

# PID PROCESS CONTROLLER WITH COMPUTER CONTROLLED BASE UNIT (MODULAR SYSTEM SENSORS)





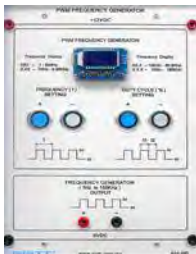



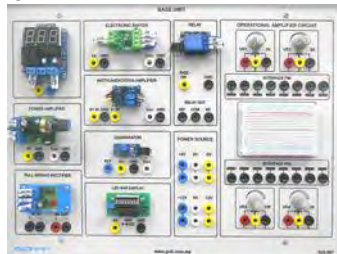
Model Number : GOTT-MSFSS-CCBU



## DESCRIPTION :

This unit is common for the different test modules type GOTT-MSFSS-CCBU, and can work with one or several modules. The Computer Controlled Base Unit is a complete unit designed to provide signal conditioning for many sensors and transducers output signals that must be conditioned before a data acquisition system can effectively and accurately acquire the signal. These circuits consist of differential and instrumentation amplifiers, filters, current to voltage and frequency to voltage converters. This is also includes a PID controller, industrial controller, and other interesting elements that can be used to introduce students the concepts about process control.

## PRODUCT MODULES

<b>MAINS POWER SUPPLY</b> <b>CODE 452-026</b> <ul style="list-style-type: none"><li>Input voltage: AC220-240V</li><li>FCCB 2 Pole 16A</li><li>RCCB 2 pole 25A</li></ul> 	<b>DC VOLTMETER</b> <b>CODE 624-896</b> <ul style="list-style-type: none"><li>Analog Voltmeter (-10V to 10V)</li><li>Digital Voltmeter (0 to 100V)</li></ul> 	<b>PID PROCESS CONTROLLER</b> <b>CODE 624-891</b> <ul style="list-style-type: none"><li>Intelligent Universal PID process controller</li><li>Temperature sensor Input</li><li>DC 0~5V, 4~20mA Input</li><li>RS 485</li></ul> 	<b>DC POWER SUPPLY</b> <b>CODE 955-124</b> <ul style="list-style-type: none"><li>Input voltage: AC220-240V</li><li>Output Voltage:<ul style="list-style-type: none"><li>+24VDC/2A</li><li>+12VDC/7A</li><li>+5VDC/7A</li></ul></li></ul> 
<b>PWM FREQUENCY GENERATOR</b> <b>CODE 624-895</b> <ul style="list-style-type: none"><li>Frequency range: 1Hz-150KHz</li><li>Adjustable duty cycle</li><li>Square wave output</li></ul> 	<b>WAVEFORM GENERATOR</b> <b>CODE 624-894</b> <ul style="list-style-type: none"><li>Voltages: 9V DC</li><li>Sine wave, triangular, square, sawtooth 1~65KHz output. High speed</li><li>square wave 1mhz, 2mhz, 4mhz, 8mhz</li></ul> 	<b>CONVERTER MODULE</b> <b>CODE 624-893</b> <ul style="list-style-type: none"><li>Voltage to Frequency<ul style="list-style-type: none"><li>Input voltage: 0-10V DC Input</li><li>Output frequency: 0-10KHz</li></ul></li><li>Frequency to Voltage control<ul style="list-style-type: none"><li>Input: 0-10KHz</li><li>Output : 0-10V DC</li></ul></li><li>Voltage to Current Converter<ul style="list-style-type: none"><li>Input: 0-5V</li><li>Output: 4-20mA</li></ul></li><li>Current to Voltage Converter<ul style="list-style-type: none"><li>Output: 0-5V DC</li></ul></li></ul> 	
<b>AC/DC POWER SUPPLY</b> <b>CODE 624-892</b> <ul style="list-style-type: none"><li>Fixed : <math>\pm 5V</math> DC, <math>\pm 12V</math> DC</li><li>Variable: 0-12 V DC, 0-5V DC</li><li>Variable AC power supply: 0-30V AC</li></ul> 	<b>BASE UNIT</b> <b>CODE 624-897</b> <ul style="list-style-type: none"><li>Power Amplifier<ul style="list-style-type: none"><li>Voltage range: 3V-12V</li></ul></li><li>Electronic Switch<ul style="list-style-type: none"><li>Input signal: 3-20V PWM</li><li>PWM frequency: 0-20KHz</li></ul></li><li>Comparator<ul style="list-style-type: none"><li>Operating Voltage: 3.3 V to 5 V</li><li>Output: DO digital switching output (0 and 1) and AO analog voltage output</li></ul></li><li>LED Bar Display<ul style="list-style-type: none"><li>Input : 0-5V DC</li></ul></li><li>Relay<ul style="list-style-type: none"><li>Operating Voltage: 5V DC</li><li>Power source Input: <math>\pm 5V</math> DC, <math>\pm 12V</math> DC</li><li>Contact Type: NC and NO</li><li>Counter<ul style="list-style-type: none"><li>5V DC input</li><li>3 digit digital display</li></ul></li></ul></li><li>Operational Amplifier<ul style="list-style-type: none"><li>Breadboard 82 x 54mm</li><li>Potentiometer 1K, 5K, 10K, 20K</li><li>Interface Pin (4pin/banana socket)</li></ul></li></ul> 		

**\*This module is design as a based module that can only function with at least one of the optional item**

\*Proposed design only, subject to changes without any notice.

# MODULAR SYSTEM SENSORS TEMPERATURE TEST MODULE










Model Number : GOTT-MFSS-TTM2



## DESCRIPTION :

GOTT-MFSS-TTM2 has been designed to teach the use and applications of sensors of temperature as a measure, and its control. To measure the temperatures there are different type of sensors placed in different positions that are at different distances from the warming source, in order to get higher or lower temperatures. GOTT-MFSS-TTM2 has been invented as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.

## PRODUCT MODULES

MAINS POWER SUPPLY	CODE 452-026	TEMPERATURE SENSOR	CODE 624-812	HALOGEN LAMP	CODE 624-831	RELAY AC	CODE 624-832
<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>FCCB 2 Pole 16A</li> <li>RCCB 2 pole 25A</li> </ul> 		<ul style="list-style-type: none"> <li>Thermocouple Type K</li> <li>(-50°C) to (+350°C)</li> </ul> 		<ul style="list-style-type: none"> <li>Halogen Lamp</li> </ul> 		<ul style="list-style-type: none"> <li>Relay Coil : 240 VAC</li> </ul> 	
CAPILLARY THERMOSTAT	CODE 624-833	ADJUSTABLE BIMETALLIC THERMOSTAT	CODE 624-834	MAGNETIC BLOCK	CODE 624-836	UPPER AND LOWER HEATING BLOCK	CODE 624-835
<ul style="list-style-type: none"> <li>Power: AC 250V 16A</li> <li>Type: NC</li> </ul> 		<ul style="list-style-type: none"> <li>AC250V 16A bimetallic discs adjustable heating limiter hot thermostat</li> <li>Power: AC 250V 16A</li> </ul> 		<ul style="list-style-type: none"> <li>Magnetic Bar</li> </ul> 		<ul style="list-style-type: none"> <li>Upper Part Heating Block (-80°C)</li> <li>Lower Part Heating Block (-40°C)</li> <li>Thermostat Switch</li> <li>Type: NC</li> </ul> 	
DC POWER SUPPLY	CODE 955-124	<h2>EXPERIMENT TOPICS</h2> <ul style="list-style-type: none"> <li>To understand the Curie Effect theory.</li> <li>To measure Curie temperature of a ferrite</li> <li>To use the bimetallic thermostat as a temperature controller.</li> <li>To use the Bimetallic Switch Sensor that will cut off at 50°C to control the temperature.</li> <li>To study the function of the capillary thermostat</li> </ul>					
<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>Output Voltage: <ul style="list-style-type: none"> <li>+24VDC/2A</li> <li>+12VDC/7A</li> <li>+5VDC/7A</li> </ul> </li> </ul> 							

\*This module is design as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.

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# MODULAR SYSTEM SENSORS PRESSURE TEST MODULE






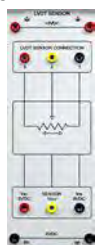

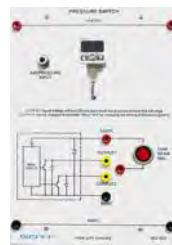

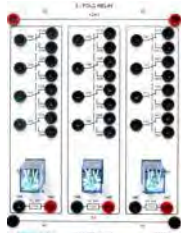

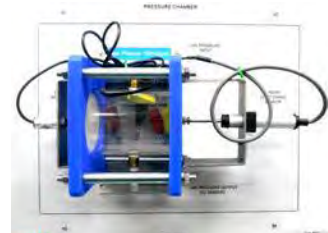
Model Number : ÔUVVËT ÙØÙËÛVT H



## DESCRIPTION :

GOTT-MSFSS-PTM3 has been designed to teach the use and applications of this kind of sensors measurement systems. It shows the different pressure measurement techniques. In GOTT-MSFSS-PTM3 there is a pressure chamber with several sensors adjusted to measure the pressure changes. There is also a compressor that gives the system pressure with which the pressure chamber maximum pressure can be adjusted. GOTT-MSFSS-PTM3 has been designed as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.

## PRODUCT MODULES

MAINS POWER SUPPLY	CODE 452-026	STRAIN GAUGE	CODE 624-856	T- OINT	CODE 624-858	LINEAR POSITIONING SENSOR	CODE 624-853
<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>FCCB 2 Pole 16A</li> <li>RCCB 2 pole 25A</li> </ul> 		<ul style="list-style-type: none"> <li>Characteristics: Resistance 120Ω at 24°C</li> </ul> 		<ul style="list-style-type: none"> <li>Tubing Size : 1/4 inch</li> </ul> 		<ul style="list-style-type: none"> <li>Resistance: 0-5K OHM</li> <li>Output: 0-5VDC</li> <li>Power supply: 10-16VDC</li> </ul> 	
AIR REGULATOR	CODE 624-854	LVDT SENSOR	CODE 624-811	DC POWER SUPPLY	CODE 955-124	PRESSURE SWITCH	CODE 452-003
<ul style="list-style-type: none"> <li>0-150 psi (0-10 bar)</li> </ul> 		<ul style="list-style-type: none"> <li>Range: 0-5MM</li> <li>Output: 0-5VDC</li> <li>Power supply: 1-5VDC</li> </ul> 		<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>Output Voltage: <ul style="list-style-type: none"> <li>+24VDC/2A</li> <li>+12VDC/7A</li> <li>+5VDC/7A</li> </ul> </li> </ul> 		<ul style="list-style-type: none"> <li>Maximum pressure input 1MPa</li> </ul> 	
AIR DIFFERENTIAL PRESSURE SENSOR	CODE 624-855	3-FOLD RELAY	CODE 013-030	AIR COMPRESSOR	CODE 624-851	PRESSURE CHAM ER	CODE 624-857
<ul style="list-style-type: none"> <li>Power supply: ≤2.0mADC; ≤10VDC</li> <li>Pressure range: 0kPa-200kPa</li> <li>DC Voltmeter LCD</li> </ul> 		<ul style="list-style-type: none"> <li>Relay Coil: 24VDC</li> </ul> 		<ul style="list-style-type: none"> <li>Max: 150 psi</li> </ul> 		<ul style="list-style-type: none"> <li>Maximum pressure: 16kPa (2psi)</li> <li>LVDT Sensor</li> <li>Linear Positioning Sensor</li> </ul> 	

**\*This module is design as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.**

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# MODULAR SYSTEM SENSORS FLOW TEST MODULE








Model Number : GOTT-MSFSS-FTM4



## DESCRIPTION :

GOTT-MSFSS-FTM4 is designed to show techniques to measure changeable fluids. The module is made up of tanks assembled on a structure. Inside them there is a pumping system that allows to pump the water. The pump enables that a big amount of water from the tank flows. It is possible to change the flow volume by changing the pump power supply voltage using the terminals placed on the front panel. GOTT-MSFSS-FTM4 has been invented as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.

## PRODUCT MODULES

MAINS POWER SUPPLY CODE 452-026	T- JOINT CODE 624-877	PRESSURE SENSOR CODE 624-873	WATER FLOW SWITCHH CODE 624-872
<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>FCCB 2 Pole 16A</li> <li>RCCB 2 pole 25A</li> </ul> 	<ul style="list-style-type: none"> <li>Tubing Size : 1/4 inch</li> </ul> 	<ul style="list-style-type: none"> <li>Mini Pressure Transducer Sender Sensor Stainless Steel For Oil Fuel Air Water (30 Psi)</li> <li>Range : 0 to 30 psi</li> <li>Voltage: DC 5V</li> </ul> 	<ul style="list-style-type: none"> <li>AC240V Contact : NO</li> <li>Water flow: 1.0L/min</li> </ul> 
WATER FLOW METER CODE 624-871	WATER FLOW SENSOR CODE 624-874	WATER DIFFERENTIAL PRESSURE SENSOR CODE 624-875	DC POWER SUPPLY CODE 955-124
<ul style="list-style-type: none"> <li>Range : 0-4 l/min</li> </ul> 	<ul style="list-style-type: none"> <li>Power Supply : DC 5V</li> <li>Range : 1-5L/min</li> <li>Working voltage: DC 5V-24V</li> </ul> 	<ul style="list-style-type: none"> <li>Pressure range: 0kPa-100kPa</li> <li>Power supply: ≤2.0mA DC; ≤10V DC</li> </ul> 	<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>Output Voltage:               <ul style="list-style-type: none"> <li>+24VDC/2A</li> <li>+12VDC/7A</li> <li>+5VDC/7A</li> </ul> </li> </ul> 
WATER TANK CODE 624-876	UNDERWATER PUMP CODE 624-874	EXPERIMENT TOPICS	
<ul style="list-style-type: none"> <li>Diameter: 195mm</li> <li>Height: 500mm</li> </ul> 	<ul style="list-style-type: none"> <li>Super Submersible Pump</li> <li>AC220V 50Hz 60W</li> <li>Flow rate : 3000 L/H</li> </ul> 	<ul style="list-style-type: none"> <li>Study the function of water flow meter.</li> <li>To measure the water flow rate generated by an underwater pump using a water flow meter of changeable area.</li> <li>Study the function of water flow switch</li> <li>To use the water flow switch to detect the water flow</li> <li>Study the function of the water flow sensor.</li> <li>To measure the output signal produced by an underwater pump using the water flow sensor.</li> <li>Study the function of the pressure sensor.</li> <li>To use the pressure sensor to measure the output voltage of different liquid level in the water tank.</li> <li>Study the function of water differential pressure sensor.</li> <li>To measure the output voltage of water differential pressure sensor.</li> </ul>	

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# MODULAR SYSTEM SENSORS VIBRATION LEVEL TEST MODULE



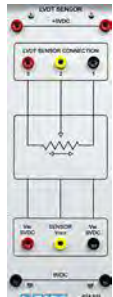



Model Number : GOTT-MFSS-VLTM1



## DESCRIPTION :

This GOTT-MFSS-VLTM1 is design to teach mechanical vibration and displacement variable measurement techniques. It has been design to teach the students the effect of deformation on the elastic plate. On top of that, students can also learn to measure the deformation of elastic plate using strain gauge. Furthermore, students can determine the way to measure the temperature of the elastic plate using thermocouple type K and the effect of temperature variation on the strain gauge. GOTT-MFSS-VLTM1 has been designed as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.

## PRODUCT MODULES

MAINS POWER SUPPLY	CODE 452-026	STRAIN GAUGE	CODE 624-856	LVDT SENSOR	CODE 624-811	TEMPERATURE SENSOR	CODE 624-812
<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>FCCB 2 Pole 16A</li> <li>RCCB 2 pole 25A</li> </ul> 		<ul style="list-style-type: none"> <li>Characteristics: Resistance 120Ω at 24°C</li> </ul> 		<ul style="list-style-type: none"> <li>Range: 0-5MM</li> <li>Output: 0-5VDC</li> <li>Power Supply : 0-5 VDC</li> </ul> 		<ul style="list-style-type: none"> <li>Thermocouple Type K</li> <li>50 deg C - 350 deg C</li> </ul> 	
VIBRATION DETECTION	CODE 624-813	DC POWER SUPPLY	CODE 955-124	EXPERIMENT TOPICS :			
<ul style="list-style-type: none"> <li>Vibrant Girder</li> <li>Vibrator</li> <li>Vibrator Sensor</li> </ul> 		<ul style="list-style-type: none"> <li>Input voltage: AC220-240V</li> <li>Triple Output Voltage:               <ul style="list-style-type: none"> <li>+24VDC/2A</li> <li>+12VDC/7A</li> <li>+5VDC/7A</li> </ul> </li> </ul> 		<ul style="list-style-type: none"> <li>Effect of deformation on the elastic plate</li> <li>To measure the deformation of elastic plate using strain gauge</li> <li>Effect of temperature variation on the strain gauge</li> <li>To measure the temperature of the elastic plate using thermocouple type K</li> <li>To measure the vibration of vibration plate using vibrator sensor</li> <li>To measure the output of LVDT sensor</li> </ul> <p><b>*This module is design as a whole unit but only can be conducted together with our Computer controlled based unit GOTT-MSFSS-CCBU.</b></p>			

## Manuals :

- (1) All manuals are written in English.
- (2) Model Answer
- (3) Teaching Manuals

## General Terms :

- (1) Accessories will be provided where applicable.
- (2) Manual & Training will be provided where applicable.
- (3) Design & specifications are subject to change without notice.
- (4) We reserve the right to discontinue the manufacturing of any product.

## Warranty :

2 Years

## ORDERING INFORMATION :

ITEM	MODEL NUMBER	CODE
PID PROCESS CONTROLLER WITH COMPUTER CONTROLLED BASE UNIT(MODULAR SYSTEM SENSORS)	GOTT-MSFSS-CCBU	624-810
MODULAR SYSTEM SENSORS TEMPERATURE TEST MODULE	GOTT-MFSS-TTM2	624-801
MODULAR SYSTEM SENSORS PRESSURE TEST MODULE	GOTT-MSFSS-PTM3	624-802
MODULAR SYSTEM SENSORS FLOW TEST MODULE	GOTT-MSFSS-FTM4	624-803
MODULAR SYSTEM SENSORS VIBRATION LEVEL TEST MODULE	GOTT-MSFSS-VLTM1	624-800

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