16A relay, time switch, LCD	240.00

Sensors - on/off

current switches

Hawkeye



The Hawkeye 800 and 900 Series go/no current switches provide a cost-effective solution for monitoring status on unit vents, exhaust fans, recirculation pumps and other fixed loads where belt loss is not a concern.

Features:

- mini housing with adjustable mounting bracket for easy installation
- non-polarity sensitive output
- 100% solid state, no moving parts

Product Code	Description	List Price
H-800	Current switch, non-adjustable, 0.25..200A, 30Vac/dc at 1A	96.00
H-800HV	Current switch, non-adjustable, 0.75..200A, 230Vac at 1A	233.00
H-900	Current switch, split core, 30Vac/dc at 1A	145.00

pressure switches



Differential pressure detector for ventilation and air conditioning systems

- for monitoring of air filters, air flow, fan belts
- for monitoring of pressure in clean rooms, kitchens, etc
- monitors differential pressure up to 1000Pa

Product Code	Description	List Price
LF32-03A	Differential air pressure switch, 30...300Pa, includes tube & pitot	105.32

Sensors - on/off

flow switches - air



Air flow paddle switch, FAPS, is intended to monitor air flow and non-aggressive gases within a duct.

Features:

- min switch on: 2.5m/sec, min switch off: 1.0m/sec airflow
- max switch on: 9.2m/sec, max switch off: 8.0m/sec airflow
- IP65 plastic housing
- base in galvanised steel, moving arm in brass, vane in stainless steel

Product Code	Description	List Price
FAPS	Air flow paddle switch	186.32

smoke detection controls



The VSD series duct smoke detector has been developed to provide effective and reliable detection of smoke in ventilation systems.

Features:

- standard probe lengths 300mm
- 1 output relay (1A @ 120Vac) and 2..10Vdc analogue output
- auto or manual reset

Product Code	Description	List Price
VSD301	Duct smoke detector, 24Vac/dc, 2..10Vdc analogue output, 1 relay output, 300mm probe, IP65	669.57

humidistats

SIEMENS



The Siemens humidistats are used for controlling and monitoring relative humidity in ventilation or air conditioning facilities.

Features:

- humidity measuring element made of stabilised plastic
- setpoint for the upper switching point
- relay output

Product Code	Description	List Price
QFA1000	Room hygrostat, 30..90%RH, 230Vac, 5A, concealed setpoint	182.00
QFA1001	Room hygrostat, 30..90%RH, 230Vac, 5A, setpoint adjuster	185.00
QFM81.2	Hygrostat, duct mount, on-off, incl. mounting flange, setpoint adjuster	444.00
QFM81.21	Hygrostat, duct mount, on-off, incl. mounting flange, concealed setpoint	587.00

Sensors - on/off

occupancy sensors

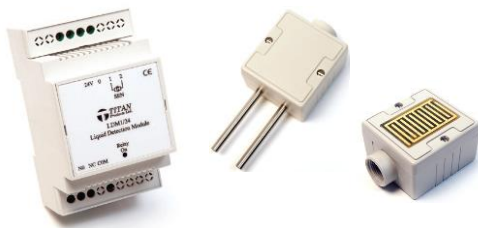


Occupancy sensors specifically designed for automatic ventilation control of HVAC systems.

- 24Vac/dc
- adjustable time delays on/off
- dual sensor with massive detection range
- suitable for any BMS system

Product Code	Description	List Price
41-549	Servodan occupancy sensor, ceiling mount, 360°, PIR, 24Vac/dc, with integrated relay	292.16
41-279	Servodan occupancy sensor, wall mount, 90°, PIR, 24Vac/dc, relay output	382.17
41-340	Servodan occupancy sensor, ceiling mount, 360°, PIR, light sensor 0..10Vdc, 24Vdc, LON comms	635.01
43-225	Servodan occupancy sensor, ceiling mount, 360°, ultrasonic/PIR detector, 24Vdc, 200m ² detection area	856.46
43-992	Servodan occupancy sensor, base for 43-2..	142.14
43-197	Servodan lux sensor, 0..10Vdc, 24Vdc	170.70
41-044	Servodan minilux day/night switch, 24Vac/dc	463.60

liquid detection and level controls



The WWD liquid warning detector is used to sense moisture and water. It senses the change in conductivity when moisture or water is in contact with the sensing pins or when moisture or water is in contact with the external alarm band WST or probe.

The LDM1 module is designed to detect the presence of water or other conducting liquids. The module incorporates a voltfree changeover relay with LED status indication. It can be used with the TPFDFlood detector.

Product Code	Description	List Price
IO/LDM1/240	Titan liquid detection module, 240Vac	349.25
IO/LDM1/24	Titan liquid detection module, 24Vac	319.52
TPFD	Flood detector sensor, 2 wire, for use with LDM1	178.34
RG-11	Optical rain sensor	375.48
WWD102N	Liquid warning detector, 12..30Vdc, relay output	221.25
WWD103N	Liquid warning detector, 12..30Vdc, relay output, with buzzer	232.89
WDT	Alarm band per metre, 2 wire, for use with WWD..N	21.19

flow switches – water

SIEMENS



Suitable for use in HVAC plants to monitor the flow of liquid in hydraulic systems, especially in refrigeration, heat pump and heating plants, e.g. for condensers, boilers and heat exchangers.

- pipe diameter: DN20 to DN200
- water temperature: -20°C to +110°C

Product Code	Description	List Price
QVE1900	Flow switch, -20..110°C, DN32..DN200 pipe diameter, stainless steel paddle, IP65 rated	369.00
QVE1901	Flow switch, -20..110°C, DN20..DN200 pipe diameter, plastic paddle, IP65 rated	295.00

Passive & Active Sensors

room mount temperature sensors

SIEMENS



Sensors used in heating, ventilation, and air conditioning plants to acquire the room temperature. Many other types available on request

Range of use:

- temperature: 0...50°C
- outputs: PT1000, 0..10Vdc, 4..20mA

Product Code	Description	List Price
QAA2012	Room sensor, temperature, 0..50°C, PT1000	75.00
QAA25	Room sensor, temperature, 0..50°C, Ni1000, setpoint adjuster for 5..35°C	212.00
QAA2061	Room sensor, temperature, 0..50°C, 24Vac, 0..10Vdc output	255.00
QAA2071	Room sensor, temperature, 4..20mA	255.00
QAA2061D	Room sensor, temperature, 24Vac, LCD display	429.00

duct mount temperature sensors

SIEMENS



Duct temperature sensors for use in ventilation & air conditioning plants as:

- supply or extract air temperature sensors
- limit sensors, e.g. for minimum limitation of the supply air temperature
- reference sensors, e.g. for shifting the room temperature as a function of the outside temperature
- measuring sensors, e.g. for measured value indication

Range of use:

- temperature: -50..80°C
- outputs: PT1000, 0..10Vdc, 4..20mA
- protection class: IP42

Product Code	Description	List Price
QAM2112.040	Duct sensor, temperature, -50..80°C, PT1000, 400mm probe length	144.00
QAM2161.040	Duct sensor, temperature, -50..80°C, 0..10Vdc, 400mm probe length	348.00
QAM2171.040	Duct sensor, temperature, -50..80°C, 4..20mA, 400mm probe length	348.00

immersion temperature sensors

SIEMENS



Sensors for use in ventilation and air conditioning plants for controlling or limiting the flow temperature, limiting the return temperature and controlling the domestic hot water temperature.

Range of use:

- temperature: -30..130°C
- supply: 24Vac/13.5..35Vdc
- outputs: PT1000, 0..10Vdc, 4..20mA
- protection class: IP42/54

Product Code	Description	List Price
QAE2112.010	Immersion sensor, temperature, -30..130°C, PT1000, 100mm stem length, passive	123.00
QAE2164.010	Immersion sensor, temperature, -10..120°C, 24Vac, 0..10Vdc output, 100mm stem length, IP54	339.00
QAE2174.010	Immersion sensor, temperature, -10..120°C, 24Vac, 4..20mA output, 100mm stem length, IP54	339.00
ALT-SS100	Protection pocket, single, stainless steel, 100mm, ½" BSP (not included with sensor)	49.00
ALT-SB100	Protection pocket, single, brass, 100mm, ½" BSP (not included with sensor)	32.00

Passive & Active Sensors

other temperature sensors

SIEMENS



A selection of sensors with a variety of different measurement parameters, from solar sensors to air velocity sensors and flow switches.

Users can select precisely the products they need from a truly comprehensive, transparent, and modular sensor range for all applications.

Product Code	Description	List Price
QAC2012	Room sensor, outside temperature, PT1000	56.00
QAC3161	Room sensor, outside temperature, 0..10Vdc	267.00
QAC3171	Room sensor, outside temperature, 4..20mA	267.00
QAP2012.150	Sensor, cable temperature, 1.5m, PT1000	79.00
QAT22	Sensor, window pane temperature, NI1000	320.00
QAD2012	Sensor, temperature, strap on, PT1000	68.00
QLS60	Sensor, for solar applications, 24Vac, 0..10Vdc and 4..20mA outputs	1331.00
TPPT3RS/BB	Black Bulb sensor, room mount, PT1000 (Titan)	111.46
QAP21.2	Sensor, cable temperature, 1.5m, high temperature applications	136.00

duct mount humidity sensors

SIEMENS



Siemens duct mount humidity controls are for use in air ducts of ventilation and air conditioning plants for acquiring relative humidity and temperature.

- single output 0..10Vdc or optional 4..20mA for relative humidity
- second output 0..10Vdc or optional 4..20mA for temperature
- QFM21.. for standard applications
- QFM31.. for demanding applications such as swimming pools

Product Code	Description	List Price
QFM2100	Duct sensor, humidity, 0..95%RH, 24Vac/dc, 0..10Vdc output, IP54	491.00
QFM2160	Duct sensor, humidity and temperature, 0..95%RH, 24Vac/dc, 0..10Vdc outputs, IP54	516.00
QFM3160	Duct sensor, humidity and temperature, 0..100%RH, 24Vac/dc, 0..10Vdc outputs, IP65, high demand	765.00
QFM3100	Duct sensor, humidity, 0..100%RH, 0..10Vdc output, high demand	725.00

room mount humidity sensors

SIEMENS



Siemens room humidity controls are for use in ventilation and air conditioning plants where high accuracy for measuring relative humidity is required.

Features:

- single output 0..10Vdc or optional 4..20mA for relative humidity
- second output 0..10Vdc or optional 4..20mA for temperature
- QFA20.. for standard applications
- QFA31.. for demanding industrial or swimming pool applications

Product Code	Description	List Price
QFA2000	Room sensor, humidity, 0..95%RH, 24Vac/dc, 0..10Vdc output, IP30	468.00
QFA2060	Room sensor, humidity and temperature, 0..95%RH, 24Vac/dc, 0..10Vdc outputs, IP30	493.00
QFA3160	Room sensor, humidity and temperature, 0..100%RH, 24Vac/dc, 0..10Vdc analog outputs, IP65	765.00
QFA2060D	Room sensor, humidity and temperature, 0..95%RH, 0..10Vdc outputs, display, IP30	608.00
QFA3100	Room sensor, humidity, 0..100%RH, 0..10Vdc analog output, IP65	725.00
QFA3160D	Room sensor, humidity and temperature, 0..100%RH, 0..10Vdc outputs, display, IP65	883.00
AQF3100	Sensor accessory, sun shield	415.00

Passive & Active Sensors

air quality sensors

SIEMENS



The range of Siemens air quality sensors offer energy savings and enhanced comfort, as well as long term stability requiring no servicing or recalibration.

Features:

- CO2 or VOC sensing options available
- CO2 temperature and CO2 humidity/temperature multisensor options
- power supply: 24Vac/dc
- analog and relay output options

Product Code	Description	List Price
QPA1000	Room sensor, VOC, 24Vac, IP30	511.00
QPA2000	Room sensor, CO2, 0..2000ppm, IP30	954.00
QPA2002	Room sensor, CO2 and VOC, 0..2000ppm, IP30	1,210.00
QPA2060	Room sensor, CO2/temperature, 0..2000ppm, -35°C..+50°C, IP30	1,164.00
QPA2062	Room sensor, CO2/humidity/temperature, 0..2000ppm, -35°C..+50°C, 0-100%RH, IP30	1,436.00
QPA2002D	Room sensor, CO2 and VOC, 0..2000ppm, LCD, IP30	1,357.00
QPA2060D	Room sensor, CO2/temperature, 0..2000ppm, -35°C..+50°C, LCD, IP30	1,309.00
QPA2062D	Room sensor, CO2/humidity/temperature, 0..2000ppm, -35°C..+50°C, 0-100%RH, LCD, IP30	1,581.00
QPM2100	Duct sensor, CO2, 0..2000ppm, IP54	1,324.00
QPM2102	Duct sensor, air quality, CO2 and VOC, 0..2000ppm, IP54	1,620.00
QPM2160	Duct sensor, air quality, CO2 and temperature, 0..2000ppm, -35°C..+50°C, IP54	1,467.00
QPM2162	Duct sensor, air quality, CO2, humidity, temperature, 0..2000ppm, 0..50°C, 0-100%RH, IP54	1,712.00
QPA84	Room sensor, VOC, relay output, 230Vac, IP30	298.00
F2000IAQ-CO2-3101U	Tongdy CO2 monitor and controller, wall mount, relay output, 24Vac/dc	1,176.00
F12-S8100	Tongdy CO2 transmitter, wall mount, 1x0..10V output, 24Vac/dc, 0...2000ppm	589.26

velocity sensors

SIEMENS



Used to control the air velocity to a constant value, balance out pressure fluctuations (supply/extract air control) or to monitor the flow in air ducts.

It primarily is used for modulating fan control in primary plants to set the basic volume flow.

Product Code	Description	List Price
QVM62.1	Duct sensor, velocity, 24Vac, 0..10Vdc output, IP42	689.00

earthquake switch



The CJS earthquake safety switch is designed to sense a vibration by earthquake via its micro-switch, which automatically cuts off an electrical circuit when an earthquake over a certain magnitude occurs. Ideally used in conjunction with our gas shut off valves.

Technical Specifications:

- setting acceleration: cutting off in horizontal movement between 1.0m/s² and 1.7m/s² as per 0.3sec to 0.7 cycle
- contact rating: 230Vac 7A
- 1 SPDT relay contact for remote alarm and/or electrical shut off
- operating temperature: -20°C..70°C

Product Code	Description	List Price
CJS-C117T	Mechanical earthquake switch, manual reset, non-adjustable	383.70

Passive & Active Sensors

earthquake trigger



The earthquake trigger continuously monitors the vertical component of the earth's acceleration due to seismic forces. It is designed to detect the faster moving P- waves and when the acceleration exceeds the pre-set level the output relay changes state until 7 seconds after the quake. Contacts on this relay may be used to initiate any desired action. The unit has an event counter mounted on the lid to record the total number of operations, including instrument test operations.

Technical Specifications:

- vertical sensitivity: 0.012, 0.025, 0.05, 0.1, 0.2G selectable
- frequency response: flat from 0.3Hz..10Hz (+/-3dB). 10dB down at 30Hz
- operation time: 10m/sec, relay is de-energised 7sec after event
- power supply: 230Vac with NiCAD battery backup
- contact rating: 230Vac 10A
- test button to simulate 0.2G earthquake

Product Code	Description
MK5 EQ TRIG	Electronic earthquake trigger

gas detection systems (ideal for car parks)

Honeywell



E³Point is a gas monitor capable of detecting the widest range of toxic and combustible gases found in commercial building spaces and outbuildings. It can be used as a standalone unit with single or dual-gas detection or deployed as a networkable device; E³Point also functions with existing controller-based gas monitoring systems and wired/wireless gas monitoring system components.

These modular dual gas detection systems are ideal for car parks, truck stops and battery charging areas.

Features:

- display complies to AS/NZ 1668.2
- available in standalone, with remote (dual gas mode) or network versions
- works with virtually any building automation system with BACnet and Modbus options available
- wall or duct mount (duct kit extra)
- remote sensor option (standalone version only)
- couple with 301C to log data and connect up to 96 BACnet or Modbus E³Point units
- factory calibrated cartridges
- wireless option available

Product Code	Description	List Price
E3SA + E3SCO	E ³ point, wall mount, stand alone, single or dual gas, 24Vac/dc, 2 x SPDT relay, includes single CO sensor	1,439.13
E3SA + E3NO2	E ³ point, wall mount, stand alone, 4..20mA, 2 x SPDT relay, includes single NO ₂ sensor	1,762.53
E3SRMCO	E ³ point, remote sensor, -20..50°C, CO, for use with E3SA.. unit	847.31
E3SRMNO2	E ³ point, remote sensor, -20..50°C, NO ₂ , for use with E3SA.. unit	847.31
E3SRMH2S	E ³ point, remote sensor, -20..50°C, H ₂ S, for use with E3SA.. unit	847.31
E3PT-CAGE	Protective wire guard for E ³ point	356.70
E3T-PK	E ³ point tamper proof kit	36.22

Passive & Active Sensors

stand alone gas monitors (Co)



The low cost CMA gas detector allows continuous monitoring of the ambient air to detect carbon monoxide concentrations (CO).

Features:

- electrochemical sensor element
- ideal for use with Siemens LOGO or Siemens VSDs
- other ranges available on request

Product Code	Description	List Price
CMA 200VC	Gas detector, CO, 0..10Vdc or 4..20mA output, 0..200ppm	710.33

stand alone gas monitors



The Murco Gas Sensor is a fixed gas detector which can detect a wide range of different gases. The sensors can be used on a stand-alone basis or integrated into controls or BMS using its digital or analog output.

Features:

- visual and audible alarm
- IP44 (optional IP66 housing)
- alarm relay output, analog output (Vdc or mA)
- optional remote sensor head for EXD or decorative application

Product Code	Description	List Price
MGS150-6300-1091	Gas sensor, IR, CO ₂ , 10(5)k PPM, 24Vac/dc	2,163.59
MGS150-6300-1134	MGS gas sensor, refrigerants, R134a, 24Vac/dc	840.92
MGS150-6300-1137	MGS gas sensor, refrigerants, R410a, 24Vac/dc	840.92
IAM-R410A-105	Gas sensor, refrigerant, R410a, 230Vac, remote head, 5m cable, decorative faceplate	1,248.37
SPLASH GUARD	Splash guard for MSC gas sensors	76.40
IP66	IP66 housing for MSC gas sensors	265.56

centralised gas detection systems - multi zone



This equipment is primarily used for the detection of natural gas or LPG leaks in commercial and industrial environments. The gas units monitor up to 3 detection zones via the remote gas sensor.

Features:

- DIN mount or panel mount options
- monitor up to 3 zones (CTP21 only)
- LED indication of LEL levels
- test/reset push buttons

Product Code	Description	List Price
CTM11	Central gas unit, DIN mount, 230Vac, for use with single sensor, excludes remote sensor	476.81
CTP21	Central gas unit, wall mount, IP54, 230Vac, for use with three remote sensors	804.48
ST441G	Catalytic sensor for CT gas units, for LPG, IP44	246.90
ST441M	Catalytic sensor for CT gas units, for Natural Gas, IP44	246.90
SE193K	Catalytic sensor for CT gas units, for Natural Gas or LPG, IP67, ATEX certified	777.29
SE301A	Siren with flashing red light indicator, 230Vac	448.02



Passive & Active Sensors

stand alone gas detection systems



The Geca CTR21 wall mount gas leak detector monitors natural gas, methane or LPG (depending on the model). The accompanying sensor is integrated onto the housing for ease of installation.

Technical Specifications:

- rating: IP44
- first relay intervention: 10% LEL, second relay intervention: 20% LEL

Product Code	Description	List Price
CTR21/M	Gas detection unit, wall mount, for natural gas, 230Vac, includes sensor	545.38
CTR21/G	Gas detection unit, wall mount, for LPG, 230Vac, includes sensor	545.38

liquid pressure sensors - liquids/gas

SIEMENS



Siemens pressure sensors suitable for the measurement of static and dynamic positive pressure in HVAC plants, particularly in hydraulic and pneumatic systems using liquid or gaseous media (steam applications).

- Piezo-resistive measuring system
- 0..10Vdc output signal
- measurement unaffected by changes in temperature
- high temperature stability

Product Code	Description	List Price
QBE2003-P1	Pressure sensor, liquid or gas, 0..1bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P1.6	Pressure sensor, liquid or gas, 0..1.6bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P2.5	Pressure sensor, liquid or gas, 0..2.5bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P4	Pressure sensor, liquid or gas, 0..4bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P6	Pressure sensor, liquid or gas, 0..6bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P10	Pressure sensor, liquid or gas, 0..10bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P16	Pressure sensor, liquid or gas, 0..16bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P25	Pressure sensor, liquid or gas, 0..25bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
QBE2003-P40	Pressure sensor, liquid or gas, 0..40bar, 24Vac, 0..10Vdc output, G½" thread, IP65	620.00
AQB22.1	Bracket for QBE20	42.00
AQB2001	Pressure connection set	212.00

liquid pressure sensors - refrigerants

SIEMENS



Siemens pressure sensors suitable for the measurement of static and dynamic positive pressure in HVAC plants, particularly in hydraulic and refrigeration systems using liquid or gaseous media.

- Piezo-resistive measuring system
- 0..10Vdc and 4..20mA output signal
- integral cast encapsulated
- measurement unaffected by changes in temperature
- high temperature stability

Product Code	Description	List Price
QBE2004-P10U	Pressure sensor, refrigerants, -1..9bar, 24Vac, 0..10Vdc output, internal thread, IP67	513.00
QBE2004-P25U	Pressure sensor, refrigerants, -1..24bar, 24Vac, 0..10Vdc output, internal thread, IP67	513.00
QBE2104-P10U	Pressure sensor, refrigerants, -1..9 bar, 24Vac, 4..20mA output, internal thread, IP67	513.00
QBE2104-P25U	Pressure sensor, refrigerants, -1..25 bar, 24Vac, 4..20mA output, internal thread, IP67	513.00

FT-PZ1 Thread adapter for refrigerant sensor

112.00



Passive & Active Sensors

air differential sensors

SIEMENS



Siemens pressure sensors for acquiring the differential pressure of air or non-aggressive gases in ventilation, air conditioning and heating plants.

- pressure linear characteristic with selectable pressure measuring range
- operating voltage 24Vac/dc
- 0..10Vdc output

Product Code	Description	List Price
QBM3020-1U	Air differential pressure sensor, -50..50Pa, max 5kPa, 0..10Vdc output	692.00
QBM2030-1U	Pressure sensor, 0..10Vdc output, selectable measuring range: +/-50Pa, +/-100Pa, 0..100Pa	413.00
QBM2030-5	Pressure sensor, 0..10Vdc output, selectable measuring range: 0..200Pa, 0..250Pa, 0..500Pa	413.00
QBM2030-30	Pressure sensor, 0..10Vdc output, selectable measuring range: 0..1000Pa, 0..1500Pa, 0..3000Pa	413.00
A-420A	Dwyer static pressure pickup for roof or outside mount	129.88
A-465	Dwyer flush mount space pressure sensor	57.89

Many options available, including other ranges with or without displays. Please contact your local office for further details.

liquid differential sensors

SIEMENS



Pressure sensors for slightly aggressive liquids and gases, highly resistant to overpressure.

- operating voltage 24Vac/dc
- pressure connection: internal thread G1/8"

Product Code	Description	List Price
QBE63-DP01	Differential pressure sensor, 0..10kPa, 24Vac/dc, 0..10Vdc output, IP65	1,524.00
QBE63-DP02	Differential pressure sensor, 0..20kPa, 24Vac/dc, 0..10Vdc output, IP65	1,524.00
QBE63-DP05	Differential pressure sensor, 0..50kPa, 24Vac/dc, 0..10Vdc output, IP65	1,524.00
QBE63-DP1	Differential pressure sensor, 0..100kPa, 24Vac/dc, 0..10Vdc output, IP65	1,524.00
LL768LRB0402	Alternative nipple for QBE sensor, 1/4" fitting, sold individually	18.00

liquid differential sensors - 0..1.6MPa

SIEMENS



Pressure sensor with a wide measuring range for slightly aggressive liquids and gases.

- operating voltage 24Vac
- 0..10Vdc output signal (4..20mA output also available (QBE3100..))
- pressure connection: internal thread G1/8"

Product Code	Description	List Price
QBE3000-D1	Differential pressure sensor, 0..100kPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D1.6	Differential pressure sensor, 0..160kPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D2.5	Differential pressure sensor, 0..250kPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D4	Differential pressure sensor, 0..400kPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D6	Differential pressure sensor, 0..600kPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D10	Differential pressure sensor, 0..1MPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
QBE3000-D16	Differential pressure sensor, 0..1.6MPa, 24Vac/dc, 0..10Vdc output, IP65	1,307.00
LL768LRB0402	Alternative nipple for QBE sensor, 1/4" fitting, sold individually	18.00

Level Measurement

point level measurement

SIEMENS

Capacitance Switches



Powerful range of level switches suitable for a variety of industries

Pointek CLS100: compact 2-wire inverse frequency shift capacitance switch for level detection in constricted spaces, interfaces, solids, liquids, slurries and foams

Vibrating Switches



Reliable vibrating point level switches for liquid and slurry applications across all industries

SITRANS LVL100: compact vibrating level switch for use in liquid and slurry applications such as overflow, high, low and demand level applications. Also ideal for dry run protection



Reliable vibrating point level switches for bulk solids in a wide variety of applications at a competitive price

SITRANS LVS100/LVS200: vibrating point level switch designed to be impervious to external vibrations and to provide reliable performance in demanding bulk solids applications

Rotating Paddle Switches



Reliable rotating point level switches for bulk solids in a wide variety of applications at a competitive price

SITRANS LPS200: rotating paddle switch for detection of high, low and demand levels for a wide variety of bulk solids industries. Unique engineering provides long-lasting reliable performance

Ultrasonic Switches



Ultrasonic non-contacting switch with two switch points for level detection of bulk solids, liquids and slurries in a wide variety of industries

Pointek ULS200:

- rugged design, no moving parts, and virtually maintenance-free
- the transducer is available in ETFE or PVDF copolymer and therefore inert to most chemicals

continuous measurement

SIEMENS

Ultrasonic Controllers



The SITRANS LUT400 series controllers are compact, single point, long-range ultrasonic controllers for continuous level or volume measurement of liquids, slurries, and solids, and high accuracy monitoring of open channel flow

SITRANS LUT420/430/440: in addition to industry leading 1mm accuracy, each of three models in the series are compatible with our full range of EchoMax transducers and offer varying degrees of pump, alarm, and other control functionality, all from a very compact and easy-to-use interface

Level Measurement

continuous measurement

SIEMENS

Ultrasonic Transmitters



2-wire loop powered ultrasonic transmitter for level, volume, and flow monitoring of liquids in open channels, storage vessels and simple process vessels

SITRANS Probe LU:

- continuous level measurement up to 12m range
- Patented Sonic intelligence signal processing
- Auto false-echo suppression

Ultrasonic Transducers



Transducers for liquids and bulk solids

XPS series: hermetically sealed PVDF enclosure for chemical immunity

Echomax XPS:

- XPS series offers versions for various distances up to 30m and up to a maximum temperature of 95°C

Radar Transmitters



2-wire, 6 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage vessels with nominal pressure and temperature, to a range of 20m

SITRANS Probe LR:

- uni-construction polypropylene rod antenna standard
- Patented Process Intelligence signal processing
- Auto false-echo suppression of false echoes



2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20m; antenna designs ideal for small vessels, low dielectric media and corrosive/aggressive media

SITRANS LR250:

- Simple operation using the graphical local user interface (LUI)
- Plug-and-play setup using the intuitive Quick Start Wizard
- 25 GHz high frequency allows for small horn antennas and easy mounting in nozzles
- Process intelligence signal processing for improved measurement reliability and Auto False-Echo Suppression of fixed obstructions



2-wire, 78 GHz FMCW radar level transmitter for continuous monitoring of solids in silos to a range of 100m; ideally suited to very dusty media

SITRANS LR560:

- Rugged stainless steel design
- 78 GHz high frequency provides very narrow beam, virtually no mounting nozzle noise, and optimal reflection from sloped solids
- Aimer option to direct beam to area of interest, such as draw point of cone
- Air purge connection is included for self-cleaning of extremely sticky solids
- Lens antenna is highly resistant to product build up
- Local display interface (LDI) allows local programming and diagnostics

Guided Wave Radar Transmitters



Guided wave radar transmitter for short- and medium-range level, level/interface, and volume measurement of liquids and solids. It is unaffected by changes in process conditions, high temperatures and pressures, and steam

SITRANS LG200:

- Measures accurately on materials with dielectric (dK) as low as 1.4
- Guided wave radar measurement for up to 2.5mm accuracy
- Measures level and interface on challenging applications including foam
- 3 button programming for quick setup
- Reliable level measurement on harsh applications with pressure up to 430 bar g and temperatures as high as 427°C

Level Measurement

continuous level

SIEMENS

Capacitance Transmitters



For liquids and solids applications, ideal for standard industrial applications in chemical, hydrocarbon processing, food and beverage, and mining, aggregate and cement industries

SITRANS LC300:

- Sophisticated, but easy-to-adjust microprocessor combined with field-proven probes
- Patented active shield technology ensures measurements are unaffected by vapours, product deposits, dust, and condensation

Basic Electronic Controllers

solar heating controllers



Differential temperature controllers for automation of solar heating systems with the ability to prevent freezing in pipes.

Features:

- operation temperature: 0 to 50°C
- operation humidity: 10 to 90%RH (without condensation)
- three sensors and real time programmer (Microsol II plus only)

Product Code	Description	List Price
MICROSOL II plus	Temperature controller, solar heating systems, 230Vac, 16A, 2 auxiliary outputs, SITRAD®	98.59

refrigeration controllers



- refrigeration controllers with fan/defrost control and alarm outputs
- can communicate with Sitrad® (TC-900Riclock only)

The *plus* line of instruments provide a serial output to connect with SITRAD® management software through the CONV96 Interface. The interface is used to convert the RS485 signal into RS232. Each interface can communicate with up to 96 Full Gauge controllers.

Product Code	Description	List Price
TC-900Riclock	Refrigeration controller, -50..75°C, 230Vac, 3 outputs, clock, SITRAD®, timed defrost	94.34
TC-910Ri	Refrigeration controller, 230Vac, 4 outputs, 2 sensors, dual stage	63.28
TC-940Ri	Refrigeration controller, -50..75°C, 230Vac, 4 outputs, fan, alarm, defrost function	123.31

panel mount controllers - single output



Digital temperature controllers with a single output for use in boilers, ovens, refrigeration plants, freezers and refrigerated counters.

Features:

- temperature range from -50°C to 105°C
- supplied complete with temperature probe

Product Code	Description	List Price
TIC-17C	Digital thermostat, -50..105°C, 230Vac, 10A output, circular	199.83
TIC-17RGTi	Digital thermostat, -50..105°C, 230Vac, 16A output, goes up to 200°C with additional SB-59 sensor	151.59

Basic Electronic Controllers

panel mount controllers - two & three output



Controllers with two or three outputs primarily for use in air conditioning.

Features:

- power supply: 230Vac
- temperature range from -50°C to 105°C, -50°C to 200°C with SB-59
- supplied complete with temperature probe

Product Code	Description	List Price
MT-516E	Digital temperature controller, -50..105°C, 230Vac, 2 outputs	196.38
MT-543Eplus	Controller, -50..105°C, 230Vac, 3 outputs, internal alarm, SITRAD® (max 300°C with PT100 sensor)	250.82
RL-SIL-100-3	Cable temperature sensor, 3m cable length, PT100, -30..180°C, 100mm probe	115.60
RL-PFA	Cable temperature sensor, 2m cable length, PT100, -190..260°C, 100mm probe	161.50
MT-622E	High temperature controller, 2 relay, 230VAC, 600C with J-type probe (SB12 order separately)	254.95
SB-12	Type J thermocouple temperature sensor	49.96

universal controllers

SIEMENS



Universal controller with P/PI action for heat, ventilation and air conditioning.

- PI limiter function (absolute and relative limit)
- remote setpoint and setpoint compensation
- winter/summer mode changeover (analogue or digital input)
- maximum priority for cooling/dehumidifying

Setpoint typically pre-commission and supply these controllers, as per your requirements. An additional labour charge may apply.

Product Code	Description	List Price
RWD62	Universal controller, 24Vac, 2 x 0..10Vdc modulating outputs	408.00
RWD68	Universal controller, 24Vac, 1 relay output, 0..10Vdc modulating output	399.00
RWD82	Universal controller, 24Vac, 2 relay outputs	444.00
RWF50.30A9	Universal controller, 230Vac, universal input, 1 relay output, 0..10V output, panel mount	1,009.00

electronic controllers - DIN mount

geca



The ETI is a compact thermostat for industrial applications, primarily used for ON/OFF control of a single electric heating element.

ETI thermostats are ideal for pipe frost protection and for control of pumps and compressors. And using the integrated changeover relay the ETI can be used as a cooling thermostat.

Product Code	Description	List Price
TE50	Thermostat, DIN mount, 230Vac, -10°C..+50°C	325.75
ETF622	Cable sensor for TE50	146.41

Basic Electronic Controllers

heat pump controllers

SIEMENS



- programmable controllers with standard pre-configured applications
- programmable via push buttons or a software tool
- suitable for 1, 2 or 3 compressor units
- adjustable compressor time delays, selectable alarm inputs
- economiser "Open Air" control for improved comfort and energy savings

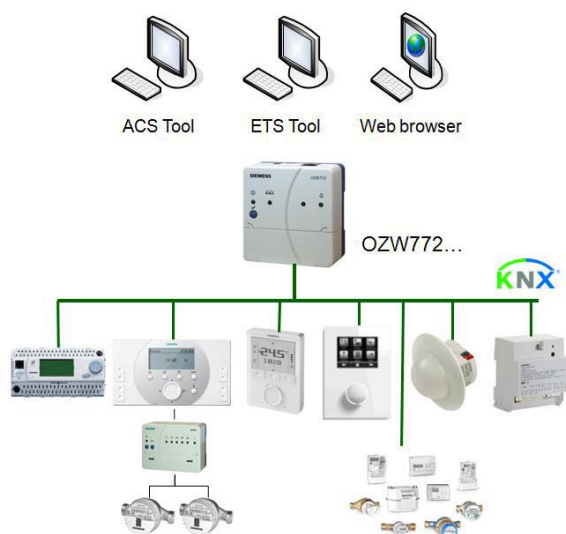
Setpoint typically pre-commission and supply these controllers, as per your requirements. An additional labour charge may apply.

Product Code	Description	List Price
RWD34	Heat pump controller, 230Vac, 4 relay outputs	328.00
RWD44	Heat pump controller, 24Vac, 4 relay outputs	319.00

Multi Loop HVAC Controllers

universal controllers - DIN mount

SIEMENS



Universal controllers with integrated control and supervisory functions.

- tested, predefined applications
- flexible configuration
- autonomous sequence controllers with P, PI or PID mode
- functions can be extended (extension modules)
- clear text operation with sequence operator unit (plug-in or detached)
- integrated KNX bus communication
- no commissioning tool required



Setpoint typically pre-commission and supply these controllers, as per your requirements, complete with commissioning reports and wiring diagrams. An additional labour charge may apply.

These universal controllers are ideal for commercial sites such as community centres (e.g. Fielding Hall, Carterton Events Centre), schools (e.g. Masterton College), swimming pools (e.g. Naenae, Flaxmere) and supermarkets. Setpoint has supplied these controllers to over 20 supermarkets throughout New Zealand.

Product Code	Description
RMU710B-2	Synco 700 controller, 6UI, 2 analog outputs, 2 digital outputs
RMU720B-2	Synco 700 controller, 8UI, 3 analog outputs, 4 digital outputs, 2 loops
RMU730B-2	Synco 700 controller, 8UI, 4 analog outputs, 6 digital outputs, 3 loops
RMS705B-2	Synco 700, switching and monitoring device, 8UI, 4 analog outputs, 6 digital outputs
RMZ790	Clip on interface for Synco 700
RMZ791	Synco 700 detached user interface with 3m cable
RMZ792	Synco 700 Bus operator unit
RMZ787	Synco 700 universal module, 4UI, 4 digital outputs
RMZ788	Synco 700 universal module, 4UI, 2 analog outputs, 2 digital outputs
RMZ785	Synco 700 universal module, 8UI

Multi Loop HVAC Controllers

universal controllers - field mount

SIEMENS



Suited to a range of HVAC applications.

- 2 control loops
- autonomous sequence controllers with P, PI or PID mode
- large integrated LCD display
- no commissioning tool required

Setpoint typically pre-commission and supply these controllers, as per your requirements. An additional labour charge may apply.

Product Code	Description
RLU222	Universal controller, DIN mount, 2 analog outputs, 2 digital outputs, 2 control loops
RLU232	Universal controller, DIN mount, 3 analog outputs, 2 digital outputs, 2 control loops
RLU236	Universal controller, DIN mount, 3 analog outputs, 6 digital outputs, 2 control loops

Power Supplies

power supplies - DIN mount

SIEMENS



Transformers providing a reduction in voltage from 230Vac to 24Vac/dc.

- suitable for mounting on DIN rails
- secondary power supply indication via LED
- integral self-resetting primary fuse (SEM62.2)

Product Code	Description	List Price
SEM62.2	Transformer, 30VA, includes switch and fuse, 24Vac	101.00
P-6EP1331-1SH03	LOGO! Power Supply, 240Vac/24Vdc, 1.3A	170.80
P-6EP1332-1SH43	LOGO! Power Supply, 240Vac/24Vdc, 2.5A	221.42
STEU63/24	Control/isolating transformer, 230/24Vac, 63VA, DIN mount	116.06

power supplies - panel mount

BLOCK



Low inrush current control, safety isolating and isolating transformers

- screw type terminals
- screw mounting
- available from 20VA to 500VA

Product Code	Description	List Price
ST100/23/24	Control/Isolating transformer, 230/24Vac, 100VA	160.22
ST160/23/24	Control/Isolating transformer, 230/24Vac, 160VA	210.87
ST250/23/24	Control/Isolating transformer, 230/24Vac, 250VA	257.01
ST320/23/24	Control/Isolating transformer, 230/24Vac, 320VA	309.91
ST400/23/24	Control/Isolating transformer, 230/24Vac, 400VA	349.78

Logic Controllers

LOGO! Universal Logic Modules

SIEMENS



The logo system is suited to small automation projects. It makes life easier by replacing many time switches and relays, counters and protective relays.

- integrated front panel with background illumination (4 x 12 characters)
- integrated EEPROM for storing control programme and setpoints
- integrated clock with automatic summertime/wintertime changeover
- 4 inputs as analog inputs for 12/24Vdc variants (0..10V); inputs can also be used as digital inputs
- interface for connecting expansion modules, max 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed
- Setpoint pre-commission the LOGO! to your requirements. We also provide connection drawings, function descriptions, on site commissioning and commissioning reports for an additional fee

These systems are ideal for computer room monitoring and duty changeover, e.g. SIS building, the Terrace tunnel, school time clocks

Product Code	Description
6ED1052-1FB00-0BA8	LOGO! 230RCE, Logic controller, 8DI/4DO (relay), 6 line LCD, built in web server
6ED1052-1MD00-0BA8	LOGO! 12/24RCE, Logic controller, 8DI (of which 4AI)/4DO (relay), 6 line LCD, built in web server
6ED1052-1CC01-0BA8	LOGO! 24CE, Logic controller, 8DI (of which 4AI)/4DO (triac), 6 line LCD, built in web server
6ED1055-1FB00-0BA2	LOGO! DM8 230R, digital exp. module, 4DI/4DO (relay), for LOGO 8
6ED1055-1FB10-0BA2	LOGO! DM16 230R, digital exp. module, 8DI/8DO (relay), for LOGO 8
6ED1055-1MB00-0BA2	LOGO! DM8 12/24R, digital exp. module, 4DI/4DO (relay), for LOGO 8
6ED1055-1NB10-0BA2	LOGO! DM16 24R, digital exp. module, 8DI/8DO (relay), for LOGO 8
6ED1055-1CB00-0BA2	LOGO! DM8 24, digital exp. module, 4DI/4DO (triac), for LOGO 8
6ED1055-1CB10-0BA2	LOGO! DM16 24, digital exp. module, 8DI/8DO (triac), for LOGO 8
6ED1055-1MA00-0BA2	LOGO! AM2, analog exp. module, 2AI (0..10Vdc or 0/4..20mA), for LOGO 8
6ED1055-1MD00-0BA2	LOGO! AM2 RTD, analog exp. module, 2AI (PT100/1000), for LOGO 8
6ED1055-1MM00-0BA2	LOGO! AM2 AQ, analog exp. module, 2AO (0..10Vdc or 0/4..20mA), for LOGO 8
6ED1055-4MH00-0BA1	LOGO! TD, text display, 6 lines with 3 background colours, 2 x RJ45 ports, for LOGO 8
6EP1331-1SH03	Siemens LOGO! Power supply, 240Vac/24Vdc 1.3A
6EP1332-1SH43	Siemens LOGO! Power supply, 240Vac/24Vdc 2.5A
6EP1332-1SH52	Siemens LOGO! Power supply, 240Vac/24Vdc 4.0A
6ED1057-4CA00-0AA0	Siemens LOGO! Contact, 4kW, 20A, 24Vdc coil
6ED1057-4EA00-0AA0	Siemens LOGO! Contact, 4kW, 20A, 230Vac coil
6GK7177-1MA20-0AA0	Siemens LOGO! CSM12/24 Ethernet switch, 4-port unmanaged, din mount
6GK7142-7BX00-0AX0	Siemens LOGO! CMR2020, SMS/GPS comms. module, 24Vdc, 2DI/2DO, Ind. Ethernet (Vodafone or 2deg
6NH9860-1AA00	Siemens Antenna for CMR2020, 5m cable, weather resistant, inc. mounting bracket

Surge Protection



Surge protector recommended for all control systems consisting of base element and ground connector with high-capacity varistor.

For DIN mounting, nominal voltage: 230 Vac, 1 channel.

Product Code	Description	List Price
PH2817738	VAL-MS BE/FM Base Element with Protective Plug (monitoring)	47.25



Indicators

universal indicators



The SGD... is a PanelPilot Compatible graphics display with a 320 x 240 pixel colour display and USB programming interface.

Features:

- power supply: 24Vdc, inputs: 2 x 0..10Vdc
- compatible with Windows XP, 2000, Vista, and Windows 7

Product Code	Description	List Price
SGD 24-M	PanelPilot digital meter, 2.4" colour display, 2 x 0..10Vdc, 24Vdc	361.26
SGD 28-M	PanelPilot digital meter, 2.8" colour display, 2 x 0..10Vdc, 24Vdc	421.52

Time Switches

SIEMENS



Digital time switches used to switch plant on and off, or for the control of setback periods at nights or at weekends.

- suitable for mounting on DIN rail
- simple programming with large and easy to understand LCD
- 230Vac power supply (24Vac/dc option also available)

Product Code	Description	List Price
SEH62.1	Digital time switch, DIN mount, 230Vac, c/w after hours run on timer, 7 day week, 8 on/off	156.00
LOGO!	365 day time switch, 4ch, DIN mount, a/h function, daylight saving, pre-programmed	from 495.00

Auto Diallers & Dataloggers

autodiallers



Features:

- 8 digital inputs (4 x NO, 4 x NC), 4 digital outputs
- user programmable input names
- programmable input delays
- programmable latching or non latching inputs

Product Code	Description	List Price
SMS-8	Auto dialler, 8DI, 4DO, 12Vdc, adjustable delays (includes pre-commissioning as required)	1,188.00
SMS-2	Auto dialler, 2DI, 2DO, 12/24Vdc, includes smart phone app	656.25

dataloggers



en-eWeb includes powerful web based features, such as:

- data logging and event logging, trending
- email notification and email data log delivery
- astronomical clock and time/date clock
- integral web server with Flash file system
- Ethernet 10/100BaseT BACnet IP

Product Code	Description	List Price
en-eWeb	Datalogger, 12 universal inputs/2 digital outputs, web server, 24Vac/dc (includes pre-commissioning)	2,760.00



Solid State Relays

solid state relays - DIN mount (single phase)



- Large control range : 17-60Vac/dc
- LED visualisation on input
- Very high immunity: voltage protection on output and input
- Low leakage current (<1mA) and low zero cross voltage
- DIN rail
- integrated heat sink

Product Code	Description	List Price
SUL942460	Solid state relay, 25A, 12..280Vac, control range 3..32Vdc	232.47
SUL865770	Solid state relay, 32A, 24..510Vac, control range 18...30Vdc	164.06
SUL865970	Solid state relay, 32A, 24..510Vac output, input control, 150..240Vac/dc	325.67

solid state relays - surface mount



- Zero cross SSR designed for most load types
- LED visualisation on input
- Made in France
- Direct replacement options for most SSR brands; contact us to discuss

Product Code	Description	List Price
SO865970	Celduc SSR, 24-510Vac 50A, 20..265Vac/dc control	191.58
SO867970	Celduc SSR, 24-510Vac 75A, 20..265Vac/dc control	310.00
SO465020	Celduc SSR, 200-480Vac 50A, 0..10Vdc control	811.57
SGT8858200	Celduc SSR, screw mount, 24-640Vac 3x42A, 24-255Vac/dc control	710.08
WF151200	Celduc SSR heat sink, DIN mount, for SO type, up to 25A	100.01
WF121000	Celduc SSR heat sink, DIN mount, for SO/SG/SVT type, up to 50A	217.61
WF115100	Celduc SSR heat sink, DIN mount, for SO/SG/SVT type, up to 75A	352.00
WHS3-80	Celduc SSR heat sink, surface mount, for 1 x SO solid state relay, up to 30A	97.21
WHS3-250	Celduc SSR heat sink, surface mount, for 3 x SO solid state relays, up to 75A	165.17
WF070000	Celduc SSR heat sink, surface mount, for SO/SG/SVT type, up to 75A	320.03
CF-500	Thermal Grease Syringe, 1.5g	6.30

Damper Actuators - Spring Return

SIEMENS



- electric motor-driven actuators for two-position and three-position control as well as 0..10Vdc control
- 2Nm nominal torque
- prewired with 0.9m connecting cable
- auxiliary switch for auxiliary functions (optional at extra cost)

Product Code	Description	List Price
GQD121.1A	Damper actuator, 24Vac/dc, 2Nm, spring return, 2 position, domestic damper, 30 second run time	213.00
GQD321.1A	Damper actuator, 230Vac, 2Nm, spring return, 2 position, domestic damper, 30 second run time	213.00
GQD131.1A	Damper actuator, 24Vac/dc, 2Nm, spring return, 3 position, domestic damper, 30 second run time	246.00
GQD161.1A	Damper actuator, 24Vac/dc, 2Nm, spring return, 0..10Vdc, domestic damper, 30 second run time	281.00



Electronic motor driven actuators for 3-position and modulating control. Type specific variations with adjustable offset and span for the positioning signal, position indicator, feedback potentiometer, self-adaption of rotational angle range and adjustable auxiliary switches for supplementary functions.

Typical use:

- dampers are friction dependent and for damper areas up to 3m²
- in ventilation sections where the actuator must move to the zero position (emergency position) during power failure
- for dampers having two actuators on the same damper shaft

Product Code	Description	Voltage	Torque	Signal	Size	Run Time	List Price
GNP191.1E	Damper actuator	24Vac/dc	6Nm	2, 3 pos, 0..10Vdc, 4..20mA	1m ²	2secs	586.00
GMA121.1E	Damper actuator	24Vac/dc	7Nm	2 position	1.5m ²	90s open, 15s close	354.00
GMA131.1E	Damper actuator	24Vac/dc	7Nm	3 position	1.5m ²	90s open, 15s close	388.00
GMA161.1E	Damper actuator	24Vac/dc	7Nm	0..10Vdc	1.5m ²	90s open, 15s close	424.00
GMA321.1E	Damper actuator	230Vac	7Nm	2 position	1.5m ²	90s open, 15s close	388.00
GCA121.1E	Damper actuator	24Vac	18Nm	2 position	3.0m ²	90s open, 15s close	443.00
GCA131.1E	Damper actuator	24Vac	18Nm	3 position	3.0m ²	90s open, 15s close	482.00
GCA161.1E	Damper actuator	24Vac	18Nm	0..10Vdc	3.0m ²	90s open, 15s close	515.00
GCA321.1E	Damper actuator	230Vac	18Nm	2 position	3.0m ²	90s open, 15s close	492.00

Damper Actuators - Non-Spring Return

SIEMENS



GSD.. series



GDB.. series
GLB.. series



GEB.. series



GBB.. series
GIB.. series

Product Code	Description	Voltage	Torque	Signal	Damper Size	Run Time	List Price
GSD121.1A	Damper actuator, domestic	24Vac/dc	2Nm	2 position	0.3m ²	30sec	130.00
GSD321.1A	Damper actuator, domestic	230Vac	2Nm	2 position	0.3m ²	30sec	130.00
GDB141.1E	Damper actuator	24Vac	5Nm	3 position	0.8m ²	150sec	170.00
GDB161.1E	Damper actuator	24Vac	5Nm	0..10Vdc	0.8m ²	150sec	271.00
GDB341.1E	Damper actuator	230Vac	5Nm	3 position	0.8m ²	150sec	170.00
GAP191.1E	Damper actuator	24Vac/dc	6Nm	2, 3 pos, 0..10Vdc, 4..20mA	1m ²	2sec	420.00
GLB141.1E	Damper actuator	24Vac	10Nm	3 position	1.5m ²	150sec	201.00
GLB161.1E	Damper actuator	24Vac	10Nm	0..10Vdc	1.5m ²	150sec	320.00
GLB341.1E	Damper actuator	230Vac	10Nm	3 position	1.5m ²	150sec	201.00
GEB131.1E	Damper actuator	24Vac	15Nm	3 position	3.0m ²	150sec	266.00
GEB161.1E	Damper actuator	24Vac	15Nm	0..10Vdc	3.0m ²	150sec	385.00
GEB331.1E	Damper actuator	230Vac	15Nm	3 position	3.0m ²	150sec	266.00
GBB131.1E	Damper actuator	24Vac	25Nm	3 position	4.0m ²	150sec	310.00
GBB161.1E	Damper actuator	24Vac	25Nm	0..10Vdc	4.0m ²	150sec	430.00
GBB331.1E	Damper actuator	230Vac	25Nm	3 position	4.0m ²	150sec	310.00
GIB131.1E	Damper actuator	24Vac	35Nm	3 position	6.0m ²	150sec	414.00
GIB161.1E	Damper actuator	24Vac	35Nm	0..10Vdc	6.0m ²	150sec	533.00
GIB331.1E	Damper actuator	230Vac	35Nm	3 position	6.0m ²	150sec	414.00
Models with limit switches, adjustable spans and linear strokes are also available.							
ASC77.2E	Accessory for damper actuators, 2 x external auxiliary switches						115.00

Variable Speed Drives

vsd's IP54 G120 series

SIEMENS



- IP54/5 as standard/operation to 60°C
- B class filter installed as standard
- USB port for software tool and memory card slot
- 4 PID controllers
- Sizes from 0.37kW to 90kW
- Onboard communication protocols: Modbus RTU, BacNet MS/TP, Profibus DP, CanOpen, USS, P1
- HVAC functions: motor staging, hibernation, essential service mode, Ni1000/PT1000 inputs

Product Code	Description	List Price
G120P-0.75/35A	Siemens VSD, 0.75 kW, 2.2A FLA @ 40C, class A EMC filter, IP55, 154W x 460H x 264D	954.00
G120P-1.1/35A	Siemens VSD, 1.1 kW, 3.1A FLA @ 40C, class A EMC filter, IP55, 154W x 460H x 264D	963.00
G120P-1.5/35A	Siemens VSD, 1.5 kW, 4.1A FLA @ 40C, class A EMC filter, IP55, 154W x 460H x 264D	1,173.00
G120P-2.2/35A	Siemens VSD, 2.2 kW, 5.9A FLA @ 40C, class A EMC filter, IP55, 154W x 460H x 264D	1,283.00
G120P-3/35A	Siemens VSD, 3.0 kW, 7.7A FLA @ 40C, class A EMC filter, IP55, 154W x 460H x 264D	1,518.00



Variable Speed Drives

vsd's IP54 G120 series

SIEMENS

Product Code	Description	List Price
G120P-4/35A	Siemens VSD, 4.0 kW, 10.2A FLA @ 40C, class A EMC filter, IP55, 180W x 540H x 264D	1,689.00
G120P-5.5/35A	Siemens VSD, 5.5 kW, 13.2A FLA @ 40C, class A EMC filter, IP55, 180W x 540H x 264D	1,752.00
G120P-7.5/35A	Siemens VSD, 7.5 kW, 18A FLA @ 40C, class A EMC filter, IP55, 180W x 540H x 264D	2,256.00
G120P-11/35A	Siemens VSD, 11 kW, 26A FLA @ 40C, class A EMC filter, IP55, 230W x 620H x 264D	2,714.00
G120P-15/35A	Siemens VSD, 15 kW, 32A FLA @ 40C, class A EMC filter, IP55, 230W x 620H x 264D	3,393.00
G120P-18.5/35A	Siemens VSD, 18.5 kW, 38A FLA @ 40C, class A EMC filter, IP55, 230W x 620H x 264D	4,103.00
G120P-22/35A	Siemens VSD, 22 kW, 45A FLA @ 40C, class A EMC filter, IP55, 320W x 640H x 344D	4,719.00
G120P-30/35A	Siemens VSD, 30 kW, 60A FLA @ 40C, class A EMC filter, IP55, 320W x 640H x 344D	5,838.00
G120P-37/35A	Siemens VSD, 37 kW, 75A FLA @ 40C, class A EMC filter, IP55, 320W x 751H x 344D	7,022.00
G120P-45/35A	Siemens VSD, 45 kW, 90A FLA @ 40C, class A EMC filter, IP55, 320W x 751H x 344D	8,364.00
G120P-55/35A	Siemens VSD, 55 kW, 110A FLA @ 40C, class A EMC filter, IP55, 410W x 915H x 431D	10,446.00
G120P-75/35A	Siemens VSD, 75 kW, 145A FLA @ 40C, class A EMC filter, IP55, 410W x 915H x 431D	12,909.00
G120P-90/35A	Siemens VSD, 90 kW, 178A FLA @ 40C, class A EMC filter, IP55, 410W x 915H x 431D	14,850.00

vsd's IP54 G120 series - accessories

SIEMENS

Product Code	Description	List Price
G120P-BCOVER	Siemens G120P VSD blanking cover	45.00
G120P-BOP-2	Siemens G120P VSD basic operator panel (BOP-2)	84.00
G120P-DOOR-KIT	Siemens G120P VSD door kit for IOP/BOP-2	66.00
G120P-IOP-2	Siemens G120P VSD intelligent operator panel (IOP2)	206.00

vsd's IP20 G120 series (for mounting in MCC cabinet)

SIEMENS

Product Code	Description	List Price
G120P-0.75/32A	Siemens VSD, 0.75 kW, 2.2A FLA @ 40C, class A EMC filter, IP20, 73W x 202H x 308D	864.00
G120P-1.1/32A	Siemens VSD, 1.1 kW, 3.1A FLA @ 40C, class A EMC filter, IP20, 73W x 202H x 308D	889.00
G120P-1.5/32A	Siemens VSD, 1.5 kW, 4.1A FLA @ 40C, class A EMC filter, IP20, 73W x 202H x 308D	992.00
G120P-2.2/32A	Siemens VSD, 2.2 kW, 5.9A FLA @ 40C, class A EMC filter, IP20, 73W x 202H x 308D	1,113.00
G120P-3/32A	Siemens VSD, 3.0 kW, 7.7A FLA @ 40C, class A EMC filter, IP20, 73W x 202H x 308D	1,293.00

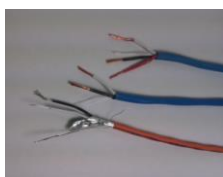
vsd's V20 series

SIEMENS

Product Code	Description	List Price
6SL3210-5BB15-5AV0	Siemens V20 VSD, 0.55 kW, 1ph 230Vac input, 3.2A FLA @ 40C, class A filter, IP20, FSA	499.11
6SL3210-5BB17-5AV0	Siemens V20 VSD, 0.75 kW, 1ph 230Vac input, 3.9A FLA @ 40C, class A filter, IP20, FSA	536.83
6SL3210-5BB21-1AV0	Siemens V20 VSD, 1.1 kW, 1ph 230Vac input, 6.0A FLA @ 40C, class A filter, IP20, FSB	609.39
6SL3210-5BB21-5AV0	Siemens V20 VSD, 1.5 kW, 1ph 230Vac input, 7.8A FLA @ 40C, class A filter, IP20, FSB	684.83
6SL3210-5BB22-2AV0	Siemens V20 VSD, 2.2 kW, 1ph 230Vac input, 11.0A FLA @ 40C, class A filter, IP20, FSC	835.72
6SL3210-5BB23-0AV0	Siemens V20 VSD, 3.0 kW, 1ph 230Vac input, 13.6A FLA @ 40C, class A filter, IP20, FSC	972.11

Cable

Siemens recommended controls cable



Typical cable applications include:

- sensors
- actuators
- control signals
- extra low voltage power (24Vac/dc)

Product Code	Description	List Price
C-RJ11 R101	6 core flat stranded cable, 100m drum	131.25
342336	6P6C modular plugs	1.25
H-3C18-CMR	Cable, 3 core 18 AWG, 305m drum, for active sensors and output devices	598.50
H-TP18-CMR	DI, DO, AI, AO cable, 2 core 18 AWG twisted, 305m drum, for passive sensors	511.88
H-F-1.5TSP24LC-CM	BACnet comms cable, 3 core twisted 24 AWG, 305m drum, orange jacket with blue stripe	696.15

vsd cable



Setpoint recommends the use of VSD cable when installing all VSDs to help prevent potential EMI and RFI issues.

Specifications:

- tinned copper wire braid
- low smoke, zero halogen flexible rubber insulation
- sheath resistant to oil, petrol, acid, sea water and UV light
- -40°C to +110°C operating temperature
- high strength rip cord under sheath

NZ regulations are soon to require all installations to use approved VSD cable. Neutral screen is NOT acceptable and approved metal cable glands MUST be used at the motor end.

Product Code	Description	List Price
P-EU-PATD/4C1.5BK	VSD cable, 1.5mm, 4 core, tinned, halogen free, per metre	11.50
P-EU-PATD/4C2.5BK	VSD cable, 2.5mm, 4 core, tinned, halogen free, per metre	15.93
P-EU-PATD/4C4BK	VSD cable, 4.0mm, 4 core, tinned, halogen free, per metre	23.67
P-EU-PATD/4C6BK	VSD cable, 6.0mm, 4 core, tinned, halogen free, per metre	27.33
P-EU-PATN/4C10OR	VSD cable, 10.0mm, 4 core, tinned, halogen free, per metre	39.93
P-EU-PATN/4C16OR	VSD cable, 16.0mm, 4 core, tinned, halogen free, per metre	55.17
P-G420 + G4L20	EMC metal gland & locknut, M20, for 1.5mm VSD cable	45.19
P-G425 + G4L25	EMC metal gland & locknut, M25, for 2.5-6.0mm VSD cable	52.32

isolators



If an isolator is required between the VSD and motor, one must be made to comply with the new EMC standards (to be introduced in 2012).

A metal gland must be fitted to make the screen continuous going into/out of the isolator and motor terminal box; 3 glands in total will be required. If the isolator is going to be used while the VSD still has a run command, we recommend the isolator's auxiliary is used to shut the VSD down (via an 18AWG twisted pair into a DI on the VSD) otherwise 6 full load currents may be applied to the VSD causing it to trip or fail.

Product Code	Description	List Price
en-eisolator	3 pole isolator, plus auxiliary, 40A, with metal enclosure	320.00
SZ1D4-125M	4 pole isolator, 125A, switch mounted in powder coated steel enclosure (300h x 300w x 150d)	420.89

Fabric Ducting

Setpoint are distributors for the quality range of Euro Air fabric ducting.

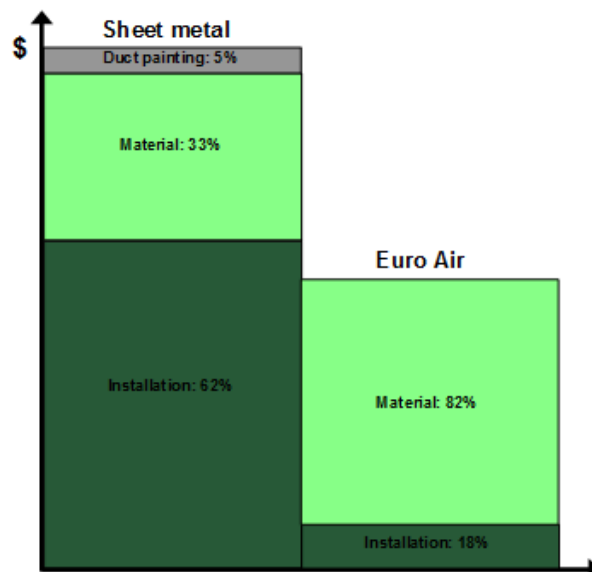
Euro Air ducting provides many benefits over traditional metal ducting:

- reduced installation and overall costs
- draught free environment with uniform air distribution
- energy efficient by delivering air directly to occupied areas
- acoustic benefits
- more environmentally friendly to manufacture
- design freedom and good aesthetics
- hygienic and machine washable
- reduced condensation risk
- easily manoeuvrable when servicing other areas
- complies with AS/NZS11530.3 fire safety standard

The Euro Air range includes:

- low impulse ducts
- slot diffuser ducts
- inject ducts
- nozzle ducts
- membrane ducts

Cost Comparison



Please contact your local Setpoint office for further information and pricing.



Warehousing



Waipukurau Pool



Storage Room



Wanaka Pool



Electra Offices



Whitby Lakes Retirement Village

Valves - on/off

solenoid valves



The strength and reliability of this range of solenoid valves make them the ideal solution for a wide variety of industrial applications. They are particularly suitable for the control of water, air, inert gases, steam and non-aggressive fluids.

Features:

- 2-way valve, normally closed
- servo-assisted membrane actuator
- fluid: water, oil, air, diesel, fuel
- power supply: 230Vac
- fluid temperature: -10°C..90°C
- all valves supplied with 230Vac coils as standard

Product Code	Description	List Price
MC111	Solenoid valve body, NC, 230Vac, DN15	114.24
MC112	Solenoid valve body, NC, 230Vac, DN20	128.18
MC113	Solenoid valve body, NC, 230Vac, DN25	160.85
MC171	Solenoid valve body, NC, 230Vac, DN32	634.03
MC172	Solenoid valve body, NC, 230Vac, DN40	634.03
MC173	Solenoid valve body, NC, 230Vac, DN50	722.45
MC997	Connector for MC solenoid valve coil	10.00
MC995	Solenoid coil, 24Vac, use with MC type valve	27.99

gas solenoid valves - auto reset



Rapid opening, normally closed gas solenoid valves. Suitable for various gases including Natural gas, Propane and LPG.

Features:

- normally closed, auto reset
- connections: screwed DN15 to DN50, flanged DN65 to DN100
- nominal voltage: 230Vac 50/60Hz (12Vdc on request)
- ambient temperature: -15°C..60°C
- aluminium body

Product Code	Description	List Price
AV015FO	Gas solenoid valve, NC, DN15, auto reset	190.32
AV020FO	Gas solenoid valve, NC, DN20, auto reset	190.32
AV025FO	Gas solenoid valve, NC, DN25, auto reset	190.32
AV032FO	Gas solenoid valve, NC, DN32, auto reset	524.13
AV040FO	Gas solenoid valve, NC, DN40, auto reset	524.13
AV050FO	Gas solenoid valve, NC, DN50, auto reset	570.51
AVD65FO	Gas solenoid valve, NC, DN65, auto reset	1,488.09
AVD80FO	Gas solenoid valve, NC, DN80, auto reset	1,501.80
AVD100FO	Gas solenoid valve, NC, DN100, auto reset	2,656.77



Valves - on/off

gas solenoid valves - manual reset



Normally closed gas solenoid valves with manual reset.

Features:

- normally closed, manual reset
- connections: screwed DN15 to DN50, flanged DN65 to DN100
- power supply: 230Vac
- brass body (DN15 to DN50), aluminium body (DN65 to DN100)
- also available with magnetic switch

Position indication also available for approximately an additional \$200 - please contact your local office for firm pricing.

Product Code	Description	List Price
VR600	Gas solenoid valve, NC, DN15, manual reset	147.14
VR610	Gas solenoid valve, NC, DN20, manual reset	147.14
VR620	Gas solenoid valve, NC, DN25, manual reset	156.51
VR630	Gas solenoid valve, NC, DN32, manual reset	284.69
VR640	Gas solenoid valve, NC, DN40, manual reset	301.14
VR650	Gas solenoid valve, NC, DN50, manual reset	397.78
VR660	Gas solenoid valve, NC, DN65, manual reset	1,068.37
VR670	Gas solenoid valve, NC, DN80, manual reset	1,353.29
VR680	Gas solenoid valve, NC, DN100, manual reset	1,880.39
VR751	Gas solenoid valve, NC, DN150, manual reset	3,254.70

gas filters



Filters widely used for the protection of control devices, pressure regulators, meters and systems requiring a high degree of filtration. They can be used with all types of Natural Gas, LPG or non-corrosive gases.

The large surface of the cartridge ensures a high degree of separation of both dust and solid particles, minimising the maintenance on all equipment installed downstream of the filter.

Product Code	Description	List Price
AG130	Domestic boiler filter, threaded, ½", max pressure 10 bar	24.99
AG131	Domestic boiler filter, threaded, ¾", max pressure 10 bar	24.99
AG132	Gas line filter, threaded, ½", max pressure 10 bar	68.97
AG133	Gas line filter, threaded, ¾", max pressure 10 bar	68.97
AG134	Gas line filter, threaded, 1", max pressure 10 bar	68.97
AG135	Gas line filter, threaded, 1 ¼", max pressure 10 bar	109.96
AG136	Gas line filter, threaded, 1 ½", max pressure 10 bar	109.96
AG137	Gas line filter, threaded, 2", max pressure 10 bar	137.94
AG138	Gas line filter, flanged, DN65, max pressure 10 bar	587.76
AG139	Gas line filter, flanged, DN80, max pressure 10 bar	667.73
AG140	Gas line filter, flanged, DN100, max pressure 10 bar	1,113.55
AG141	Gas line filter, flanged, DN150, max pressure 2 bar	2,570.97

Valves - on/off

butterfly valves - wafer

SIEMENS



For use as motorised control or shut-off valves in heating, ventilation and air conditioning systems;

- in open and closed circuits
- for 2-position (open/closed) and 3-position controls
- for boiler, chiller and cooling tower sequencing circuits
- to open or close flow to a heat exchanger or to complete plant sections

Actuator technical specifications:

- Siemens rotary actuator
- power supply: 24Vac (230Vac available on request)
- protection level: IP54
- positioning time: 90 seconds
- optional position switch available

Butterfly valve technical specifications:

- CV table E wafer butterfly valve
- DN40 to DN125 (DN150 to DN300 available on request)
- operating temperature: -15..140°C
- max operating pressure: PN10
- materials: grey cast iron housing, stainless steel valve disc, EPDM liner

Product Code	Description	List Price
BVW40/24.3P	Motorised wafer butterfly valve, DN40, 24Vac, 3-position	1,014.00
BVW50/24.3P	Motorised wafer butterfly valve, DN50, 24Vac, 3-position	1,048.00
BVW65/24.3P	Motorised wafer butterfly valve, DN65, 24Vac, 3-position	1,135.00
BVW80/24.3P	Motorised wafer butterfly valve, DN80, 24Vac, 3-position	1,167.00
BVW100/24.3P	Motorised wafer butterfly valve, DN100, 24Vac, 3-position	1,222.00
BVW125/24.3P	Motorised wafer butterfly valve, DN125, 24Vac, 3-position	

butterfly valves - lugged

SIEMENS



For use as motorised control or shut-off valves in heating, ventilation and air conditioning systems;

- in open and closed circuits, for 2-pos (open/closed) and 3-pos controls
- for boiler, chiller and cooling tower sequencing circuits
- to open or close flow to a heat exchanger or to complete plant sections

Actuator technical specifications:

- power supply: 24Vac (230Vac available on request)
- protection level: IP54
- positioning time: 90 seconds
- optional position switch available

Butterfly valve technical specifications:

- CV table E lugged butterfly valve
- DN40 to DN125 (DN150 to DN300 available on request)
- operating temperature: -15..140°C
- max operating pressure: PN10

Product Code	Description	List Price
BVL50/24.SR	Motorised lugged butterfly valve, DN50, 24Vac, 3-position	749.07
BVL65/24.SR	Motorised lugged butterfly valve, DN65, 24Vac, 3-position	764.29
BVL80/24.SR	Motorised lugged butterfly valve, DN80, 24Vac, 3-position	784.98
BVL100/24.3P	Motorised lugged butterfly valve, DN100, 24Vac, 3-position	804.18
BVL125/24.3P	Motorised lugged butterfly valve, DN125, 24Vac, 3-position	891.91

Valves - on/off

2- and 3-port ball valves

SIEMENS



2 and 3-port valves with internal thread connections for use in glycol heating, ventilating and air conditioning plants as a control or safety shutoff valve.

Features:

- brass ball valve body with internally threaded connections
- angle of rotation 90°
- for use with rotary actuators (spring-return and without spring-return)
- L or T configuration available
- temperature range: -10..120°C

Product Code	Description	List Price
VAI60.15-15	Ball valve, open/close, 2- way, full port, DN15, -10..120°C, for use with GQD.. actuator	100.00
VAI60.20-22	Ball valve, open/close, 2- way, full port, DN20, -10..120°C, for use with GQD.. actuator	120.00
VAI60.25-22	Ball valve, open/close, 2- way, full port, DN25, -10..120°C, for use with GDB.. actuator	142.00
VAI60.32-35	Ball valve, open/close, 2- way, full port, DN32, -10..120°C, for use with GLB.. or GMA.. actuator	200.00
VAI60.40-68	Ball valve, open/close, 2- way, full port, DN40, -10..120°C, for use with GLB.. or GMA.. actuator	251.00
VAI60.50-96	Ball valve, open/close, 2- way, full port, DN50, -10..120°C, for use with GLB.. or GMA.. actuator	404.00
VBI60.15-5L	Ball valve, 3- way, full L port, DN15, -10..120°C	152.00
VBI60.20-9L	Ball valve, 3- way, full L port, DN20, -10..120°C	169.00
VBI60.25-9L	Ball valve, 3- way, full L port, DN25, -10..120°C	232.00
VBI60.32-13L	Ball valve, 3- way, full L port, DN32, -10..120°C	301.00
VBI60.40-25L	Ball valve, 3- way, full L port, DN40, -10..120°C	478.00
VBI60.50-37L	Ball valve, 3- way, full L port, DN50, -10..120°C	642.00

Product Code	Description	List Price
GLB331.9E	Actuator for Siemens ball valve, 240Vac, 3 position	301.00
GLB131.9E	Actuator for Siemens ball valve, 24Vac, 3 position	301.00
GLB161.9E	Actuator for Siemens ball valve, 24Vac, 0..10Vdc	411.00
GMA131.9E	Actuator for Siemens ball valve, 24Vac, 3 position, spring return	532.00
GMA161.9E	Actuator for Siemens ball valve, 24Vac, 0..10Vdc, spring return	625.00
GQD131.9A	Rotary actuator, 24Vac/dc, 3 position, 2Nm, spring return, for ball valves up to 20mm, Δp_{max} 350	454.00
GQD161.9A	Rotary actuator, 24Vac/dc, 0..10Vdc, 2Nm, spring return, for ball valves up to 20mm, Δp_{max} 350	498.00
GDB131.9E	Rotary actuator, 24Vac/dc, 3 position, 5Nm, for ball valves up to 25mm, Δp_{max} 350	256.00
GDB161.9E	Rotary actuator, 24Vac/dc, 0..10Vdc, 5Nm, for ball valves up to 25mm, Δp_{max} 350	335.00
GDB331.9E	Rotary actuator, 230Vac, 3 position, 5Nm, for ball valves up to 25mm, Δp_{max} 350	246.00
ASK77.2	Ball valve mounting kit for GMA damper actuators	139.00
ASK77.3	Ball valve mounting kit for GLB damper actuators	91.00

Product Code	Description	List Price
ALI15VAI60/61	Insulation cover for VAI60 and VAI61, DN15	54.00
ALI20VAI60/61	Insulation cover for VAI60 and VAI61, DN20	54.00
ALI25VAI60/61	Insulation cover for VAI60 and VAI61, DN25	54.00
ALI32VAI60/61	Insulation cover for VAI60 and VAI61, DN32	65.00
ALI40VAI60/61	Insulation cover for VAI60 and VAI61, DN40	67.00
ALI50VAI60/61	Insulation cover for VAI60 and VAI61, DN50	76.00
ALI15VBI60/61	Insulation cover for VBI60 and VBI61, DN15	54.00
ALI20VBI60	Insulation cover for VBI60, DN20	54.00
ALI25VBI60/61	Insulation cover for VBI60 and VBI61, DN25	54.00
ALI32VBI60/61	Insulation cover for VBI60 and VBI61, DN32	65.00
ALI40VBI60/61	Insulation cover for VBI60 and VBI61, DN40	67.00
ALI50VBI60/61	Insulation cover for VBI60 and VBI61, DN50	76.00

Valves - on/off

2-port ball valves - full stainless steel body

SIEMENS

For use in 2 way isolation applications. Possible medium applications include: potable water, waste water, medium temperature hot water, oil, air and some corrosive liquid.



Actuator technical specifications:

- Siemens 90° rotary actuator
- power supply: 24Vac (230Vac available on request)
- protection level: IP54
- positioning time: 90sec open, 15sec close (spring return only)
- 2 position spring return actuator for DN15 to DN40 ball valves
- 3 position actuator for DN50 to DN100 ball valves. An interposing relay is required for 2 position use (not included)

Ball valve technical specifications:

- DN15 to DN100 (internal thread)
- operating temperature: -10..180°C
- max operating pressure: PN40

NB. actuator mounting kit, position indicator and manual crank included

Product Code	Description	List Price
V2SS.15/24.3P	Motorised ball valve, stainless steel, 2 port, DN15, 24Vac, 3-position	414.19
V2SS.20/24.3P	Motorised ball valve, stainless steel, 2 port, DN20, 24Vac, 3-position	485.55
V2SS.25/24.3P	Motorised ball valve, stainless steel, 2 port, DN25, 24Vac, 3-position	485.55
V2SS.32/24.3P	Motorised ball valve, stainless steel, 2 port, DN32, 24Vac, 3-position	702.61
V2SS.40/24.3P	Motorised ball valve, stainless steel, 2 port, DN40, 24Vac, 3-position	821.96
V2SS.50/24.3P	Motorised ball valve, stainless steel, 2 port, DN50, 24Vac, 3-position	909.13
V2SS.65/24.3P	Motorised ball valve, stainless steel, 2 port, DN65, 24Vac, 3-position	3,697.69
V2SS.80/24.3P	Motorised ball valve, stainless steel, 2 port, DN80, 24Vac, 3-position	4,044.92
V2SS.100/24.3P	Motorised ball valve, stainless steel, 2 port, DN100, 24Vac, 3-position	

2-port ball valves - full stainless steel body (spring return)

SIEMENS

Product Code	Description	List Price
V2SS.15/24.SR	Motorised ball valve, stainless steel, 2 port, DN15, 24Vac, spring return	524.91
V2SS.20/24.SR	Motorised ball valve, stainless steel, 2 port, DN20, 24Vac, spring return	594.00
V2SS.25/24.SR	Motorised ball valve, stainless steel, 2 port, DN25, 24Vac, spring return	594.00
V2SS.32/24.SR	Motorised ball valve, stainless steel, 2 port, DN32, 24Vac, spring return	776.00
V2SS.40/24.SR	Motorised ball valve, stainless steel, 2 port, DN40, 24Vac, spring return	891.50
V2SS.50/24.SR	Motorised ball valve, stainless steel, 2 port, DN50, 24Vac, spring return	909.13
V2SS.65/24.SR	Motorised ball valve, stainless steel, 2 port, DN65, 24Vac, spring return	3,697.69
V2SS.80/24.SR	Motorised ball valve, stainless steel, 2 port, DN80, 24Vac, spring return	4,044.92
V2SS.100/24.SR	Motorised ball valve, stainless steel, 2 port, DN100, 24Vac, spring return	

Valves - on/off

3-port ball valves - full stainless steel body

SIEMENS

For use in 3 way full port mixing or diverting applications. Possible medium applications include: potable water, waste water, medium temperature hot water, oil, air and some corrosive liquid.



Actuator technical specifications:

- Siemens 90° rotary actuator
- power supply: 24Vac (230Vac available on request)
- protection level: IP54
- positioning time: 90sec open, 15sec close (spring return only)
- 2 position spring return actuator for DN15 to DN40 ball valves
- 3 position actuator for DN50 to DN100 ball valves. An interposing relay is required for 2 position use (not included)
- optional position switch available

Ball valve technical specifications:

- 2 piece, 304 stainless steel construction
- 3 way L or T port (please specify on ordering)
- DN15 to DN100 (internal thread)
- operating temperature: -20..121°C
- max operating pressure: PN40

NB. ball valve, rotary actuator, actuator mounting kit, position indicator and manual crank included

Product Code	Description	List Price
V3SS.15/24.3P	Motorised ball valve, stainless steel, 3 port, DN15, 24Vac, 3-position	569.26
V3SS.20/24.3P	Motorised ball valve, stainless steel, 3 port, DN20, 24Vac, 3-position	715.29
V3SS.25/24.3P	Motorised ball valve, stainless steel, 3 port, DN25, 24Vac, 3-position	735.31
V3SS.32/24.3P	Motorised ball valve, stainless steel, 3 port, DN32, 24Vac, 3-position	985.59
V3SS.40/24.3P	Motorised ball valve, stainless steel, 3 port, DN40, 24Vac, 3-position	1,205.18
V3SS.50/24.3P	Motorised ball valve, stainless steel, 3 port, DN50, 24Vac, 3-position	1,449.35
V3SS.65/24.3P	Motorised ball valve, stainless steel, 3 port, DN65, 24Vac, 3-position	4,412.00

Product Code	Description	List Price
V3SS.15/24.SR	Motorised ball valve, stainless steel, 3 port, DN15, 24Vac, spring return	667.50
V3SS.20/24.SR	Motorised ball valve, stainless steel, 3 port, DN20, 24Vac, spring return	806.89
V3SS.25/24.SR	Motorised ball valve, stainless steel, 3 port, DN25, 24Vac, spring return	826.00
V3SS.32/24.SR	Motorised ball valve, stainless steel, 3 port, DN32, 24Vac, spring return	1,036.85
V3SS.40/24.SR	Motorised ball valve, stainless steel, 3 port, DN40, 24Vac, spring return	1,246.45
V3SS.50/24.SR	Motorised ball valve, stainless steel, 3 port, DN50, 24Vac, spring return	1,449.35

Valves - on/off

2- and 3-port zone valves

SIEMENS



2-port VVI46 and 3-port VXI46 valves with internally threaded connections DN 15 to DN 25; medium temperature: 1..110°C.

VVI46 valves are most suited to under floor heating applications. VXI46 valves are specifically for diverting applications only.

Product Code	Description	List Price
VVI46.15/2	Zone valve, 15mm, 2 port, female thread, k_{vs} 2m ³ /h, PN16, Δp_{max} 300	58.00
VVI46.20/2	Zone valve, 20mm, 2 port, female thread, k_{vs} 3.5m ³ /h, PN16, Δp_{max} 300	63.00
VVI46.25/2	Zone valve, 25mm, 2 port, female thread, k_{vs} 5.0m ³ /h, PN16, Δp_{max} 300	81.00
VXI46.15/2	Zone valve, 15mm, 3 port, female thread, k_{vs} 2m ³ /h, PN16, Δp_{max} 300	64.00
VXI46.20/2	Zone valve, 20mm, 3 port, female thread, k_{vs} 3.5m ³ /h, PN16, Δp_{max} 300	90.00
VXI46.25/2	Zone valve, 25mm, 3 port, female thread, k_{vs} 5.0m ³ /h, PN16, Δp_{max} 300	138.00
SFA21/18	Actuator, on/off, 1.8m cable, 230Vac	166.00
SFA71/18	Actuator, on/off, 1.8m cable, 24Vac	166.00
STA23	Radiator valve actuator, thermic, 2 position, 230Vac, for normally closed valves	87.00
STA73	Radiator valve actuator, thermic, 2 position, 24Vac, for normally closed valves	87.00
ASC2.1/18	Auxiliary switch accessory for SFA..	53.00

Modulating Control Valves

radiator valve heads

SIEMENS

Self acting, without auxiliary power. High quality fluid-filled sensor with fast acquisition of room temperature changes.

Mode of operation: The fluid-filled sensor responds to deviations from the room temperature setpoint. When the room temperature rises, the fluid inside the metal capsule expands, exerting pressure on the bellows and the stem which causes the valve to close so that the radiator's heat output will be reduced. When the room temperature falls, the bellows expand, thereby opening the valve so that the radiator's output will be increased again.



Technical Specifications:

- setpoint setting range: 8..28°C
- permissible sensor temperature: 40°C
- hysteresis: 1K, proportional band: 2K
- conformity: CEN standard EN215-1
- adaptors available for almost all radiator valves

Product Code	Description	List Price
RTN51	Thermostatic radiator valve head	37.00
RTN71	Thermostatic radiator valve head with remote sensor	140.00
RTN81	Thermostatic radiator valve head with remote adjuster	151.00
STA23	Radiator valve actuator, thermic, 2 position, 230Vac, for normally closed valves	87.00
STA63	Radiator valve actuator, thermic, 0..10Vdc, 24Vac, for normally closed valves	204.00
STA73	Radiator valve actuator, thermic, 2 position, 24Vac, for normally closed valves	87.00
ATN2	Accessory for radiator valve, tamper proof fitting	12.00
ATN3	Accessory for radiator valve, manual knob, white	15.00

Modulating Control Valves

radiator valves

SIEMENS



Radiator valves for 2 pipe heating systems for room temperature control with adjustable flow.

Lockshield valves with throttling function for hydraulic balancing and shut-off function when removing/replacing radiator.

Technical Specifications:

- internally and externally threaded
- permissible media: water, water with anti-freeze
- medium temperature: 1..120°C
- PN class: PN10
- permissible operating pressure: 1000kPa
- max differential pressure: 60kPa
- material valve body: Brass Ms58, matt nickel plated
- approved to European standard: EN 215
- manual knob/protective cover included
- can be combined with RTN.. thermostatic actuators, SSA.. motoric actuators or STA.. and STS61.. thermal actuators

Product Code	Description	List Price
VDN110	Straight radiator valve, DN10, k_{vs} 0.09..0.63m ³ /h, DIN	34.00
VDN115	Straight radiator valve, DN15, k_{vs} 0.10..0.89m ³ /h, DIN	38.00
VDN120	Straight radiator valve, DN20, k_{vs} 0.31..1.41m ³ /h, DIN	56.00
VEN110	Angle radiator valve, DN10, k_{vs} 0.09..0.63m ³ /h, DIN	34.00
VEN115	Angle radiator valve, DN15, k_{vs} 0.10..0.89m ³ /h, DIN	38.00
VEN120	Angle radiator valve, DN20, k_{vs} 0.31..1.41m ³ /h, DIN	56.00
VUN215	Reverse angle radiator valve, DN15, k_{vs} 0.13..0.77m ³ /h, DIN	42.00
NB. larger k_{vs} rated valves are also available		
ADN10	Lockshield valve, straight, DN10, k_{vs} 0..1.8m ³ /h	28.00
ADN15	Lockshield valve, straight, DN15, k_{vs} 0..2.5m ³ /h	30.00
ADN20	Lockshield valve, straight, DN20, k_{vs} 0..3.0m ³ /h	42.00
AEN10	Lockshield valve, angle, DN10, k_{vs} 0..1.8m ³ /h	29.00
AEN15	Lockshield valve, angle, DN15, k_{vs} 0..2.5m ³ /h	30.00
AEN20	Lockshield valve, angle, DN20, k_{vs} 0..3.0m ³ /h	42.00

Modulating Control Valves

combi valves

SIEMENS



Pre-adjustable 2-port combi valves, internally threaded connections to ISO7/1, for rooms, zones, AHUs and small to medium HVAC systems. For cold/warm water in closed circuits. Volumetric flow 90..8500/h. Suitable media: water (to VDI 2035), water with anti-freeze.

Technical specifications:

- stroke: to DN32: 5mm, from DN40: 6.5mm
- medium temperature: 1..120°C
- valve characteristic: linear
- permissible operating pressure: 2500kPa
- material, valve body: dezincification resistant brass, DR, CW602N
- material, inside: dezincification resistant brass, DR, CW602N, CrNi steel

Product Code	Description	List Price
VPI45.25F1.5	Combi valve, 25mm, 2 port, pressure compensated, 280..1720/h, PN25	330.00
VPI45.25F1.5Q	Combi valve, 25mm, 2 port, pressure compensated, 280..1720/h, PN25, with pressure test points	345.00
VPI45.25F2	Combi valve, 25mm, 2 port, pressure compensated, 350..2040/h, PN25	335.00
VPI45.25F2Q	Combi valve, 25mm, 2 port, pressure compensated, 350..2040/h, PN25, with pressure test points	352.00
VPI45.32F3	Combi valve, 32mm, 2 port, pressure compensated, 560..3050/h, PN25	386.00
VPI45.32F3Q	Combi valve, 32mm, 2 port, pressure compensated, 560..3050/h, PN25, with pressure test points	401.00
VPI45.40F7	Combi valve, 40mm, 2 port, pressure compensated, 2355..7105/h, PN25	1,131.00
VPI45.40F7Q	Combi valve, 40mm, 2 port, pressure compensated, 2355..7105/h, PN25, with pressure test points	1,148.00
VPI45.50F8.5	Combi valve, 50mm, 2 port, pressure compensated, 2664..8586/h, PN25	1,287.00
VPI45.50F8.5Q	Combi valve, 50mm, 2 port, pressure compensated, 2664..8586/h, PN25, with pressure test points	1,311.00
SSD31	Electromotoric actuator, 230Vac, 3 position, 250N, 5.5mm stroke, 1.5m cable	216.00
SSD81	Electromotoric actuator, 24Vac/dc, 3 position 250N, 5.5mm stroke, 1.5m cable	189.00
SSD61	Electromotoric actuator, 24Vac/dc, 0..10Vdc, 250N, 5.5mm stroke, 1.5m cable	279.00

small valves - 2.5mm stroke

SIEMENS



2- and 3-port valves with bypass and threaded connections for the control of fan coil units, chilled ceilings or heating zones. Suitable media: water (to VDI 2035), water with anti-freeze

Technical specifications:

- leakage rate: 0..0.05% of k_{vs} , leakage rate bypass: 0..0.05% of k_{vs}
- medium temperature: 1..110°C
- valve characteristic: throughport - linear, bypass - linear
- material, body: red brass CC491K (Rg5), inside: CrNi steel, brass
- permissible operating pressure: 1600kPa

Product Code	Description	List Price
VVP47.10-0.25	Zone valve, 10mm, 2 port, k_{vs} 0.25m ³ /h, PN16, G½"B, use with ALG132	85.00
VVP47.10-0.4	Zone valve, 10mm, 2 port, k_{vs} 0.4m ³ /h, PN16, G½"B, use with ALG132	85.00
VVP47.10-0.63	Zone valve, 10mm, 2 port, k_{vs} 0.63m ³ /h, PN16, G½"B, use with ALG132	85.00
VVP47.10-1	Zone valve, 10mm, 2 port, k_{vs} 1.0m ³ /h, PN16, G½"B, use with ALG132	85.00
VVP47.10-1.6	Zone valve, 10mm, 2 port, k_{vs} 1.6m ³ /h, PN16, G½"B, use with ALG132	85.00
VVP47.15-2.5	Zone valve, 15mm, 2 port, k_{vs} 2.5m ³ /h, PN16, G¾"B, use with ALG142	100.00
VVP47.20-4	Zone valve, 20mm, 2 port, k_{vs} 4.0m ³ /h, PN16, G1"B, use with ALG152	124.00
3-port valves (VXP47..) and 4-port valves (VMP47..) are also available for mixing applications only.		
STP23	Thermic actuator, 2 position, 230Vac, for normally open valves	98.00
STP63	Thermic actuator, 0..10Vdc, 24Vac, for normally open valves	204.00
STP73	Thermic actuator, 2 position, 24Vac/dc, for normally open valves	98.00
SSP61	Actuator, motoric, 0..10Vdc position, 24Vacdc, includes cable	303.00

Modulating Control Valves

small valves - 5.5mm stroke

SIEMENS



2-port and 3-port seat valves with bypass, with threaded connections for the control of fan coil units, chilled ceilings or heating zones. Suitable media: water (to VDI 2035), water with anti-freeze.

Technical specifications:

- stroke: 5.5mm
- leakage rate: 0..0.02% of k_{vs} value
- leakage rate bypass: 0..0.02% of k_{vs} value
- medium temperature: 1..110°C
- valve characteristic: throughport up to $k_{vs}6.3$ - equal percentage, throughport from $k_{vs}10$ - linear, bypass - linear
- material, valve body: red brass CC491K (Rg5)
- material, inside set: CrNi steel, brass
- PN class: PN16
- permissible operating pressure: 1600kPa

V..P45..valves are only used as mixing or 2-port valves, not as diverting valves.

Product Code	Description	List Price
VVP45.10-0.25	Zone valve, 10mm, 2 port, k_{vs} 0.25m ³ /h, PN16, Δp_{max} 400, use with ALG132	100.00
VVP45.10-0.4	Zone valve, 10mm, 2 port, k_{vs} 0.4m ³ /h, PN16, Δp_{max} 400, use with ALG132	100.00
VVP45.10-0.63	Zone valve, 10mm, 2 port, k_{vs} 0.63m ³ /h, PN16, Δp_{max} 400, use with ALG132	100.00
VVP45.10-1	Zone valve, 10mm, 2 port, k_{vs} 1.0m ³ /h, PN16, Δp_{max} 400, use with ALG132	100.00
VVP45.10-1.6	Zone valve, 10mm, 2 port, k_{vs} 1.6m ³ /h, PN16, Δp_{max} 400, use with ALG132	100.00
VVP45.15-2.5	Zone valve, 15mm, 2 port, k_{vs} 2.5m ³ /h, PN16, Δp_{max} 350, use with ALG142	125.00
VVP45.20-4	Zone valve, 20mm, 2 port, k_{vs} 4.0m ³ /h, PN16, Δp_{max} 350, use with ALG152	152.00
VVP45.25-6.3	Zone valve, 25mm, 2 port, k_{vs} 6.3m ³ /h, PN16, Δp_{max} 300, use with ALG202	257.00
VVP45.25-10	Zone valve, 25mm, 2 port, k_{vs} 10.0m ³ /h, PN16, Δp_{max} 300, use with ALG252	337.00
VVP45.32-16	Zone valve, 32mm, 2 port, k_{vs} 16.0m ³ /h, PN16, Δp_{max} 350, use with ALG322	444.00
VVP45.40-25	Zone valve, 40mm, 2 port, k_{vs} 25.0m ³ /h, PN16, Δp_{max} 350, use with ALG402	579.00
3-port (VXP45..) and 4-port (VMP45..) valves are also available; these are used for mixing arrangements only.		
SSB31	Valve actuator, 3 position, 200N, 230Vac, for valves up to 20mm	238.00
SSB81	Valve actuator, 3 position, 200N, 24Vac, for valves up to 20mm	207.00
SSB61	Valve actuator, 0..10Vdc, 200N, 24Vac/dc, for valves up to 20mm	303.00
SSC31	Valve actuator, 3 position, 300N, 230Vac, for valves 25mm and above	324.00
SSC81	Valve actuator, 3 position, 300N, 24Vac, for valves 25mm and above	301.00
SSC61	Valve actuator, 0..10Vdc positioning signal, 300N, 24Vac/dc, for valves 25mm and above	456.00

Modulating Control Valves

threaded valves - 5.5mm stroke

SIEMENS



2-port and 3-port seat valves PN16 with externally threaded connections to ISO 228/1 for chilled water or low temperature hot water in closed circuits.

Technical specifications:

- leakage rate: 0..0.02% of k_{vs} , leakage rate bypass: 0..0.02% of k_{vs}
- medium temperature: 1..120°C
- valve characteristic: throughport - linear, bypass - linear
- rangeability: DN15: >50, DN20..40: >100
- permissible operating pressure: 1600kPa
- material, valve body: red brass CC491K (Rg5)
- material, inside set: CrNi steel, Rg5, brass

Product Code	Description	List Price
VVG44.15-0.25	Threaded seat valve, 15mm, 2 port, k_{vs} 0.25m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-0.4	Threaded seat valve, 15mm, 2 port, k_{vs} 0.4m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-0.63	Threaded seat valve, 15mm, 2 port, k_{vs} 0.63m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-1	Threaded seat valve, 15mm, 2 port, k_{vs} 1.0m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-1.6	Threaded seat valve, 15mm, 2 port, k_{vs} 1.6m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-2.5	Threaded seat valve, 15mm, 2 port, k_{vs} 2.5m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.15-4	Threaded seat valve, 15mm, 2 port, k_{vs} 4.0m³/h, PN16, Δp_{max} 400, use with ALG152	279.00
VVG44.20-6.3	Threaded seat valve, 20mm, 2 port, k_{vs} 6.3m³/h, PN16, Δp_{max} 400, use with ALG202	293.00
VVG44.25-10	Threaded seat valve, 25mm, 2 port, k_{vs} 10.0m³/h, PN16, Δp_{max} 400, use with ALG252	339.00
VVG44.32-16	Threaded seat valve, 32mm, 2 port, k_{vs} 16.0m³/h, PN16, Δp_{max} 250, use with ALG322	464.00
VVG44.40-25	Threaded seat valve, 40mm, 2 port, k_{vs} 25.0m³/h, PN16, Δp_{max} 125, use with ALG402	601.00
3-port valves (VVG44..) are also available for the same price as above; these are used for throttling/mixing or diverting applications.		
SAS31.00	Valve actuator, 5.5mm, 400Nm, 230Vac, 3 position, 120sec run time	453.00
SAS81.00	Valve actuator, 5.5mm, 400Nm, 24Vacdc, 3 position, 120sec run time	453.00
SAS61.03	Valve actuator, 5.5mm, 400Nm, 24Vacdc, 0..10Vdc or 4..20mA, 30sec run time	537.00

screwed valves - 20mm stroke

SIEMENS



3-port seat valves PN16 with externally threaded connections to ISO 228/1 for drinking, cooling and chilled water, low and high temperature hot water and brine in open and closed circuits. For mixing or diverting applications.

Technical specifications:

- medium temperature: -25..150°C
- rangeability: DN15: >50, DN20..50: >100
- permissible operating pressure: 1600kPa
- material, valve body: bronze CuSn5Zn5Pb2, inside set: CrNi steel

Product Code	Description	List Price
VVG41.15	Threaded valve, 15mm, 3 port, k_{vs} 4.0m³/h, PN16, use with ALG152	614.00
VVG41.20	Threaded valve, 20mm, 3 port, k_{vs} 6.3 m³/h, PN16, use with ALG202	710.00
VVG41.25	Threaded valve, 25mm, 3 port, k_{vs} 10.0m³/h, PN16, use with ALG252	806.00
VVG41.32	Threaded valve, 32mm, 3 port, k_{vs} 16.0m³/h, PN16, use with ALG322	898.00
VVG41.40	Threaded valve, 40mm, 3 port, k_{vs} 25.0m³/h, PN16, use with ALG402	1,006.00
VVG41.50	Threaded valve, 50mm, 3 port, k_{vs} 40.0m³/h, PN16, use with ALG502	1,122.00
SAX31.00	Valve actuator, 240Vac, 3 position	789.00
SAX81.00	Valve actuator, 24Vac, 3 position	789.00
SAX61.03	Valve actuator, 24Vac, positioning signal 0..10Vdc, 4..20mA	1,015.00
ASZ6.6	Stem heater element, for SAX actuator	508.00
428488740	Replacement sealing gland, for VVG41	59.00

Modulating Control Valves

screwed valves - electromagnetic

SIEMENS



Modulating control valves with magnetic actuators for use in chilled and low temperature hot water systems.

Features:

- fast positioning time (less than 2 seconds), high-resolution (1000:1) stroke, high rangeability
- equal-percentage or linear valve characteristic (user-selected)
- operating voltage 24Vac
- switch-selected control signal: 0/2...10Vdc or 4...20mA
- 0...20Vdc phase cut control signal with SEZ91.6 external interface
- indication of operating state, position feedback and manual control

Product Code	Description	Fits union	List Price
MXG461.15-0.6	Control valve, 15mm, k_{vs} 0.6, 2 or 3 port, threaded	ALG153	1,840.00
MXG461.15-1.5	Control valve, 15mm, k_{vs} 1.5, 2 or 3 port, threaded	ALG153	1,840.00
MXG461.15-3.0	Control valve, 15mm, k_{vs} 3.0, 2 or 3 port, threaded	ALG153	1,837.00
MXG461.20-5.0	Control valve, 20mm, k_{vs} 5.0, 2 or 3 port, threaded	ALG203	1,977.00
MXG461.25-8.0	Control valve, 25mm, k_{vs} 8.0, 2 or 3 port, threaded	ALG253	2,208.00
MXG461.32-12	Control valve, 32mm, k_{vs} 12.0, 2 or 3 port, threaded	ALG323	2,383.00
MXG461.40-20	Control valve, 40mm, k_{vs} 20.0, 2 or 3 port, threaded	ALG403	2,559.00
MXG461.50-30	Control valve, 50mm, k_{vs} 30.0, 2 or 3 port, threaded	ALG503	2,685.00

Please note this is just a small part of our control valve range. If you have a high temperature/pressure or special application, please contact your local office.

valve unions

SIEMENS

Product Code	Description	Material	Valve Connection	Pipe Connection	List Price
ALG132	Valve fitting, 2 couplings	Brass	G $\frac{1}{2}$ "	R $\frac{3}{8}$ "	28.00
ALG133	Valve fitting, 3 couplings	Brass	G $\frac{1}{2}$ "	R $\frac{3}{8}$ "	43.00
ALG142	Valve fitting, 2 couplings	Brass	G $\frac{3}{4}$ "	R $\frac{1}{2}$ "	47.00
ALG143	Valve fitting, 3 couplings	Brass	G $\frac{3}{4}$ "	R $\frac{1}{2}$ "	69.00
ALG152	Valve fitting, 15mm screw unions, 2 couplings	Iron	G1"	Rp $\frac{1}{2}$ "	20.00
ALG152B	Valve fitting, 15mm screw unions, 2 couplings	Brass	G1"	Rp $\frac{1}{2}$ "	34.00
ALG153	Valve fitting, 15mm screw unions, 3 couplings	Iron	G1"	Rp $\frac{1}{2}$ "	29.00
ALG153B	Valve fitting, 15mm screw unions, 3 couplings	Brass	G1"	Rp $\frac{1}{2}$ "	51.00
ALG202	Valve fitting, 20mm screw unions, 2 couplings	Iron	G1 $\frac{1}{4}$ "	Rp $\frac{3}{4}$ "	25.00
ALG202B	Valve fitting, 20mm screw unions, 2 couplings	Brass	G1 $\frac{1}{4}$ "	Rp $\frac{3}{4}$ "	50.00
ALG203	Valve fitting, 20mm screw unions, 3 couplings	Iron	G1 $\frac{1}{4}$ "	Rp $\frac{3}{4}$ "	39.00
ALG203B	Valve fitting, 20mm screw unions, 3 couplings	Brass	G1 $\frac{1}{4}$ "	Rp $\frac{3}{4}$ "	75.00
ALG252	Valve fitting, 25mm screw unions, 2 couplings	Iron	G1 $\frac{1}{2}$ "	Rp1"	29.00
ALG252B	Valve fitting, 25mm screw unions, 2 couplings	Brass	G1 $\frac{1}{2}$ "	Rp1"	62.00
ALG253	Valve fitting, 25mm screw unions, 3 couplings	Iron	G1 $\frac{1}{2}$ "	Rp1"	47.00
ALG253B	Valve fitting, 25mm screw unions, 3 couplings	Brass	G1 $\frac{1}{2}$ "	Rp1"	95.00
ALG322	Valve fitting, 32mm screw unions, 2 couplings	Iron	G2"	Rp1 $\frac{1}{4}$ "	41.00
ALG322B	Valve fitting, 32mm screw unions, 2 couplings	Brass	G2"	Rp1 $\frac{1}{4}$ "	85.00
ALG323	Valve fitting, 32mm screw unions, 3 couplings	Iron	G2"	Rp1 $\frac{1}{4}$ "	61.00

Modulating Control Valves

valve unions

SIEMENS

Product Code	Description	Material	Valve Connection	Pipe Connection	List Price
ALG323B	Valve fitting, 32mm screw unions, 3 couplings	Brass	G2"	Rp1¼"	124.00
ALG402	Valve fitting, 40mm screw unions, 2 couplings	Iron	G2¼"	Rp1½"	49.00
ALG402B	Valve fitting, 40mm screw unions, 2 couplings	Brass	G2¼"	Rp1½"	128.00
ALG403	Valve fitting, 40mm screw unions, 3 couplings	Iron	G2¼"	Rp1½"	72.00
ALG403B	Valve fitting, 40mm screw unions, 3 couplings	Brass	G2¼"	Rp1½"	194.00
ALG502	Valve fitting, 50mm screw unions, 2 couplings	Iron	G2¾"	Rp2"	81.00
ALG502B	Valve fitting, 50mm screw unions, 2 couplings	Brass	G2¾"	Rp2"	210.00
ALG503	Valve fitting, 50mm screw unions, 3 couplings	Iron	G2¾"	Rp2"	122.00
ALG503B	Valve fitting, 50mm screw unions, 3 couplings	Brass	G2¾"	Rp2"	317.00

valve washers

SIEMENS

Product Code	Description	List Price
15mm washers	15mm fibre washers	1.20
20mm washers	20mm fibre washers	1.44
41506	Fibre washer for ALG15	1.82
41507	Fibre washer for ALG20	2.84
41508	Fibre washer for ALG25	3.52
41509	Fibre washer for ALG32	4.38
41510	Fibre washer for ALG40	5.15
41511	Fibre washer for ALG50	7.77

flanged valves

SIEMENS



3-port seat valves PN10 with flanged connections to ISO 228/1 for chilled low and high temperature water and brine in closed circuits. For mixing or diverting applications.

Technical specifications:

- medium temperature: -10..150°C
- rangeability: DN50..150: >100
- permissible operating pressure: 1000kPa
- material, valve body: cast iron
- material, inside set: CrNi steel/Rg5

Product Code	Description	List Price
VXF42.50-40C	Flanged valve, 50mm, 3 port, k_{vs} 40.0m³/h, PN16	834.00
VXF42.65-63C	Flanged valve, 65mm, 3 port, k_{vs} 63.0m³/h, PN16	1,123.00
VXF42.80-80C	Flanged valve, 80mm, 3 port, k_{vs} 80.0m³/h, PN16	1,516.00
VXF42.100-125C	Flanged valve, 100mm, 3 port, k_{vs} 125.0m³/h, PN16	2,292.00
VXF42.125-200C	Flanged valve, 125mm, 3 port, k_{vs} 200.0m³/h, PN16	2,845.00
VXF42.150-315C	Flanged valve, 150mm, 3 port, k_{vs} 315.0m³/h, PN16	3,567.00

2-port valves (VVF..) are also available for the same price.

SAX61.03	Valve actuator, 24Vac, positioning signal 0..10Vdc, 4..20mA	1,015.00
SKD62	Valve actuator, 24Vac, pos. signal 0..10Vdc or 4..20mA, 1000N, spring return	1,623.00
SKC62	Valve actuator, 24Vac, pos. signal 0..10Vdc or 4..20mA, 2800N, spring return	2,956.00
ASZ6.6	Accessory for SAX.. stem heating element for media <0°C, 24Vac	598.00



Meters

electricity meters



Single Phase Electricity Meters

- two wire
- direct connection

Three Phase Electricity Meters

- four wire
- direct connected or transformer connected
- complete with switch selectable transformer ratio up to 2500A
- open collector impulse output relays for remote consumption logging

Product Code	Description	List Price
DEM011	kWh, compact DIN 1-ph, 230V, 1600imp/kWh	73.69
DEM021	kWh, compact DIN 3-ph, 3 x 230/400V, 3200 imp/kWh	303.42

mechanical water meters



Zenner multi-jet vane wheel dry type water meter. These meters provide volume measurement for cold or hot potable water applications.

Technical Specifications:

- Temperature: $\leq 30^{\circ}\text{C}$ for cold potable water meter, $\pm 2\%$
 $\leq 90^{\circ}\text{C}$ for hot water meter, $\pm 3\%$
- Max operating pressure: PN10 for apartment meters
- Min reading: 0.0001m^3 ; Max reading: $99,999\text{m}^3$
- Pulse output (requires separate pulse kit)
- Measurement accuracy class: B (horizontal)

Product Code	Description	List Price
WMZ15	Water meter, class B, cold , DN15, pulse capable (requires WMZMTK-N)	214.99
WMZ20	Water meter, class B, cold , DN20, pulse capable (requires WMZMTK-N)	228.59
WMZ25	Water meter, class B, cold , DN25, pulse capable (requires WMZMTK-N)	345.13
WMZ32	Water meter, class B, cold , DN32, pulse capable (requires WMZMTK-N)	369.98
WMZ40	Water meter, class B, cold , DN40, pulse capable (requires WMZMTK-N)	697.07
WMZ50	Water meter, class B, cold , DN50, pulse capable (requires WMZMTK-N)	827.51
WMZ15HP	Water meter, class B, hot , DN15, pulse capable (requires WMZMTK-N)	258.78
WMZ20HP	Water meter, class B, hot , DN20, pulse capable (requires WMZMTK-N)	285.55
WMZ25HP	Water meter, class B, hot , DN25, pulse capable (requires WMZMTK-N)	403.27
WMZ32HP	Water meter, class B, hot , DN32, pulse capable (requires WMZMTK-N)	468.41
WMZ40HP	Water meter, class B, hot , DN40, pulse capable (requires WMZMTK-N)	800.57
WMZ50HP	Water meter, class B, hot , DN50, pulse capable (requires WMZMTK-N)	977.96
WMZMTK-N	Reed switch/pulse for WMZ.. and WMZ..HP water meters, class B	35.54
WMZAMK15	Apartment water meter, class B, cold , DN15, pulse capable (requires WMZAM-N)	100.42
WMZAMK20	Apartment water meter, class B, cold , DN20, pulse capable (requires WMZAM-N)	120.81
WMZAMW 15	Apartment water meter, class B, hot , DN15, pulse capable (requires WMZAM-N)	105.20
WMZAMW 20	Apartment water meter, class B, hot , DN20, pulse capable (requires WMZAM-N)	120.81
WMZAM-N	Reed switch/pulse for WMZAM.. apartment water meters, class B	35.10
WMZWPH65	Water meter, Woltman, class B, cold , DN65, pulse capable (requires WMZWPH-N)	1,207.15
WMZWPH80	Water meter, Woltman, class B, cold , DN80, pulse capable (requires WMZWPH-N)	1,241.61
WMZWPH100	Water meter, Woltman, class B, cold , DN100, pulse capable (requires WMZWPH-N)	1,348.25
WMZWPH150	Water meter, Woltman, class B, cold , DN150, pulse capable (requires WMZWPH-N)	1,818.55
WMZWPH200	Water meter, Woltman, class B, cold , DN200, pulse capable (requires WMZWPH-N)	2,429.98
WMZWPH-N	Reed switch/pulse for WMZWPH.. Woltman water meters	102.80



Meters

vortex water meters

SIEMENS



Flow sensors for flow measurement and monitoring of liquids such as hot water, heating water or stand- and water-glycol mixes in HVAC plants.

- Analog outputs: 0..10Vdc or 4..20mA (QVE2100...)
- Medium temperature: -15..125°C
- Housing: fibreglass-reinforced plastic (also available in Brass)

Product Code	Description	List Price
QVE2000.010	Inline vortex flow sensor, plastic, DN10, 0.1..1.92m ³ per hr, 0..10Vdc, male screwed	403.00
QVE2000.015	Inline vortex flow sensor, plastic, DN15, 0.2..3.0m ³ per hr, 0..10Vdc, male screwed	403.00
QVE2000.020	Inline vortex flow sensor, plastic, DN20, 0.3..5.1m ³ per hr, 0..10Vdc, male screwed	420.00
QVE2000.025	Inline vortex flow sensor, plastic, DN25, 0.5..9.0m ³ per hr, 0..10Vdc, male screwed	442.00

electromagnetic water & energy meters

SIEMENS



SITRANS electromagnetic water meters are designed to fulfil special customer demands such as:

- precision - accurate and reliable measurement for long term performance
- information - prepared directly from meter site to minimise the need for additional systems
- communication - open "add-on" communication platform for connection to existing systems
- ownership - low installation, maintenance and operation costs

Please note other sizes are available on request.

Product Code	Description	List Price
SBT7ME6580-2YN14-2AA1	SITRANS mag5100W flow meter, DN50, PN16	1,843.00
SBT7ME6580-3FN14-2AA1	SITRANS mag5100W flow meter, DN65, PN16	1,865.00
SBT7ME6580-3MN14-2AA1	SITRANS mag5100W flow meter, DN80, PN16	1,885.00
SBT7ME6580-3TN14-2AA1	SITRANS mag5100W flow meter, DN100, PN16	1,968.00
SBT7ME6580-4BC14-2AA1	SITRANS mag5100W flow meter, DN125, PN16	2,312.00
SBT7ME6580-4HN14-2AA1	SITRANS mag5100W flow meter, DN150, PN16	2,626.00
SBT7ME6580-4PN14-2AA1	SITRANS mag5100W flow meter, DN200, PN16	3,157.00
SBT7ME6580-4VN14-2AA1	SITRANS mag5100W flow meter, DN250, PN16	3,956.00
SBT7ME6910-1AA10-1AA0	Mag5000, 230Vac transmitter, 4..20mA, pulse output	2,404.00
SBT7ME6910-1AA30-1AA0	Mag5000, 12/24Vac transmitter, 4..20mA, pulse output	2,404.00
SITRANS FUE950	Universal thermal energy calculator, battery or mains powered	

Meters

energy meters

SIEMENS



Sonoheat UH50 energy meters acquire the volumetric flow statically using the ultrasonic measuring principle and use the measure temperature differential to calculate energy consumed.

Pricing is dependent on output options, flow rate and mounting position, please contact Setpoint for details. Larger sizes are also available.

Product Code	Description
UH50-A05C-EN06-F 0B-B000-M3A	Heat meter, standard type, 0.6m ³ /h, G ³ / ₄ ", threaded connection
UH50-A23C-EN06-F 0B-B000-M3A	Heat meter, standard type, 1.5m ³ /h, G1", threaded connection
UH50-A36C-EN06-F 0B-B000-M3A	Heat meter, standard type, 2.5m ³ /h, G1", threaded connection
UH50-A45C-EN06-F 0B-B000-M3A	Heat meter, standard type, 3.5m ³ /h, G1 ¹ / ₄ ", threaded connection
UH50-A50C-EN06-F 0B-B000-M3A	Heat meter, standard type, 6.0m ³ /h, G1 ¹ / ₄ ", threaded connection
UH50-A60C-EN06-F 0B-B000-M3A	Heat meter, standard type, 10.0m ³ /h, G2", threaded connection
UH50-A65C-EN06-E 0M-B000-M2B	Heat meter, standard type, 15.0m ³ /h, DN50, flanged connection
UH50-A70C-EN06-E 0M-B000-M2B	Heat meter, standard type, 25.0m ³ /h, DN65, flanged connection
UH50-A82C-EN06-E 0P-B000-M2B	Heat meter, standard type, 60.0m ³ /h, DN100, flanged connection

Pressure Vessels

pressure vessels (max temp 90°C)



Small pressure vessels ideally suited for a wide range of applications, including booster systems, thermal expansion, irrigation systems, and hydraulic hammer arresting.

Features:

- single diaphragm design
- patented stainless steel water connection
- virgin polypropylene liner
- available in 10 bar and 16 bar pressure ratings
- sizes from 2 litres to 450 litres
- leak free, o-ring sealed air valve cap

Product Code	Description	List Price
FLE-PWB2V	Pressure vessel, 2 litre, vertical, 10bar, 1" connection	79.38
FLE-PWB8V	Pressure vessel, 8 litre, vertical, 10bar, 1" connection	137.50
FLE-PWB35V	Pressure vessel, 35 litre, vertical, 10bar, 1" connection	378.47
FLE-PWB60V	Pressure vessel, 60 litre, vertical, 10bar, 1" connection	608.11
FLE-PWB80V	Pressure vessel, 80 litre, vertical, 10bar, 1" connection	687.49
FLE-PWB100V	Pressure vessel, 100 litre, vertical, 10bar, 1" connection	834.91
FLE-PWB150V	Pressure vessel, 150 litre, vertical, 10bar, 1" connection	1,047.53
FLE-C200V	Pressure vessel, 200 litre, vertical, 10bar, 1" connection	1,431.68
FLE-C240V	Pressure vessel, 240 litre, vertical, 10bar, 1" connection	1,552.16
FLE-C310V	Pressure vessel, 310 litre, vertical, 10bar, 1" connection	1,715.18
FLE-C450V	Pressure vessel, 450 litre, vertical, 10bar, 1" connection	2,494.80
FLE-PWB8V-16	Pressure vessel, 8 litre, vertical, 16bar, 1" connection	374.06
FLE-PWB18V-16	Pressure vessel, 18 litre, vertical, 16bar, 1" connection	561.09
FLE-PWB80V-16	Pressure vessel, 80 litre, vertical, 16bar, 1" connection	2,086.88

Pressure Vessels

pressure vessels – solar applications (max temp 130°C)



Solar Wave™ tanks meet the demands of solar collector systems for both thermal expansion and contraction in order to maintain safe and efficient operating pressures within the solar liquid system.

Features:

- high temperature butyl diaphragm
- patented stainless steel water connection
- rated for high temperatures
- leak free, o-ring sealed air valve cap

Product Code	Description	List Price
FLE-SWB8V	Pressure vessel, for solar use, 8 litre, vertical, 10bar, 1" connection	212.63
FLE-SWB12V	Pressure vessel, for solar use, 12 litre, vertical, 10bar, 1" connection	246.09
FLE-SWB18V	Pressure vessel, for solar use, 18 litre, vertical, 10bar, 1" connection	POA
FLE-SWB24V	Pressure vessel, for solar use, 24 litre, vertical, 10bar, 1" connection	POA
FLE-SWB35V	Pressure vessel, for solar use, 35 litre, vertical, 10bar, 1" connection	POA
FLE-SWB60V	Pressure vessel, for solar use, 60 litre, vertical, 10bar, 1" connection	POA
FLE-SWB80V	Pressure vessel, for solar use, 80 litre, vertical, 10bar, 1" connection	POA

Humidifiers

ultrasonic humidifiers - duct mount



The AIRWIN ultrasonic humidifiers for use in air ducts and air conditioning systems humidify the air in an energy-saving and hygienically safe way, refreshing it at the same time.

These humidifiers are suitable for simultaneous humidification and cooling; in these applications up to 93% electrical energy can be saved.

The aqua drain automatically empties the water tank during inactive periods.

Other sizes are available on request; please note a 48Vac power supply is required for all units. Refer to the accessories section below for pricing.

Product Code	Description	List Price
KB-2	Ultrasonic humidifier, duct mount, 1.2kg/h, 65W on/off	2,195.75
KB-4	Ultrasonic humidifier, duct mount, 2.4kg/h, 125W on/off	2,910.71
N-KBD 6	Ultrasonic humidifier, duct mount, 3.6kg/h, 185W, proportional control, includes aqua drain	6,145.44
N-KBD 12	Ultrasonic humidifier, duct mount, 7.2kg/h, 375W, proportional control, includes aqua drain	8,224.87
N-KBD 18	Ultrasonic humidifier, duct mount, 10.8kg/h, 555W, proportional control, includes aqua drain	10,299.98
N-KBD 24	Ultrasonic humidifier, duct mount, 14.4kg/h, 735W, proportional control, includes aqua drain	12,389.62
N-KBD 30	Ultrasonic humidifier, duct mount, 18.0kg/h, 915W, proportional control, includes aqua drain	14,784.43
N-KBD 36	Ultrasonic humidifier, duct mount, 21.6kg/h, 1095W, proportional control, includes aqua drain	17,125.50
N-KBD 42	Ultrasonic humidifier, duct mount, 25.2kg/h, 1275W, proportional control, includes aqua drain	19,481.03

Humidifiers

ultrasonic humidifiers - room mount (internal blower)



The Airwin ultrasonic room humidifiers come in a compact stainless steel case. Ultrasonic humidifiers are ideal for applications where additional heating is not desired. Typical applications include:

- server rooms
- laboratories
- printing industry
- art galleries & museums

Other sizes available on request

Product Code	Description	List Price
RB/P-2	Ultrasonic humidifier, room mount, 1.0kg/h, 110W, proportional control	4,917.49
RB/P-D 4	Ultrasonic humidifier, room mount, 2.0kg/h, 190W, proportional control, includes aqua drain	6,013.17
RB/P-D 8	Ultrasonic humidifier, room mount, 4.0kg/h, 310W, proportional control, includes aqua drain	7,203.33
RB/P-D 10	Ultrasonic humidifier, room mount, 5.0kg/h, 370W, proportional control, includes aqua drain	8,095.57
RB/P-D 16	Ultrasonic humidifier, room mount, 8.0kg/h, 630W, proportional control, includes aqua drain	10,342.16

ultrasonic humidifier accessories

Product Code	Description	List Price
STEU160/48	Control/isolating transformer, 230V/48Vac, 160VA	316.32
STEU320/48	Control/isolating transformer, 230V/48Vac, 320VA	551.11
STEU500/48	Control/isolating transformer, 230V/48Vac, 500VA	597.55
STEU800/48	Control/isolating transformer, 230V/48Vac, 800VA	788.29

steam electrode humidifiers (compact)



Compact electrode steam humidifier for use with standard tap water

Features:

- steam electrode type for use with steam manifolds for duct applications
- stainless steel cabinet with cleanable steam cylinder
- accepts on/off or 0..10Vdc control signals
- maximum steam output 1 to 58kg/h
- optional SuperFlush special rinsing system
- optional comfort control with on board PID controller
- can add VG.. fan unit for room distribution
- special project pricing is also available where applicable

Product Code	Description	List Price
C01-B-MA00	Steam humidifier, 1kg/h, 415Vac, DN25	3,465.49
C02-B-MA00	Steam humidifier, 2kg/h, 415Vac, DN25	3,717.11
C06-B-AA00	Steam humidifier, 6kg/h, 415Vac, DN25	4,277.67
C10-B-AA00	Steam humidifier, 10kg/h, 415Vac, DN25	4,681.27
C17-B-AA00	Steam humidifier, 17kg/h, 415Vac, DN25	5,331.52
C22-B-AA00	Steam humidifier, 22kg/h, 415Vac, DN40	6,191.04
C30-B-AA00	Steam humidifier, 30kg/h, 415Vac, DN40	6,843.78
C45-B-AA00	Steam humidifier, 45kg/h, 415Vac, 2 x DN40	7,451.67
C58-B-AA00	Steam humidifier, 58kg/h, 415Vac, 2 x DN40	9,806.01

Humidifiers

steam electrode humidifiers (electric element humidification)



Resistive steam humidifier for different water qualities

Features:

- electric resistive type for use with steam manifolds for duct applications
- stainless steel cabinet with cleanable steam cylinder
- accepts on/off or 0..10Vdc control signals
- maximum steam output 6 to 90kg/h
- use with demineralised, softened or standard tap water
- optional comfort control with on board PID controller
- can add VG.. fan unit for room distribution

Product Code	Description	List Price
HL06-B-AA00	Heater type, 6kg/h, 415Vac, DN40	9,307.10
HL09-B-AA00	Heater type, 9kg/h, 415Vac, DN40	9,866.60
HL12-B-AA00	Heater type, 12kg/h, 415Vac, DN40	10,458.15
HL18-B-AA00	Heater type, 18kg/h, 415Vac, DN40	12,902.47
HL24-B-AA00	Heater type, 24kg/h, 415Vac, DN40	13,410.31
HL30-B-AA00	Heater type, 30kg/h, 415Vac, DN40	14,453.90
HL36-B-AA00	Heater type, 36kg/h, 415Vac, DN40	14,771.99
HL45-B-AA00	Heater type, 45kg/h, 415Vac, DN40	20,372.18
HL60-B-AA00	Heater type, 60kg/h, 415Vac, 4 x DN40	23,394.10
HL70-B-AA00	Heater type, 70kg/h, 415Vac, 4 x DN40	26,879.22
HL80-B-AA00	Heater type, 80kg/h, 415Vac, 4 x DN40	30,754.99
HL90-B-AA00	Heater type, 90kg/h, 415Vac, 4 x DN40	37,700.11

steam electrode humidifiers (direct room humidification)



Electrode steam humidifier for direct room humidification

- cleanable steam cylinder for use with standard tap water
- accepts on/off or 0..10Vdc control signals
- maximum steam output 5 to 10kg/h
- optional comfort control with on board PID controller

Product Code	Description	List Price
MS05-B-MA00	Humidifier, 4.8kg/h, 230Vac	4,047.97
MS05-B-AA00	Humidifier, 5kg/h, 415Vac	4,047.97
MS10-B-AA00	Humidifier, 10kg/h, 415Vac	4,847.20

Humidifiers

humidifier accessories



Product Code	Description	List Price
B-2604301	Steam Manifold, 220mm, DN25	360.82
B-2604303	Steam Manifold, 400mm, DN25	360.82
B-2604305	Steam Manifold, 600mm, DN25	390.89
B-2604307	Steam Manifold, 900mm, DN25	432.98
B-2604309	Steam Manifold, 1200mm, DN25	553.25
B-2604311	Steam Manifold, 1450mm, DN25	664.51
B-2604313	Steam Manifold, 220mm, DN40	396.90
B-2604315	Steam Manifold, 400mm, DN40	396.90
B-2604317	Steam Manifold, 600mm, DN40	426.97
B-2604319	Steam Manifold, 900mm, DN40	460.04
B-2604321	Steam Manifold, 1200mm, DN40	622.41
B-2604325	Steam Manifold, 1450mm, DN40	700.59
E-2420423	Drain Hose, 1 1/4", for water, price per metre	92.61
E-2604012	Steam Hose, DN25, price per metre	116.66
E-2604013	Steam Hose, DN40, price per metre	174.40
E-2604002	Condensate Hose, 12.3 x 2.5mm, price per metre	48.11

demineralisers



The AquaFlo 9RCA cartridge uses colour change deionising resin to reduce TDS (Total Dissolved Solids) or conductivity.

The clear cartridge allows you to see the colour change, which indicates the resin is exhausted.

The 9RCA can also be used as a *scavenging* filter, post RO systems, to remove the last remaining mineral salts and thus provide ultra pure water. Great for laboratories and pharmaceutical processes.

Product Code	Description	List Price
AQ101BLUE	Filter housing with 20mm (3/4) BSP in/out	80.64
AP12DI	Demineralising filter, includes first filter, for large applications	1,282.31
AP12DI-RFL	2.5 litre resin refill pack, for AP12DI	194.53

Air Curtains



Minibel



Compact air curtain for kiosks, restaurants, fast food and small sized shops. Places with usually closed doors or automatic door and low pedestrian flows.

- self-supporting casing construction made of zinc plated steel, painted epoxy-polyester structural white colour RAL9016
- low noise compact axial fans (up to 48dBA @ 5m)
- wall support included
- integrated switches for ventilation and heating control
- available in fan only or single stage 230Vac electric element
- door width sizes available in 0.6m or 0.9m

Air Curtains

Optima & Recessed Optima



Cost effective air curtain for small to medium size premises. Ideal for places with medium pedestrian flows

- self-supporting casing construction made of zinc plated steel, painted epoxy-polyester structural white colour RAL 9016 as standard. Other colours are available on request
- low noise twisted cross-flow fans driven with a two speed external rotor motor. Recommended installation height between 2.2 – 2.5m
- available in fan only, 230/400Vac electric elements with two power stages, or water heated
- door width sizes available in 1.0m, 1.5m or 2.0m
- standard control panel and infrared remote control included. Optional: Interface to connect to BMS.

Windbox, Recessed Windbox & Windbox DX Heat Pump



High pressure air curtain for medium to large commercial or industrial premises (e.g. supermarkets, shopping malls, cold rooms). Ideal for places with medium to high pedestrian flows.

- self-supporting casing construction made of zinc plated steel, finished in structural epoxy-polyester RAL 9016 as standard. Other colours or stainless steel construction are available on request. Optional mounting kits include invisible telescopic outlet kit, invisible false ceiling kit, surface mount false ceiling kit (phone to discuss)
- low noise centrifugal double inlet fans driven by a 5-speed external rotor motor with built in thermal protection contact. Optional EC fans available, for 67% energy savings over standard AC fans
- five air flow sizes available based on installation height; S = 2.5-3.0m, M = 2.8-3.5m, G = 3.2-4.0m, L = 4.0-6.0m, XL = 6.0-12.0m
- available in fan only, 230/400Vac electric elements with 3 power stages, water heated or DX heat pump with Toshiba or Hitachi outdoor unit (up to 70% running cost savings with DX option)
- door width sizes available in 1.0m, 1.5m, 2.0m, 2.5m or 3.0m
- standard control panel and infrared remote control included. Optional: digital controller or BMS control interface

Zen

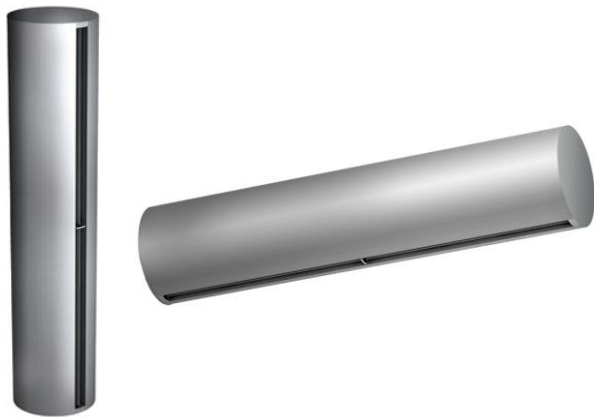


Decorative air curtain in contemporary architectural style. Its minimalist and smart design integrates in any environment and we offer the option to customise, meeting our clients need.

- central structure made of zinc plated steel finished in RAL 9913 black forge as standard. Other colours available on request
- front panels are anodized aluminium. Options for stainless steel and gloss, matt or brushed paint finishes. Other materials are possible as wood, metal stressed finish, etc. We can include personalised logos, signs, graphic designs, etc.
- low noise centrifugal double inlet fans driven by a 5-speed external rotor motor with built in thermal protection contact. Two air flow sizes available based on installation height; M = 2.8-3.5m or G = 3.2-4.0m
- available in fan only, 230/400Vac electric elements with 3 power stages, or water heated
- door width sizes available in 1.0m, 1.5m, 2.0m or 2.5m
- standard control panel and infrared remote control included. Optional: digital controller or BMS control interface

Air Curtains

Rund



Decorative cylindrical high pressure air curtain for commercial doors. For vertical or horizontal installations.

- self-supporting casing construction made of zinc plated steel, finished in structural epoxy-polyester white RAL 9016 or silver grey RAL 9006 as standard. Other colours or stainless steel construction are available on request
- low noise centrifugal double inlet fans driven by a 5-speed external rotor motor with built in thermal protection contact. Two air flow sizes available based on installation height; M = 2.8-3.5m or G = 3.2-4.0m
- ceiling, wall and floor support (tailor-made) options available
- available in fan only, 230/400Vac electric elements with 3 power stages, or water heated
- door width/height sizes available in 1.0m, 1.5m, 2.0m or 2.5m
- standard control panel and infrared remote control included. Optional: digital controller or BMS control interface

Kool



Specially designed high velocity air curtain for cold store and freezers

- self-supporting casing construction made of zinc plated steel, finished in structural epoxy-polyester RAL 9016 as standard. Other colours or stainless steel construction are available on request
- low noise centrifugal double inlet fans driven by a 5-speed external rotor motor with built in thermal protection contact
- three air flow sizes available based on installation height. Model range includes; S = 2.5 – 3.0m, M = 2.8 – 3.5m, G = 3.2 – 4.0m
- also available with flat micro-perforated inlet grille, more elegant, for commercial doors where heating is not needed
- all models are without heating, air only
- anodised aluminium air foil shaped vanes, adjustable from 0 to 15° each side
- door width sizes available in 1.0m, 1.5m, 2.0m, 2.5m or 3.0m
- standard control panel and infrared remote control included. Optional: digital controller or BMS control interface

MAX



Air curtain for industrial doors

- MAX air curtains are usually mounted in vertical position, but can also be installed horizontally over industrial doors
- heavy casing made of double chamber aluminium profiles and hot zinc plated steel panels, finished white RAL 9016 as standard. Other colours are available on request
- axial fans driven by an external rotor motor with built-in thermal contact protection, provided with five speed selection, extremely low noise, maintenance free
- anodised aluminium air foil shaped vanes, adjustable from 0 to 15° each side
- available in fan only, 230/400Vac electric elements with 3 power stages, or water heated
- door width/height sizes available in 1.2m, 1.8m, 2.4m, 3.0m & 3.5m
- standard control panel and infrared remote control included. Optional: digital controller or BMS control interface

Air Curtains

Optional Controls & Supports

CT-5DT-NE	Total Controller	Universal with display and time programmer. Suitable for all air curtains (except Minibel and Eco). Valid for air only, water and electrical heated units. Auxiliary devices: anti-freezer sensor, door contact, room thermostat, etc. Time programmer: 3 ON/OFF for each different day of the week
TD-NE	Digital Thermostat	Electrical heat models only. Modifies heat stages and fan speed depending on selected temperature & programme.
IN-NE-II	Interface II	Connection to BMS and controller (without extra cable). Allows connection of the air curtain to centralized management system BMS.
TA-1002	Ambient thermostat	Analog, 24Vdc/230Vac. To control the equipment according to the selected temperature. Recommended to reduce the energy consumption depending on desired temperature
DC-MAG	Door contact	Magnetic door contact. To operate the equipment according to the state of the door. Recommended to reduce the energy consumption when the door is closed
CB20	Communication cable	20m communication cable (crossed). Crossed 8 pins telephone cable for digital communication
SPCT-M8..m	Steel cable hanger	Steel cable hanger M8 length 1m or 5m. Quick, simple and easy system to fix the units to the ceiling. Strong but lightweight is adjustable at any height
SLB-M8		Support ceiling silenblock threaded nuts M8. Sound insulation incorporated in the hanger. Height adjustment of the threaded rods is possible after installation
SPT-AS		Support ceiling angle with silenblock. Sound insulation incorporated in the hanger. Easy fixing with screws to the air curtain on desired position to make easy the installation

Combustion Controls

oil burner controllers (up to 30kg/h)

SIEMENS



Oil burner controls for the supervision, start up and control of 1- or 2-stage forced draft oil burners in intermittent operation.

Oil throughput up to 30 kg/h.

Product Code	Description	List Price
LOA24.171B27	Oil burner controller, single or dual stage, up to 30kg/h	204.00

oil burner controllers (over 30kg/h)

SIEMENS



Oil burner controls with or without air pressure supervision for checked air damper control. For the control and supervision of oil atomisation burners.

- for burners of medium to high capacity
- for intermittent operation (at least one controlled shutdown every 24hrs)
- can be universally used with multistage or modulating burners
- suited for use with stationary air heaters

Product Code	Description	List Price
LAL1.25	Oil burner controller, single or dual stage, over 30kg/h	1,244.00
LAL2.25	Oil burner controller, single or dual stage, over 30kg/h, pressure switch	1,344.00

Combustion Controls

gas burner controllers

SIEMENS



Burner controls for the supervision of gas burners of small to medium capacity (typically up to 350 kW), with or without fan, in intermittent operation.

Product Code	Description	List Price
LGB21.550A27	Gas burner controller, single or dual stage, up to 350kW, short shutdown (T20 = 2sec)	861.00
LGB22.330A27	Gas burner controller, single or dual stage, up to 350kW, short shutdown (T20 = 23sec)	881.00
LGA41.153A27	Gas burner controller, single or dual stage, atmospheric	337.00

dual fuel burner controllers

SIEMENS



For gas, oil or dual fuel forced draft burners of medium to high capacity.

- for multistage or modulating burners in intermittent operation
- with checked air damper control
- flame supervision with UV detectors QRA... and ionization probe

Product Code	Description	List Price
LFL1.335	Forced draught burner control, dual fuel, intermittent operation	1,341.00
LFL1.635	Forced draught burner control, dual fuel, intermittent operation	1,341.00

universal controllers

SIEMENS



The RWF50 is a universal digital boiler temperature/pressure controller with functions designed specifically for the control of heat generating plant.

The controller includes:

- 3 position output for modulating boilers
- 2 position output for 2 stage boilers
- multiple sensor input types

Product Code	Description	List Price
RWF50.30A9	Universal controller for burners	1,009.00

photo resistive flame detectors

SIEMENS

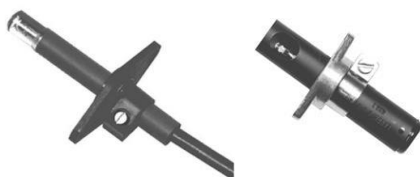


Photo resistive detectors for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.

The QRB are used primarily in connection with oil burner controls in intermittent operation.

Product Code	Description	List Price
QRB1A-A150B70A2	Photo resistive detector, for yellow burning oil flame, large flange, clamp	57.00
QRB3(1)	Photo resistive detector, for yellow burning oil flame, metal case	126.00

Combustion Controls

uv flame detectors

SIEMENS



UV flame detectors designed for use with Siemens burner controls, for the supervision of gas flames, yellow or blue burning oil flames and for ignition spark proving.

Product Code	Description	List Price
QRA2(1)	UV detector for gas and oil burners, yellow or blue flame, flange, clamp	396.00
QRA10.C	UV detector for gas and oil burners, yellow or blue flame	987.00
QRA10M.C	UV detector for gas and oil burners, yellow or blue flame, metal case	1,063.00
QRA53.E27	UV detector for gas and oil burners, yellow or blue flame, metal case, shutter	1,881.00

photo cell detectors

SIEMENS



Photocell detectors designed for use with burner controls, for the supervision of yellow-flame oil flames.

They are generally used in connection with burner controls for the control and supervision of large capacity burners.

Product Code	Description	List Price
RAR9(1)	Selenium photo cell detector, yellow burning oil flame, 100m lead	322.00

accessories

Product Code	Description	List Price
AGK11	Base for LOA, LGB, LMG, LMO, LGA	23.00
AGK66	Cable gland holder for AGK11	3.00
AGM11	Base for LDU burner control	90.00
AGM17	Base for LGK burner control	90.00
AGM410490500	Base for LAL burner control	90.00
AGM410490550	Base for LFL burner control	90.00
451916300	Fuse for LFL, LAL, LDU combustion controls, 8A	142.00

Setpoint Solutions Ltd's Standard Terms and Conditions of Sale

1 DEFINITIONS AND INTERPRETATIONS

- 1.1 Unless inconsistent with the context of the subject matter of these Conditions of Sale:
- *Conditions* means the terms contained in this document;
 - *The Company* means Setpoint Solutions Ltd;
 - *The Customer* means the company, person or persons who has ordered Goods and/or Services from the Company;
 - *Goods* means any goods and/or services supplied to the Customer by the Company.
- 1.2 The Customer's order once accepted by the Company, or the Customer's acceptance of the Company's quotation for the supply of the goods, shall constitute a contract.
- 1.3 No alteration or addition to these Conditions shall be effective unless in writing and signed for and on behalf of both the Company and the Customer. No person claiming to act on the Company's behalf is authorised to waive or change these conditions verbally.

2 QUOTATIONS AND PRICES

- 2.1 Quotations are valid for a period of 30 days unless otherwise agreed by the Company.
- 2.2 Quotations exclude Goods and Services Tax and freight charges unless otherwise stated.
- 2.3 The Company reserves the right to revise prices and charges in the event of any change in costs and/or exchange rate between the date of quotation and the date of delivery.

3 TITLE

- 3.1 Ownership of the Goods remains with the Company and will not pass to the Customer until all Goods supplied to the Customer have been paid for in full. Until that time the Customer will keep possession of the Goods so that they can be readily identified as belonging to the Company; and the Customer is not authorised by the Company to dispose of the Goods.
- 3.2 If the Customer defaults any of these Conditions, the Company has the right to retake possession of the Goods supplied, and the Customer authorises the Company to enter the premises in which the Goods are stored and retake possession of the goods.
- 3.3 The Company shall not be liable for any costs, damages or losses suffered by the Customer or any other person caused by retaking possession of the Goods. The Customer hereby indemnifies the Company against prosecution and claims for damage resulting from its seizure of the Goods.

4 PERSONAL PROPERTIES SECURITIES ACT

- 4.1 The Customer acknowledges and agrees that in consideration of the supply of goods on these terms and conditions the Customer grants to the Company a first ranking security interest under the Personal Property Securities Act 1999 (PPSA) in each and every supply of goods made by the Company to the Customer thus securing to the Company the purchase price and the obligations in this document.
- 4.2 In the event of any default by the customer under these terms and conditions the Company shall be entitled to exercise all rights of a secured party under the PPSA.
- 4.3 The Customer will sign any further documents or provide any further information to enable the Company to register a financing statement of financing change statement on the PPSA register.
- 4.4 The Customer will not register a financing charge statement or change demand without the prior written consent of the Company.
- 4.5 The Customer will give the Company not less than fourteen days written notice prior to any proposed change in the Customer's name or other details.
- 4.6 The Customer waives the right to receive verification statement in respect of any financing statement or any financing change statement relating to the security interest.

5 DELIVERY

- 5.1 The Company will use its best endeavours to deliver the Goods in accordance with any pre-arranged dates.
- 5.2 No guarantee is implied as to delivery dates nor will the Company be liable for any loss or damage arising from delays in delivery howsoever caused, and whether in respect of the whole or part of the Goods ordered.
- 5.3 A delay in delivery shall not entitle the Customer to cancel the contract.

6 INSURANCE

- 6.1 During the period between delivery and full payment for the Goods, the Customer will maintain sufficient insurance cover on the goods in the name of the Company against loss or damage from any cause, and maintain the Goods in good condition.
- 6.2 No loss or damage suffered by the Customer shall relieve the Customer from its obligation to pay the balance of the purchase price, or to observe all the other Conditions. During such period the Customer will maintain the Goods in good condition.

7 CLAIMS AND WARRANTIES

- 7.1 Any complaints of short delivery or damage or loss in transit of any Goods must be made to the Company within seven (7) working days of delivery.
- 7.2 The Company shall have the option of repairing, replacing or crediting the value of the Goods where any complaints are made and proven. This shall fully discharge any legal liability the Company might otherwise have suffered.
- 7.3 The Company will replace or repair at its' own cost all Goods supplied to the Customer which are, or become faulty due to defective materials or defective workmanship in the manufacture of the Goods, provided the Customer has notified the Company in writing of the fault within a period of twelve (12) calendar months from the date of shipment of the Goods.
- 7.4 In no event shall the Company be liable for any loss or damages in excess of the price received by the Company from the Customer in respect of the Goods.
- 7.5 The Customer shall, as soon as practicable after discovering any such defect return the Goods to the Company, unless it has been agreed that the necessary replacement or repair shall be carried out on the Customer's premises or on the premises where the Goods are installed.
- 7.6 Clauses 7.2 and 7.3 shall not apply, and the Company will be under no liability to replace or repair the Goods, where the Customer attempts to repair the Goods without the written consent of the Company.

8 RETURNS

- 8.1 Goods returned for credit may be accepted or rejected at the sole discretion of the Company.
- 8.2 Goods must be returned at the expense of the Customer, in good order and condition, unused, and in the original packaging.
- 8.3 Goods may be accepted for return for a maximum credit of 85% of the original nett price of the Goods paid by the Customer.
- 8.4 Goods indented on the basis of instructions received from the Customer, specially imported, or brought in or procured on behalf of the customer may not be returned.

9 LIABILITY

- 9.1 To the maximum extent permitted by law, the Company shall be under no liability to the Customer in respect of defects in the Goods supplied except as specified in these Conditions, nor shall it be responsible for any personal injury or damage or loss of any kind attributable to defects in such Goods. The Customer will keep the Company indemnified against any such claim.
- 9.2 The Company shall not be liable for any indirect, special or consequential loss or damage of any nature whatsoever arising or suffered in respect of the Goods, nor of any conditions, guarantees or warranties whether expressed or implied by statute or at common law, which the Customer and the Company hereby contract out of to the maximum extent permitted by law.
- 9.3 Where the Customer acquires the Company's Goods for the purposes of a business, the Customer agrees the Consumer Guarantees Act 1993 has no application to the contract created by these Conditions.
- 9.4 Nothing contained in these Conditions shall be deemed to exclude or restrict any rights or remedies the Customer may have under the Fair Trading Act 1986.

10 REPAIR AND EXCHANGE

- 10.1 When available, reconditioned equipment may be substituted for Goods needing repair, in which case the charge will reflect the cost of repairing the defective item, but will not exceed the cost of a new one.
- 10.2 No repair or replacement shall extend the 12 (twelve) month guarantee period referred to in clause 7.3 on any Goods supplied.

11 PAYMENT

- 11.1 Payment for goods shall be made in full on or before the 20th day of the month following the date of the invoice (the "due date").
- 11.2 Interest may be charged on any amount owing after the due date at the rate of 1.5% per month or part month thereafter.
- 11.3 If any payment is not made by due date, the Company may withhold further deliveries, and the Company shall not be liable to the Customer for non-delivery of those goods.
- 11.4 All expenses, costs of disbursements incurred by the Company in recovering any outstanding monies shall be paid by the Customer.

12 FORCE MAJEURE

- 12.1 The Company shall not be liable for failure to perform or complete any of its obligations due to any causes beyond the reasonable control of the Company including but not limited to restrictions on importing, refusal to issue import license, government direction, strike, lockout, labour disputes, refusal to handle goods, breakdown of plant, accidents, delay of transport, unavailability of materials, fire, explosion, local or national emergency, natural disaster, war, riot or civil commotion, international event or crisis.

13 GENERAL

- 13.1 If any part of these Conditions is found to be void or unenforceable by a court with competent jurisdiction, it will not affect the validity of the balance of these Conditions which shall remain valid and enforceable according to its terms.
- 13.2 These Conditions constitute the full and complete understanding of the parties as to the subject matter hereof and supersedes any prior or contemporaneous verbal or written communications with respect to the subject matter hereof.
- 13.3 These Conditions will be governed by and construed in accordance with the laws of New Zealand. In relation to any legal action or proceedings arising out of or in connection with these Conditions ("Proceedings"), each party irrevocably submits to the exclusive jurisdiction of the courts of New Zealand and waives any objections to the Proceedings in any such court on the grounds of venue or on the grounds that the Proceedings have been brought in an inconvenient forum.

14 TERMINATION OF CREDIT

- 14.1 The Company shall be entitled without notice to terminate any credit arrangement it may have made with the Customer in the event the Customer defaults any of these Conditions, or for any other reason the Company deems fair.

15 ACCEPTANCE OF TERMS OF SALE

I have read, understood and agree to these Terms and Conditions of Sale.