

SALES LINE: (800) 862-2875

3-Phase Monitors

3-Phase Monitors continuously monitor for phase loss, phase reversal, low voltage and, on select models, over voltage. The monitors feature a phase-angle and voltage sensing circuit to detect phase loss even when regenerative loads cause little measurable voltage reduction between phases.

On most models, an internal relay is normally energized, dropping out on a fault condition. All models feature automatic reset (manual reset available on some models). Standard voltage ranges are 120, 208/240, 480 and 575VAC, 60Hz and 380VAC, 50Hz. Options include trip delays, restart delays and DPDT relays. Special voltage and frequency ranges are available on some models.

Model 158B (R)

(R) 5 minute restart delay

Model 246

Over/under voltage sensing

Model 2500



Energizes on fault condition 7 versions for voltage ranges of 120-600VAC

Model 2501



Energizes on normal conditions Same voltage ranges & saftey standards as Model 2500

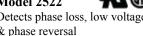
Model 2002Y

Detects unbalanced voltages Made for Wye Systems only

Model 252

SPDT plus a normally open contact

Model 2522



Model 253



Voltage ranges are 208VAC to 480VAC, 50/60Hz Socket mounting

Model 2532

50Hz & 60Hz versions

71) (11)

Detects phase loss, low voltage, & phase reversal DPDT output

Reverse phase relay

Reverse phase only



Model 257

Socket mounting Top Adjust 120-480VAC

711 (1)

Model 258

Socket mounting Side Adjust 120-480VAC

Model 2581

LED status indicator Small size Non-adjustable

Model 259

Contacts rated for 600VAC Adjustable trip delay & restart delay timers Shunt trip applications

Model 263

Surface mounting

Model 264

Isolated NC & NO contacts Adjustable trip delay timer

Model 2642



Trip delay timer Can be manually reset

Model 2644



Trip delay timer Optional restart delay (R) version DPDT relay contact

Model 265



Adjustable restart delay Automatic reset HVAC or compressor applications

Model 2652



HVAC or compressor applications Adjustable trip & restart timers Can be manually reset

Model 269





Over/under voltage sensing Trip delay timer

Transformers & Transducers

Our current transformers are available in a variety of amp ranges and are available in single phase and 3-phase models.

Our AC transducers are designed to accept 0-5 amp AC current input and provide proportional DC current or DC voltage output.

Model 278



AC current transducer 115VAC or 230VAC Proportional 4-20mA output

Model 2780



0-5 amp input 0-10VDC output

Surge Protective Devices (SPD)

New to Time Mark in 2009, our Surge Protective Devices (SPD) Series meet the new UL 1449 3rd Edition requirements and are designed to protect sensitive equipment from harmful effects of transients and RFI/EMI interface. 20kA or 40kA ratings.

Models are configured for either parallel or series installation or can be DIN rail or wall mounted.

Model 276A Current ratios of 10:5 amps

to 40:5 amps

Model 276B



Current ratios of 50:5 amps to 1200:5 amps

Model 276B-3



3-Phase current transformer Isolated outputs





UL 1449 3rd Edition RECOGNIZED

Voltage & Frequency Monitors

Time Mark Voltage Monitors detect voltage levels above or below the selected set point. Voltage Band Monitors energize relays between set points.

Model 16 Series Over/Under Voltage **Band Monitor** Adjustable Trip & Restart Delays

Model 160B (R)

Voltage sensor (R) 5 minute restart delay

Model 260

AC and DC versions

Model 2601

AC and DC versions Top Adjust Standard relay configuration

Model 2602

Fast Dropout

Model 2621

AC and DC versions Pickup, dropout

Model 2628 & 2629

AC or DC from 15 to 260V 2629 has DPDT contacts

Model 2681

AC and DC versions Voltage Band Monitor

Model 292

Frequency Band Monitor



Alternating Relays



Alternating Relays are used to sequence pumps, compressors, etc., to insure that each receives an equal amount of run time. Duplex (2-pump) versions are socket mounted, triplex (3-pump) and multi (4-pump) versions are in surface mount enclosures.

Model 261

Duplex alternator 3 versions; S, D, DX

Model 261T TIME

Toggle lock-in ST. DT. DXT

Model 261XBXP (R)

Replaces mechanical types Uses 12-pin socket

Model 2611

Duplex alternating controller Sequence on-simultaneous off operation

LED's for input/output status Control switch fault detection

Model 271

Triplex alternator only

Model 471

Selectable for 2-, 3-, or 4-pump operation

Model 441

Single/Duplex/Triplex/ Quadraplex operation First-on, First-off operation

Model 442

Single/Duplex/Triplex/ Quadraplex operation Has off level Sequence-on, Simultaneous-off operation

Accessories

Model 108A

Phase sequence and phase indicating lamps

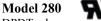
Model 108B

Indicates ABC or CBA phase rotation

Model 108C

Connects directly to your motor Positive identification of motor rotation

Accessory items are designed to enhance or expand our products. They include general purpose relays, sockets, and vibration clamps.



DPDT relay AC and DC versions

Model 281

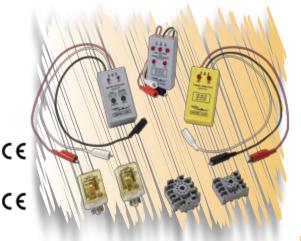
3PDT relay AC and DC versions

51X016 11-Pin Socket **AL () (E**

Rated to 300VAC Surface or DIN rail mounting

51X120 8-Pin Socket **W (((**

Rated to 600VAC, 10 amps Surface or DIN rail mounting



Current Monitors

Current Monitors detect over-current, undercurrent, or current unbalance on single-phase or 3-phase lines. All accept direct currents up to 5 amps; current transformers are used when current exceeds 5 amps. Models available for socket mounting, surface mounting or panel mounting.

Model 272

Detects 3-phase current unbalance Adjustable trip delay timer

Model 2722 **31 (f)**

Machine tool case Detects 3-phase current unbalance

Selectable automatic or manual reset

Model 273 Socket mounted Detects low or high current Adjustable set point

Model 2732

Machine tool case Fail-safe over or under sensing with trip delay

Model 2734

Current sensitive relay Adjustable start-up and trip delays

Model 274

3-phase under or over current sensor Automatic or manual reset

Model 2742

3-phase over or under current sensing

Model 2744

3 Phase over current Startup inhibited Instantaneous Trip

Model 275

Panel mounted over current monitor Trip delay timer



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Pump & Liquid Level Controls

Model 403

Duplex level controller Provides alternation of pumps

Model 4042

Liquid level controller 4 set points

Model 4052

Pump-Down controller for duplex pump alternation

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Model 4062

Pump-Up controller for duplex pump alternation

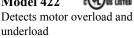
Model 4082

c **T**IIS Liquid level controller 8 set points

Model 42A

Controls 2 or 3 pumps with a 4-20mA input or 2 pumps with a 4-20mA input and backup floats: Graphic display shows current depth, set-points, date/time and alarm status; Communications capable

Model 422



Trip and restart delays Use with 1-phase or 3-phase pumps

Model 450

Pressure transducer 0-15 psi input 4-20 mA output

Model 460

Switch-to-Loop Converter Less expensive than a transducer Works with float switches Outputs 4-20mA loop

Model 42X

Expands the control capabilities of the Model 42A Four alarm inputs per pump are provided

Pump and Liquid Level Controls protect pumps and provide liquid level control for pumping systems. Controllers monitor levels using transducers, float switches and bubbler-type sensors. Different versions and combinations can provide alternation, HOA controls, run time meters, and alarm outputs. The newest versions have communications capability.



SPECIAL CONTROLS

Time Mark manufactures many types of specialized devices. These include Capacitor Trip Devices, Motor Load Monitors, and Two-Hand Control Modules.

Model 295

Model 410

Capacitor Trip Device Operates shunt trip breakers Available for 120VAC or 240VAC Push-button simulator/tester

Auto-Charged Capacitor Trip Device with battery Available for 120VAC or 240VAC (Voltage x Current x Power Factor)

Model 412

Automatic Reverse Controller

Model 421

Motor Load Monitor Monitors true power Adjustable trip and restart delays

C(YL)US LISTED (SP

Model 553

Undervoltage Control Re-Acceleration Relay Allows momentary power outage without causing reset condition

Model 850

Two-Hand Control Module AC or DC versions Socket mounting Installs into existing control panel



Time Delay Relays

Time Mark Corporation offers a variety of Time Delay Relays under our "Signaline" brand.

33X are knob adjustable and come in 4 timing ranges: 1-10, 1-60, 1-180, & 1-300 seconds. The maximum time on a knob adjustable timer is 300 seconds/5 minutes.

36X are settable by dipswitches. The timing ranges are 0.1-102.3 seconds, 1-1023 seconds (17 minutes, 3 seconds), and 1-1023 minutes (17 hours, 3 minutes).

38X are also settable by dipswitches but have timing and timed out LED's. Timing ranges are the same as the 36X.

There are three multifunction timers: **300, 301, 310**; which have time ranges set by a dipswitch; and a pontentiometer to set the time within the range. Maximum time is 64 minutes.



KNOB ADJUST

Model 330 Operate Delay Relay

Model 331 Release Delay Relay

Model 332 Interval Timer

Model 338 Recycle Timer

Model 339 On/Off Delay True off delay

PROGRAMMABLE

Model 300

Universal power supply Multiple timing functions Wide voltage range .15 sec to 64 min

Model 301

Same as Model 300 with DPDT contacts

Model 310

Programmed by jumpers .15 sec to 64 min

DIP-SWITCH SET

Model 360 Operate Delay Relay

Model 361 Release Delay Relay

Model 362 Interval Timer

Model 363

Operate Delay with Instant Contact

Model 368 Recycle Timer



Model 380

Operate Delay Relay Timing and Timed Out LED's

Model 381 Release Delay Relay

Timing and Timed Out LED's

Model 382 Interval Timer Timing and Timed Out LED's

CUSTOM ELECTRONIC DESIGN & PRODUCTION

Don't see what you need? If we do not already build a device with the voltage, frequency, or packaging configurations you require, we will be happy to design one for you.

Time Mark also custom designs and manufactures a variety of special control devices under private label to OEM customers. Some are variations of existing Time Mark products, while others have unique designs.

Contact us or visit our website and fill out the OEM form for more information about the design and specifications you are needing. Let us turn your ideas into reality.

Visit <u>www.Time-Mark.com</u> today!



Unconditional 5-Year Warranty For All 3-Phase Monitors and Socket Mounted Products

OR ALL 3-PHASE MONITORS AND SOCKET MOUNTED PRODUCTS

Time Mark Corporation offers a 5-year unconditional warranty on all of our 3-Phase Monitors and socket mounted products. See Time Mark Terms and Conditions of Sales for more detailed information.

This Short-Form Catalog is intended to introduce you to Time Mark products. It is not intended to contain complete specifications about our products. Complete product literature is available on request.

For more information, please contact the Time Mark Sales Department at (800) 862-2875, Monday through Friday, 8 a.m. to 5 p.m., CST. You can also visit our website to view more details on Time Mark products and services.

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