



# SG3

High performance Logic Relays  
with Ethernet Communication



# SG3 Highlights

- Cost effective and easy to install and program for varieties of applications for Industrial , agricultural & building automation.
- SG3 offers extensive communication features with an integrated Ethernet interface. It provides efficient programming, remote monitoring and control of machines & processes.
- SD card Interface for program storage , and data logging with capacity 128MB to 32GB. PC programming software Remote I/O and I/O link for interfacing SG3 units using Ethernet interface and TECO programming software..



## Control ventilation fans and heaters

- Power management
- Heating
- Cooling system
- Ventilation
- Air- Conditioning



## Building Automation

- Lighting Control
- Blinds & Gate
- The monitoring of liquid leakage
- Irrigation



## Monitor and Control System

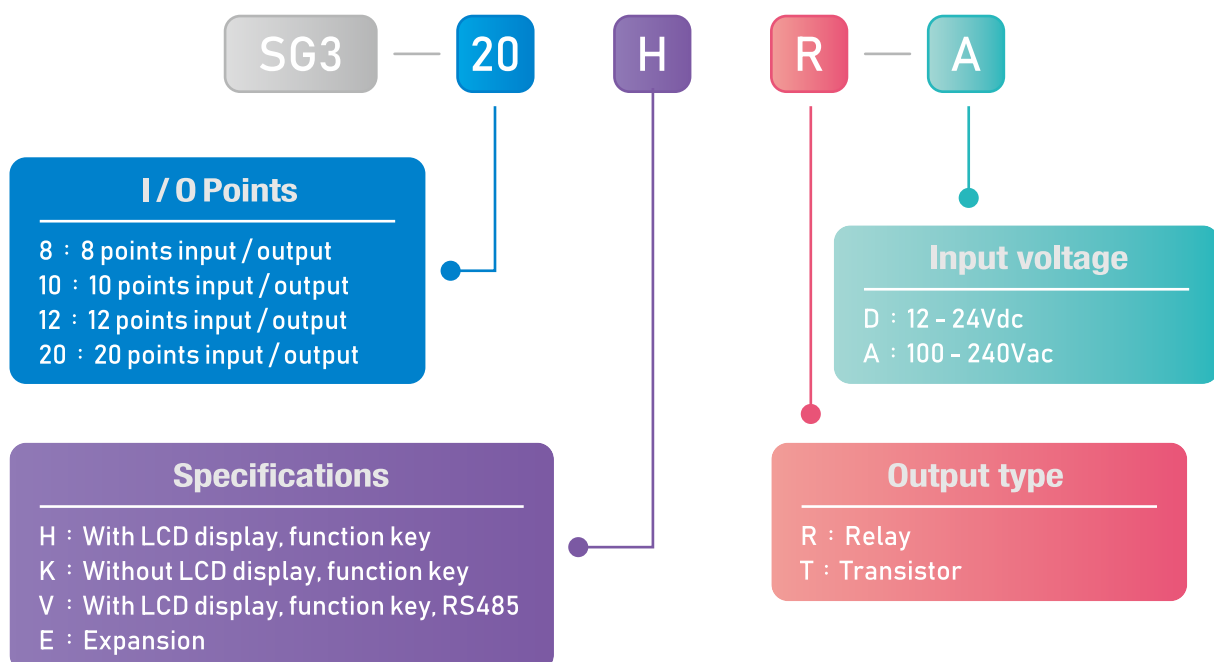
- Access Control
- Alarm System
- Surrounding air and water quality
- Power Energy Saving

# Product Feature

10/12/20 points basic module, analog input/output, temperature input, relay or transistor outputs optional.

- Max I/O expansion with 88 inputs and 84 outputs with 9 expansion modules.
- Basic module (V type) built-in Modbus Protocols (TCP&RTU), 8 channel I/O link and remote I/O communication port.
- All units have integrated Ethernet port for program read/write and Modbus TCP master/slave function.
- Email messaging function allows sending of a simple preset Alarm and I/O status message to a predefined email receiver.
- Ethernet and serial communication for remote control and I/O expansion. Modbus communication allows interfacing to other devices.
- Can be used SD card (max 32GB) as an external memory card to read/write user program, event log and configuration files.
- Expansion communication modules: Profibus-DP, DeviceNet, Modbus.
- Built-in 16x4 LCD display and ten languages: English, French, Spanish, Italian, German, Portuguese, Simple Chinese, Polish, Russian and Turkish are selectable.
- Programming languages: Ladder format, max 600 lines, 4 instructions per line. FBD format, max 500 blocks.
- Built-in 31 multi-function timers, 31 sets of counters, 31 RTC comparators and 126 auxiliary, 31 analog compare.
- Built-in RTC (setting summer/winter time change) will be operational up for up 5 years after power off the battery battery installed (CR1220).
- Relay output contact rating max 8A / Transistor output rating max 0.5A.
- Password protection function can be set for two levels. A and B (16 bit password).
- Client PC programming software provides Ladder & FBD program read / write / monitoring / server and network set up functions.

## Catalog No. Identification



## Product Specifications

Content		Specification
Mode of user program		Ladder & FBD
Environmental	Operation temperature	-4° to 122°F (-20° to 50°C)
	Storage temperature	-40° to 158°F (-40° to 70°C)
	Maximum Humidity	90% (Relative, non-condensing)
	Operation Gas	No corrosive gases
Main structure	Maximum Vibration	3.5mm amplitude , 1.0g acceleration according to IEC61131-2
	Maximum Impact	Impact resistance : Peak value 15g,11ms according to IEC61131-2
EMI/EMC	ESD	Contact ±4KV, air discharge ±8KV
	EFT	Power AC: ±1KV DC: ±0.5KV
	CS	0.15~80MHz 3V/m
	RS	80~1000MHz 10V/m ,1.4GHz~6GHz:3V/m
	EMI	IEC61131-2 、 IEC61000-6-4 ClassA
Installation	Enclosure Type	IP20
	Mounting mode	Direct Mounting or DIN-rail (35mm) Mounting
	Direction	According to chapter 2: Installing
Wiring		AWG 14/∅ 2.6mm2
Dimension (WxHxD)		72x90x59.6mm for 10 points basic module
		126x90x59.6mm for 20 points basic module
		38x90x59.6mm for expansion module
Certification		UL Listed (DC series), UL Recognition(AC series) 、 CE 、 UKCA

## System Specifications

### Main units

	MODEL	Input Power		Input point	Output point	Analog input	RTC	LCD keypad	Expansion ability	High speed input	PWM	I/O LINK	
		AC100~240V	DC12~24V										
10/12 points	"Standard" models with Keypad, with display												
	10HR-A	○		6	4	relay		○	○	○			
	12HR-D		○	8	4	relay	2	○	○	○	○		
	12HT-D		○	8	4	transistor	2	○	○	○	○	○	
	OEM "Blind" Models, No Keypad, No Display												
	10KR-A	○		6	4	relay		○		○			
20 points	"Standard" models with Keypad, with display												
	20HR-A	○		12	8	relay		○	○	○			
	20HR-D		○	12	8	relay	4	○	○	○	○		
	20HT-D		○	12	8	transistor	4	○	○	○	○	○	
	OEM "Blind" Models, No Keypad, No Display												
	20KR-A	○		12	8	relay		○		○			
High speed communication models	20KR-D		○	12	8	relay	4	○		○	○		
	20KT-D		○	12	8	transistor	4	○		○	○	○	
	20VR-D		○	12	8	relay	4	○	○	○	○	○	
	20VT-D		○	12	8	transistor	4	○	○	○	○	○	

### Expansion and option model

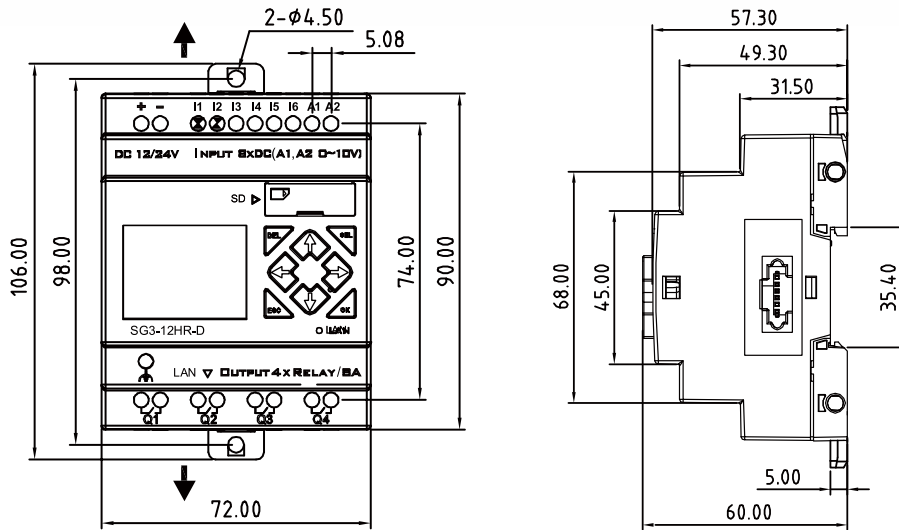
Model	Part No.	Instruction
Digital input/output	SG2-8ER-A	Input 100~240Vac, 4 inputs/4 relay outputs
	SG2-8ER-D	Input 24Vdc, 4 inputs/4 relay outputs
	SG2-8ET-D	Input 24Vdc, 4 inputs/4 transistor outputs
Analog input	SG2-4AI	4 points 12 bits voltage/current input (0-10V/0-20mA)
Analog output	SG2-2AO	2 channels output module voltage/current input (0-10V/0-20mA)
Temperature input	SG2-4PT	Temperature input module (4 channels PT-100 type input)
Communication	SG2-PBUS	Profibus communication module (DC24V)
	SG2-DNET	Devicenet communication module (DC24V)
	SG2-MBUS	Modbus communication module (DC24V)
Pulse output	SG3-4HSP*	4 points 100KHz high speed pulse output

\* For Units with Transistor output.

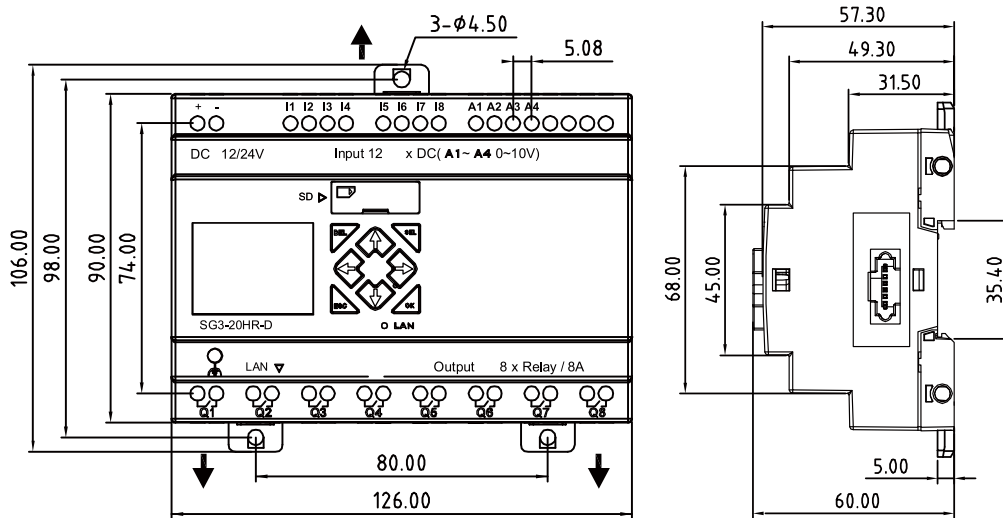
# Dimension

(unit : mm)

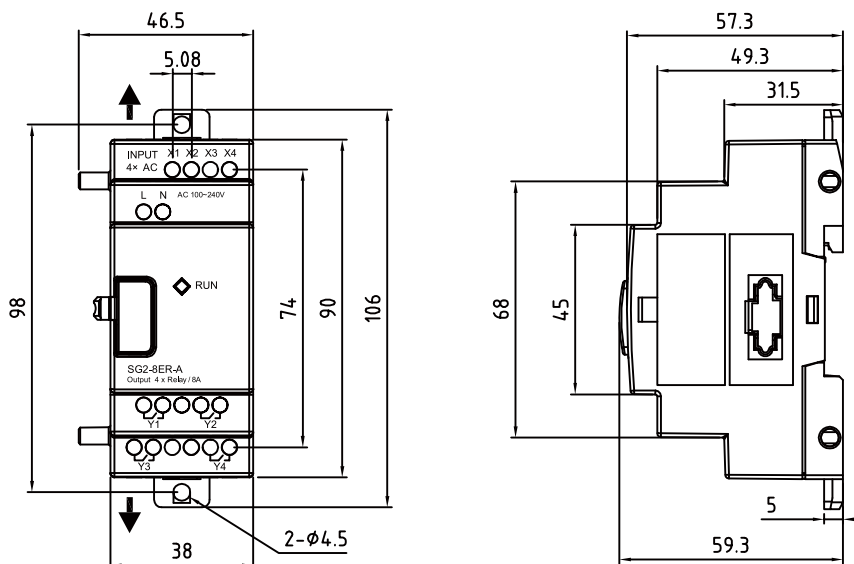
## 10 / 12 points main unit



## 20 points main unit



## 8 points expansion

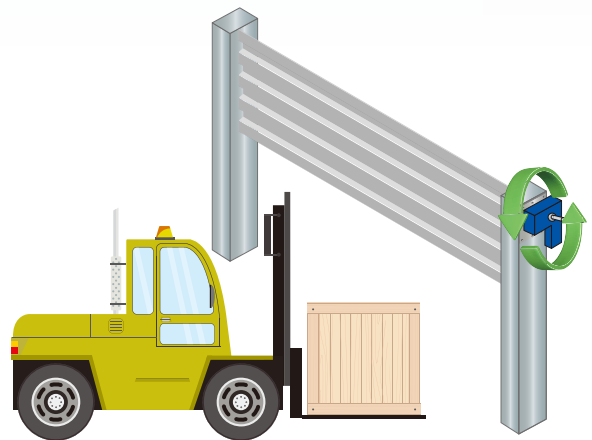




# Typical SG3 applications

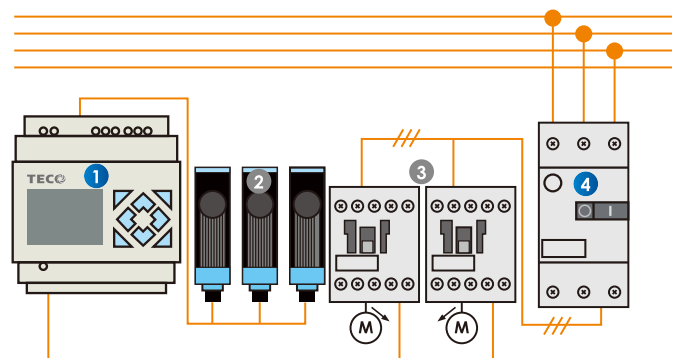
## Application

- Smart Factory
- Conveyor System
- Security Monitor



## Proximity switches for position indication

- SG3 Can be integrated in automation solutions such as Gate control and Gate monitoring.
- Detection Sensors such as proximity, limit, ultrasonic and photocells can be interfaced to the inputs.
- AC or DC Actuators and motor connectors can be interfaced to the SG3 relay or transistor outputs.
- SG3 client programming software can be used to create user control programs.
- Input/Output Status Monitoring provides an efficient system set up.
- Scheduled start /stop can be programmed using RTC . ( Real Time Clock).
- Remote control possibility using the communication features such as Modbus.



① TECO SG3

③ Contactor

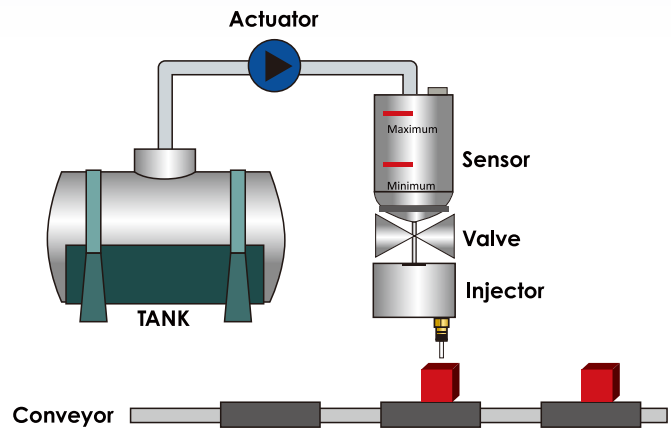
② Proximity Switches

④ Breaker

# Typical SG3 applications

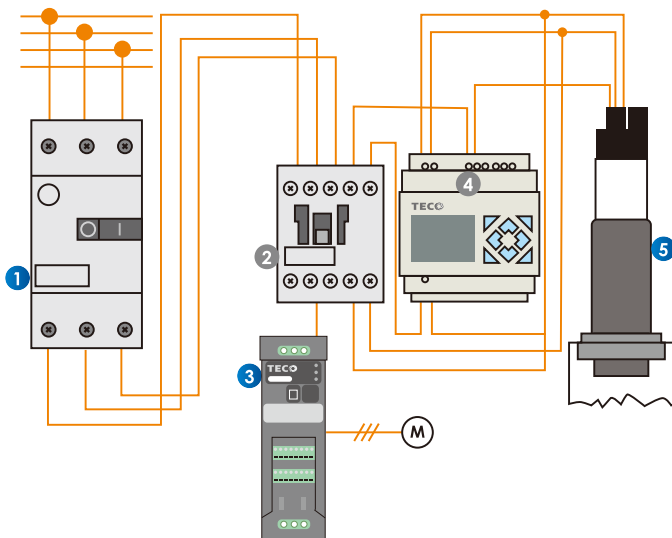
## Application

- Process System
- Flow control
- Injector System Feeding system



## Liquid filing and monitoring

- Fluid level detection by sensors.
- Programmed Process status monitoring and alarms on the SG3 display.
- Scheduled start/stop by RTC.
- PID control of processes.
- Process limit values can be altered using the buttons on the keypad.
- Remote control possibility using the communication features.



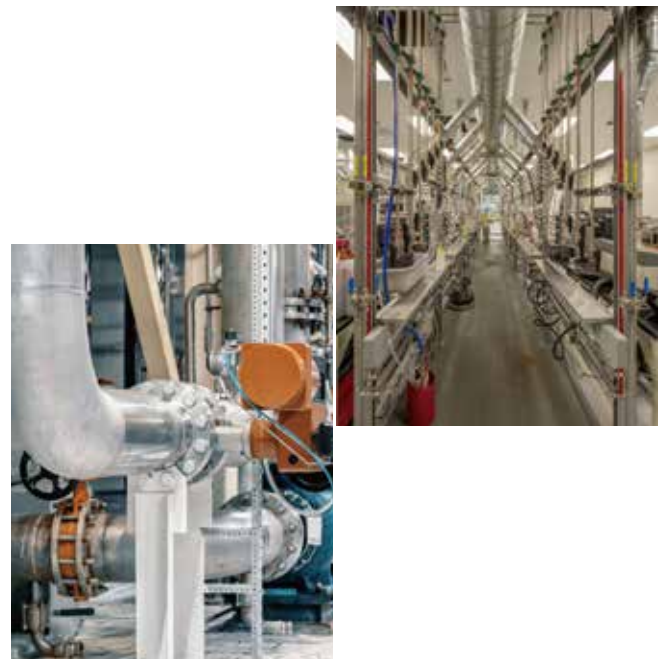
① Breaker

② Contactor

③ TECO S510

④ TECO SG3

⑤ Ultra Sonic Sensor



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Specifications covered in this brochure may be subject to change without notice.



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