TIMERS • COUNTERS • MOTOR PROTECTION • PROCESS MONITORING

PRODUCT SELECTION GUIDE

AUTOMATIC TIMING & CONTROLS

ATC DIVERSIFIED ELECTRONICS

TOP SELECTIONS FROM ATC

SENSERT

Monitor your data with ease anytime, anywhere with affordable, cloud-based process monitoring and alerts.

MPA2 MOTOR PROTECTION ANALYZER

Protect electric loads, motors, and other vital equipment from failure or damage due to common current and voltage faults.

VCFP96M MULTIFUNCTION METER

Improve power usage and management and increase productivity with this easy-to-use multifunction meter.

175MU/MD DIN RAIL TIMERS

Save space, time, and hassle with these slim, reliable multifunction timers.

ARA/B/C/D SERIES

Increase equipment life and performance with this series of Alternating Relays.

ATC560 TEMPERATURE CONTROLLER

Measure and regulate temperature with ease in a variety of applications.

SPM SERIES

Save downtime by monitoring pumps and detecting leaks sooner with the SPM Series.

385AR TIMER COUNTER

Experience accurate and repeatable timing and counting with this rugged digital timer/counter.

MAR MOTOR AUTO-RESTART RELAY

Eliminate costly and time-consuming manual restarts and improve efficiency with the MAR Series.

SLA SERIES

Prevent premature motor or equipment failure and downtime with this cost-effective three-phase monitoring relay.

ATCPWR Industrial Power Supplies

Compact design that offers built-in protection against short-circuit, overload, overvoltage, and over-temp conditions.

DIN Rail-Mount Phase Monitors

Protect industrial machinery from premature failure with these space-saving three-phase monitors.

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PHASE VOLTAGE MONITORS

DIVERSIFIED ELECTRONICS

Model / Series	SLU-100/0200/0201/600	DPR175A, DPR350C	MPA2	SLA
Protection	Phase Loss, Under Voltage, Over Voltage, Phase Unbalance, Frequency Shift, Phase Sequence, Phase Shift, Rapid Cycling Lockout	Under Voltage, Over Voltage, Under Frequency, Over Frequency, Asymmetry, Phase Failure, Phase Sequence	Overload/Undercurrent, Overvoltage/Undervoltage, Frequency Shift, Voltage/Current Unbalance, Single Phasing, Phase Reversal, Locked Rotor	Phase Loss, Under Voltage, Phase Reversal
Nominal Line Voltages Phase to Phase 50/60 Hz	208, 220, 240, 380, 415, 440, 460, 480, 575, 600 VAC	208, 220, 240, 380, 415, 440, 460, 480, 575, 600 VAC	208, 220, 240, 380, 415, 440, 460, 480, 575, 600 VAC	120, 208, 220, 240, 380, 415, 440, 460, 480, 575 VAC
Reset	Automatic, Manual	Automatic, Manual	Automatic, Manual	Automatic, Manual
Contact Configuration	SPDT, DPDT	SPDT x 2	SPST N/O x 2	SPDT, DPDT
Contact Rating Resistive	10A at 240 VAC	N/O 5A at 250 VAC N/C 3A at 250 VAC	10A at 277VAC, B300	10A, 5A, 3A
Mounting Style	DIN Rail, Surface Mount	DIN Rail Mount	DIN Rail, Surface Mount	Plug-In, Surface Mount
Approvals	UL, CE	UL, CE	UL	UL, CSA

*For Gen App.- See SLU-0200

VBA	PBE	SLD	SLM	UOA
Under Voltage and Over Voltage	True RMS Voltage Band Monitor Under & Over Voltage Phase Sequence	Phase Unbalance, Phase Loss, Under Voltage, Phase Reversal	Phase Loss, Under Voltage, Over Voltage, Phase Unbalance, Frequency Shift, Phase Sequence, Microprocessor Based	Single Phase Under Voltage Monitor
12, 24, 28, 48, 110 VDC 24, 120, 208, 230, 240 VAC	120, 208, 220, 240, 380, 415, 440, 460, 480, 575 VAC	120, 208, 240, 380, 440, 480 VAC	120, 208, 220, 240, 380, 415, 440, 460, 480 VAC	12, 24, 48, 110, 220, 240 VDC 24, 120, 208, 240 VAC
Automatic	Automatic	Automatic	Automatic Manual	Automatic
SPDT, DPDT	DPDT	SPDT, DPDT	DPDT	DPDT, SPDT
5A or 10A by Model No.	10A at 240 VAC	10A, 5A, 3A by Model No.	3A at 600 VAC	5A or 10A by Model No.
Plug-In, Surface Mount	Surface Mount	Plug-In, Surface Mount	Surface Mount	Plug-In, Surface Mount
CSA, cURus	UL	UL	UL, CSA	UL, CSA

CURRENT MONITOR RELAYS

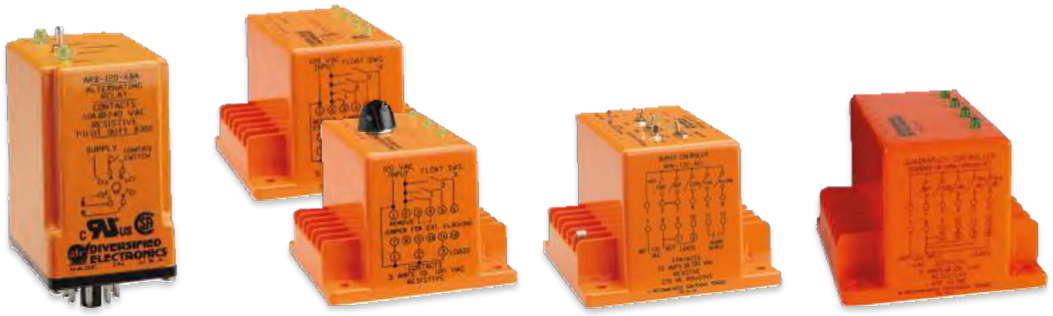
DIVERSIFIED ELECTRONICS




Model / Series	CLB	CMB	CMG	CMU
Protection	3 Phase Current Unbalance and Over Current	AC Go/No-Go Monitor	AC Go/No-Go Monitor	AC Under Current
Control Voltage	120 VAC	24, 120 VAC 24 VDC	Self Powered	24 or 120 VAC/DC
Adjustable Current Trip Point	1.0 to 5.0, 2.0 to10	1 to 10 Amps fixed	20-36 Amps fixed (CMG-0100), 2 Amps fixed (CMG-0101)	.05 to .25, 0.2 to 1.0, 1.0 to 5.0, 2.0 to 10.0, 4.0 to 20.0
Range (Amps)	15 Amps Continuous	Up to 50 Amps	400 Amp (CMG-0100) 200 Amp (CMG-0101)	Up to 25 Amp Max
Reset	Automatic, Manual	Automatic	Automatic	Automatic
Contact Configuration	SPDT	SPDT	SPST N/O	DPDT
Contact Rating Resistive	10A at 240 VAC	10A at 240 VAC	5A Relay or 1A S-State	10A at 120 VAC
Mounting Style	Surface Mount	Plug-In	Style D Surface Mount	Plug-In, Surface Mount

ALTERNATING RELAYS

DIVERSIFIED ELECTRONICS



Model / Series	ARA, ARB ARC, ARD	ARA	ARM	ARM
Number of Loads Sequenced	2 (ARB and ARD w/ Special Function)	Duplexor, Triplexor, Quadraplexor	Integrated Duplex Controller	Triplex and Quadraplex, Alternating Controller
Control Voltage	24, 120 VDC 24, 120, 208, 240 VAC	24, 120 VAC	24, 120 VAC	24, 120 VAC
Expandable	——	Yes with models ARA-120-AME and ARA-120-ANE	——	——
Contact Configuration	SPDT, DPDT, DPDT Crosswired	Control Switch	(3) SPST N/O	SPST N/O
Contact Rating Resistive	10A at 240 VAC	5A at 120 VAC	10A at 120 VAC	5A at 120VAC
Mounting Style	Plug-In	Surface Mount	Surface Mount or Panel Mount, Depending on Model	Surface Mount
Approvals	UL, CSA	UL, CSA Model AFE	UL 913 HAZLOC	UL 913 HAZLOC
Application / Notes	Duplexor SOSO (ARC-ARD)	Special Functions	Intrinsically Safe Inputs, SOSO Output	Intrinsically Safe, SOSO, FOFO Output

ISOLATED SWITCHES / SEAL FAILURE ALARM

DIVERSIFIED ELECTRONICS

Model / Series	ISO	ISO, ISL Latching Output	SPM
Protection	Single Channel Isolated Switch	Multiple Channel 2,3,4 Isolated Switch	Single & Dual Channel Seal Failure Alarm, Dual Function - Failure and Temperature
Control Voltage	24, 120 VAC	24, 120 VAC	120 VAC
Control Switch	16 VDC Open Circuit Voltage 200 µA Short Circuit Current	6.2 VDC Open Circuit Voltage 10 µA Short Circuit Current	9VDC or 12VDC Dependent on Model (SPM120AEE is 12VDC, has both probe & temp switch operation)
Contact Configuration	SPST N/O	SPST N/O	DPDT, SPST N/O, SPDT
Contact Rating Resistive	5A at 120 VAC	5A at 120 VAC	5A,10A at 120 VAC
Mounting Style	Plug-In, Surface Mount	Surface Mount	Plug-In, Surface Mount
Approvals	UL 913	UL 913	UL
Application / Notes	Hazardous Location	Hazardous Location	Submersible Pump

POWER ALERTS

DIVERSIFIED ELECTRONICS

Model / Series	VCFP96M	BFA	GFD
Protection / Operation	Energy Meter	Visual Fuse Status Indicator	3 Phase Ground Fault Display
Nominal Voltage	Voltage PT Primary: 100V-500kVAC PT Secondary: 100-500 VAC (L-L) Measured: 11-300 VAC (L-N), 19-519 VAC (L-L) Current CT Primary: 1:5A to 1:10kA CT Secondary: 1:5A Measured: .011-6A	Nominal Voltage 208-600 VAC +/- 10% Phase to Phase 50/60 Hz	Nominal Voltage 208-600 VAC +/- 10% Phase to Phase 50/60 Hz
Max. Rated Voltage	300 VAC (L-N), 519 VAC (L-L)	Maximum Continuous 660 VAC Phase to Phase	Maximum Continuous 660 VAC Phase to Phase
Terminations	Screw Terminals	(6) 2ft 18 AWG 600V	(4) 2ft 18 AWG 600V
Notes	RS-485/MODBUS RTU and Pulse Output 120 VAC Control Voltage	All Fuses UL Class H, J, K, R, RK	Avoid Potential 2nd Ground Fault

INDUSTRIAL TIMERS

AUTOMATIC TIMING & CONTROLS




Model / Series	405AR	405C	407C	409B
Mode of Operation	On Delay / Interval	On Delay / Interval	On Delay / Interval Signal Off Delay	Interval / Push Button Start
Type	Analog	Analog	Analog	Analog
Operating Voltages	20-240 VAC & 12-240 VDC	24-240 VAC & 24 VDC 12 VDC only 24 VDC only	24-240 VAC & 24 VDC 24 VDC only	24-240 VAC & 24 VDC 12 VDC only
Time Range	.05 Sec to 30 Hrs	.05 Sec to 50 Hrs	.05 Sec to 50 Hrs	.05 Sec to 50 Hrs
Contact Configuration	DPDT	DPDT, Instantaneous	DPDT	DPDT
Contact Rating Resistive	10A at 250 VAC/8 pin 5 A at 230 VAC/Term.	10A at 250 VAC	10A at 250 VAC	10A at 250 VAC
Mounting Style	1/16 DIN 8 Pin or Screw Terminal	1/16 DIN 8 Pin	1/16 DIN 8 Pin	1/16 DIN 8 Pin
Approvals	UL, CE	UL	UL	UL

417B	422AR	425A	328E	339B
True-Off Delay	Repeat Cycle Off First, On First	On Delay / Time Up / Time Down	On Delay / Interval / Signal Off Delay	On Delay / Interval
Analog	Analog	Digital / Display	Analog	Analog
24-240 VAC & 24 VDC	20-240 VAC & 12-240 VDC	120-240 VAC 120 VAC	24-240 VAC & 24 VDC	120 VAC 240 VAC 24 VAC/DC or 12 VDC
.1 Sec to 10 Min	.05 Sec to 10 Hrs	.001 Sec to 999 Hrs	.05 Sec to 10 Hrs	.075 Sec to 10 Hrs
DPDT, SPDT	DPDT	DPDT, Instantaneous	DPDT	DPDT
10A at 250 VAC	10A at 250 VAC/8 pin 5 A at 230 VAC/Term.	5A at 250 VAC	10A at 250 VAC	10A at 250 VAC
1/16 DIN 8 or 11 Pin	1/16 DIN 8 Pin or Screw Terminal	1/16 DIN 8 Pin	1/8 DIN 11 Blade Pin	36mm 8 Pin
UL, CE	UL, CE	UL, CE, CSA	UL, CE, CSA, FM	UL, CE, CSA, FM

INDUSTRIAL TIMERS

AUTOMATIC TIMING & CONTROLS

Model / Series	365C	355C	652, 653, 655	CP
Mode of Operation	On Delay / Interval	On Delay / Interval	On Delay, Interval Reverse Start Delay, Repeat Cycle, Timer/Counter	Percentage Timer
Type	Digital Prog. Display	Digital / Display	Digital / Display	Dial Adjusted
Operating Voltages	120 VAC 240 VAC 24 VAC or 24 VDC	120 VAC 240 VAC	120 VAC 240 VAC	120 VAC 240 VAC
Time Range	.01 Sec to 999 Hrs	.01 Sec to 999.9 Min	.001 Sec to 199 Hrs	.9 Sec to 60 Min
Contact Configuration	DPDT, Instantaneous	DPDT, Instantaneous	2-DPDT, Delayed 2-DPDT, Instantaneous 1-SPDT, Instantaneous	SPST
Contact Rating Resistive	7A at 120, 240, 24 VAC	5A at 120 VAC	7A at 240 VAC	20A at 1/2hp 120 VAC
Mounting Style	72mm Panel Mount	72mm Panel Mount	Plug-in Case / Panel Mount	Panel Mount
Approvals	UL	UL	UL	UL





304GX	425AR	385AR	175MU/MD	7DT
Percentage Timer	Multi-Function Time Up / Time Down	Multi-Function Time/Count	Multi-Function	Weekly Timer
Dial Adjusted	Dual Digital Display	Dual Digital Display	MU: Dial Adjusted MD: Dual Digital Display	2 Channel Display
120 VAC	90 to 270 VAC/DC 50/60 Hz	90 to 270 VAC/DC 50/60 Hz	20 to 240 VAC/DC 50/60Hz	12-240 VAC/DC
15/30/60/120 Sec/Min	0 to 9999 Sec/Min/Hrs	Counter -999 to 9999 Timer - 0 -9999 Sec/Min/Hrs	MU: .1 Sec to 3 Hrs MD: .1 Sec to 9 Hrs, 59 Min	Daily, Weekly
SPST	SPST x 2, Instantaneous	SPST N/O x 2	SPDT	SPDT x 2
10A at 120 VAC	5A at 230 VAC	5A at 230 VAC	MU: N/O 5A, N/C 3A at 250 VAC MD: 8A at 250 VAC	16A at 250 VAC
Panel Mount	1/16 DIN Screw Terminal	1/16 DIN Screw Terminal	DIN Rail Mount	DIN Rail Mount
UL, CE	cURus, CE	cURus, CE	MU: UL LISTED, CE MD: UL LISTED	——

INDUSTRIAL COUNTERS

AUTOMATIC TIMING & CONTROLS




Model / Series	366C	356C	354C	5710A/D
Mode of Operation	Count Up. Down, Stop & Go	Count Up	High Speed Counter w/ 24VDC Supply	Count Up, Timer
Type	Digital Display Knob Adjustable	Digital / Toggle Lever	Digital / Toggle Lever	Digital Display
Operating Voltages	120 VAC 240 VAC 24 VAC or VDC	120 VAC 240 VAC	120 VAC 240 VAC	5710A: 90-270VAC/DC 5710D:12-24VDC
Counting Range	1 to 99,990	1 to 99,990	1 to 99,990	1 to 999,999
Contact Configuration	DPDT, Instantaneous	DPDT, Instantaneous	SPDT	(None, Indicator Only)
Contact Rating	7A at 120, 240, 24 VAC	5A at 120 VAC	5A at 120 VAC	(None, Indicator Only)
Mounting Style	72mm Panel Mount	72mm Panel Mount	72mm Panel Mount	Panel Mount
Approvals	UL	UL, CE	UL, CE	CE

CASE STUDY (MAR Series Motor Auto-Restart Relay)

ATC Diversified Electronics Develops Effective, Inexpensive Solution for Manual Restarts Following Power Interruptions and Undervoltages

BUSINESS CHALLENGE: The $1 Million Problem

A major operator of oil and gas refineries approached ATC Diversified Electronics to engineer a solution to the costly problem of critical application restarts after power service undervoltages (defined as a power drop within 90% of peak) and interruptions. Refineries rely on a complex series of pumps, numbering in the hundreds, to move material through the refining process. When even a small power blip happens, each pump must be restarted manually. ATC's customer experienced approximately 12 such incidents each year, at a total cost of approximately $1 million annually.

SOLUTION: Fix the Problem, but Within Set Parameters

The customer requested more efficient restarts; however, several technical parameters also had to be met. Restarts had to be staggered, as simultaneous occurrences would place an undue burden on the power capacity. The solution had to address an undervoltage or power interruption period no greater than 4, 6, or 10 seconds in duration. An overload neutral disconnect feature was needed so as not to interfere with the functioning of a thermal overload relay. Finally, the device needed to be in a plug-in format and easily changeable.

RESULT: Introducing the MAR Series Motor Auto-Restart Relay

In just four months, the ATC team developed the new MAR Series Motor Auto-Restart Relay. Following a momentary drop or interruption of the control voltage, it bypasses a motor's start switch to re-energize the starter coil. When the control voltage drops below the trip point while the motor is running, the delay begins. If the control voltage returns before the delay expires, the adjustable restart delay begins. Upon expiration of the restart delay, the internal relay energizes for the duration of the output interval, providing a restart. When multiple restart controllers are used in the same facility, the adjustable restart delay allows a customized restart sequence, limiting the maximum in-rush current. As an additional safety feature, if the control voltage fails for longer than the time delay or the motor was not initially running at the time of failure, the unit will not restart the motor.

FUTURE: Beyond Oil & Gas

The MAR Series can help a wide range of industries beyond oil and gas— any industry that has a production process with critical components, as long as the process is not in a hazardous area and doesn't have permissive circuits. The ATC team has added a range of output interval restart ranges, restart delay ranges, an option for an O/L relay neutral disconnect feature, and the choice of 8-pin or 11-pin plug-ins. For an industrial facility, the MAR Series gets power to critical applications in a restart environment, improves process uptime, and is a highly cost-effective solution that can save hundreds of thousands of dollars, or even millions, each year.

NEW! ATCPWR Industrial Power Supplies

Protect your critical components against short-circuit, overload, over-voltage, and over-temperature conditions, with efficiencies ranging from 87% to 93.5% @ 230 VAC.

ATCPWR Industrial 24 VDC DIN Rail-Mount Power Supply series comes complete with built-in active power factor correction. Compact space-saving design models ranging from 60 watts to 480 watts and available with AC universal supply voltage (90-264 VAC) are cULus listed / UL 508 approved.

NEW! VCFP96M Multifunction Meter

Improve productivity with power quality management.

This easy-to-use device detects where power is being wasted. Facility managers gain a competitively priced yet packed-with-features solution to their power management needs. It's ideal for chemical and manufacturing plants with a power usage of at least 10,000 kWh per month.

The VCFP96M Multifunction Meter permanently installs into a panel box. Output specifications include pulse output and RS485 Modbus RTU communication protocol compatible with PC, PLC, RTU, data loggers, and SCADA programs. The easy-to-read backlit LCD display includes four rows and a convenient bar graph.

NEW! MPA2 Motor Protection Analyzer

Are you looking to prevent costly motor repairs and downtime? The MPA2 is a micro-controlled three-phase Motor Protection Analyzer specifically designed to protect electric loads and motors from failure and damage due to common current and voltage faults.

The MPA2 constantly supervises current and voltage values. When any harmful condition occurs, the output connection is deactivated until the fault disappears, power line conditions return to an acceptable level and the motor has been totally cooled.

When you use the MPA2 Motor Protection Analyzer, you are working with the best solution to protect your most important investments.

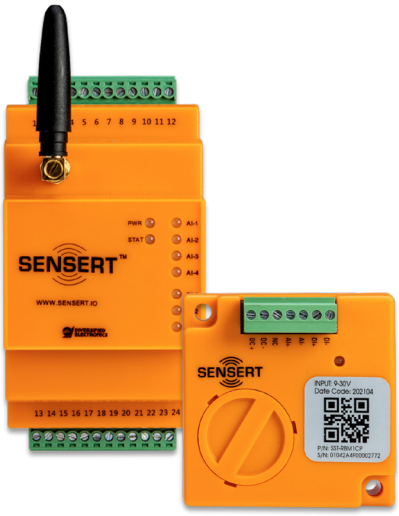
NEW! Current Transformers

See significant cost savings without sacrificing performance.

Need a replacement for your outdated current transformer? Check out the latest model from ATC Diversified. Reduce or multiply an alternating current or extend the range of current monitors easily with these CTs. This new design serves as a direct replacement for older models without a hefty price tag.

Our Current Transformers:
- Measure alternating currents in a power system
- Produce a proportional alternating current
- Ensure protection against abrasive substances

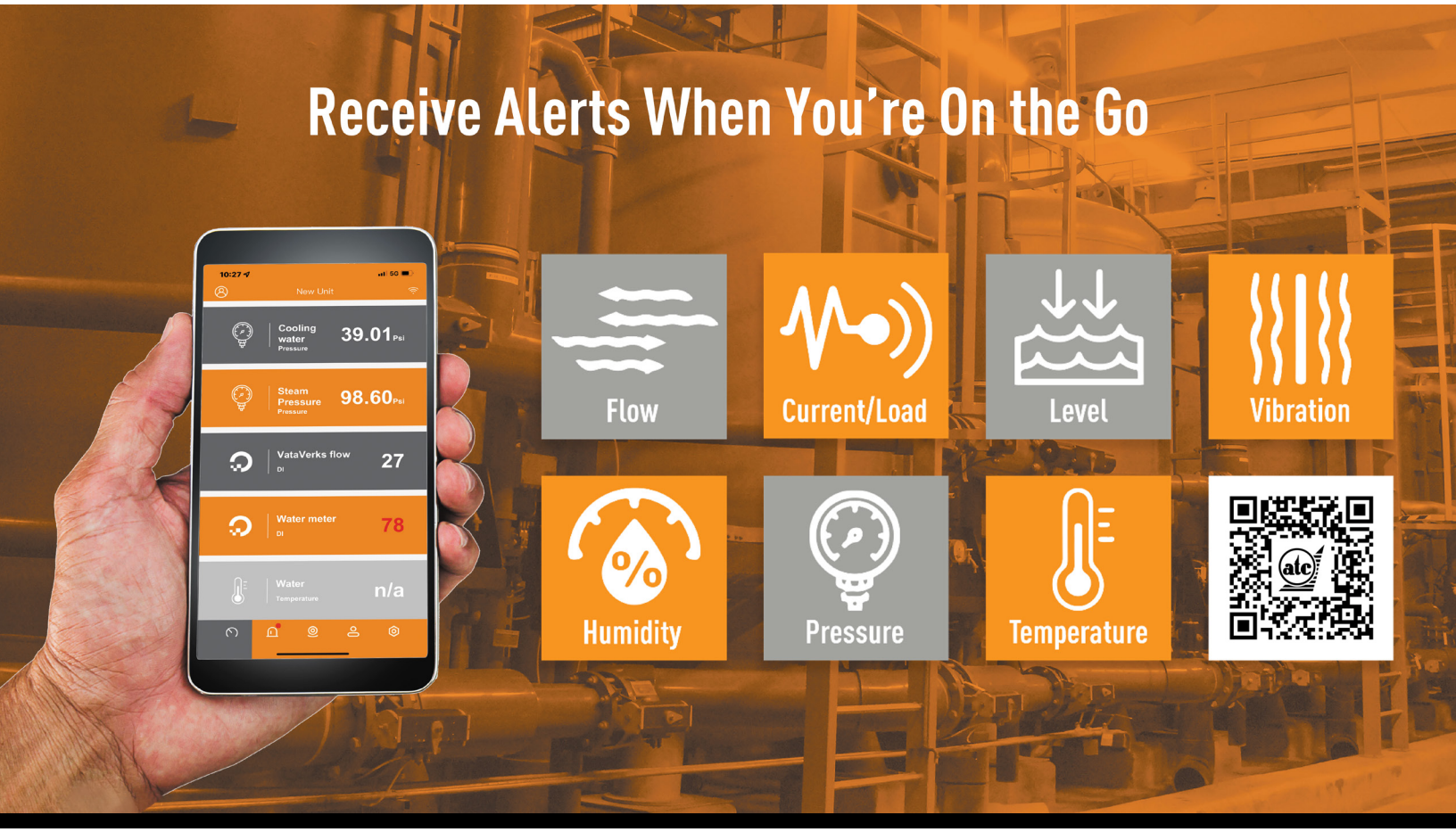
NEW! SENSERT Remote Monitoring & Alerts



Real-time data monitoring anywhere, anytime.

Need a convenient way to monitor process activity? SENSERT allows you to monitor a variety of sensors, such as temperature, humidity, vibration, pressure, etc., and then sends alerts based on customized thresholds. This helps reduce overall maintenance costs and emergency repairs by monitoring your equipment and relaying important data back to you quickly and efficiently.

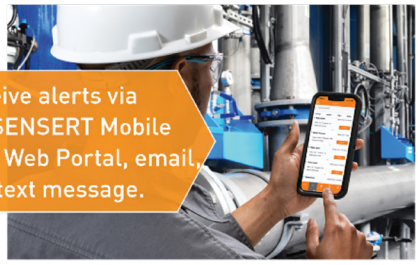
SENSERT offers:
- Wi-Fi Base Unit, Cellular Base Unit, Remote I/O
- Affordable remote process monitoring & alerts
- Reduced costs (maintenance, labor, downtime, etc.)
- Peace of mind, keeping you updated on activity



The SENSERT Ecosystem

Cloud connectivity for fast and secure data accessibility.

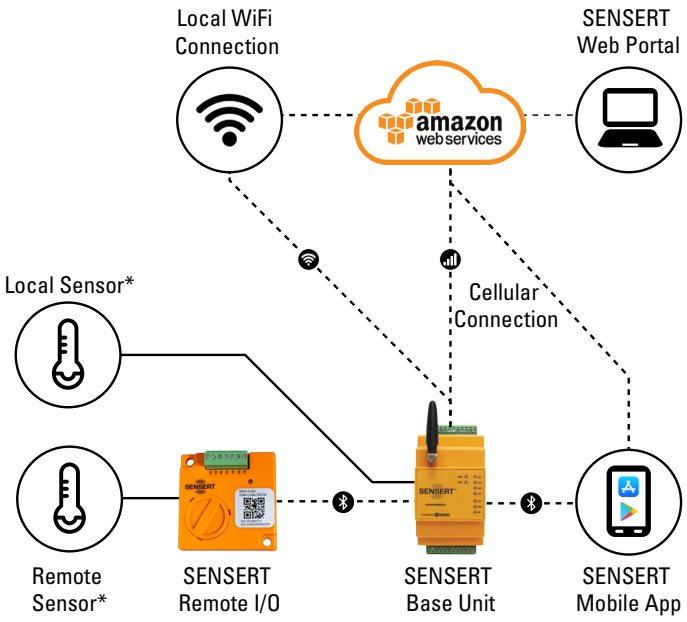
amazon web services



SENSERT Base Unit
- Power Supply: 5-30 VDC
- Analog Input: 4 [0-20 mA, 4-20 mA, 0-5 V, 0-10 V]
- Digital Input: 2 [Dry Contact]
- Digital Output: 1 [Relay]
- WiFi (Pictured) or Cellular Cloud Communication

SENSERT Remote I/O
- Power Supply: 12-24 VDC or battery [CR2450]
- Analog Input: 1 [0-20 mA, 4-20 mA, 0-5 V, 0-10 V]
- Digital Input: 1 [Dry Contact]
- Bluetooth LE or Mesh Communication

***Sensor**
Any type of sensor with analog output of 0-20 mA, 4-20 mA, 0-5 V, 0-10 V



Ordering Information

Product	Product Number	Features
SENSERT WiFi Base Unit	SST-BWF1HH	• WiFi Cloud Communication and Wireless Device Communication • Hardwired Power • Hybrid DIN Rail and Panel Mount
SENSERT Cellular Base Unit	SST-BCA1HH	• Cellular Cloud Communication and Wireless Device Communication • Hardwired Power • Hybrid DIN Rail and Panel Mount
SENSERT Remote I/O Standard	SST-RBM1CP	• Bluetooth LE Cloud Communication and Wireless Device Communication • Combination Battery and Hardwired Power • Panel Mount
SENSERT Remote I/O Repeater	SST-RBM1HP	• Bluetooth Mesh Cloud Communication and Wireless Device Communication • Hardwired Power • Panel Mount

ATC: Two Divisions, One Solution

ATC's two divisions, Automatic Timing & Controls and Diversified Electronics, combine to offer industrial timing controls, motor protection, and electrical safety products. We offer a proven product—rugged and built for demanding applications; millions of inventoried products stocked for immediate shipment; and experienced application engineers who help you trade away unneeded and expensive features to maximize ROI. Our standard 10-year warranty applies to all ATC/DEI products. We are the experience you can count on.

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