

# Product Catalogue Digest Version

## □ PROTECTION RELAY

- Various multirelay
- Wide range CT



## □ ELECTRONICS LCD MULTIMETER

- Various electronic multimeter
- Electric power monitoring software

## □ TRANSDUCER

- Small-sized plug-in
- Installation base
- Plug-in
- Alarm setter
- Static detector
- Arrestor for signal/power/induced lightning detection
- Small-sized box
- Small-sized multi AC
- Power saving monitoring
- Electric power monitoring
- Sensor
- Signal processing
- Special
- Rack storage type
- Rack mounting type



## □ POWER GENERATOR DIGITAL CONTROLLER

- Power generator control equipment
- Automatic synchronous
- Synchronous check relay
- Automatic PF controller
- Automatic load sharing



## □ DIGITAL MEASURING INSTRUMENT

- Automatic 3-phase PF controller
- Digital Multimeter
- Highest/Lowest meter & Max. demand meter
- Circuit breaker opening/shutting monitoring display
- Failure display



## □ DIGITAL DISPLAY

- Digital measuring instrument
- Mosaic display (15mm)
- Bar graph meter
- Digital counter
- Digital sounder




## □ ELECTRICAL METER


- Max. demand ampere meter
- Highest/Lowest meter
- Meter relay
- Wide angle load flow PF meter
- Electrical meter




# Product Catalogue Digest Version

## □ PROTECTION RELAY


	<b>DIGITAL MULTIRELAY</b> <span style="float: right;">DMR-F-/B-/S</span>	
	Protection, control and measurement are compacted by DIN size.	
	<p><b>■ FEATURES</b></p> <p>Compacted protection, control and measurement function all in ONE. Makes incoming transfer power equipment intelligently. 4 elements indication simultaneous is possible by large sized LCD. Transducer and communication output (J.NET, Modbus, protocol A) are possible.</p> <p>Three types: DMR-F is for feeder, DMR-B is for bus and DMR-S for secondary.</p>	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 110V, 1A/5A</li> <li>● Output: analog, pulse and communication (option)</li> <li>● Aux. power: DC100/110V, AC100/110V</li> <li>◆ DMR-F: Instantaneous over current, over current and earth direction protection.</li> <li>◆ DMR-B: Under voltage, overvoltage, and earth overvoltage protection.</li> <li>◆ DMR-S: Instantaneous over current, over current and under voltage protection.</li> </ul>


	<b>DIGITAL MULTIRELAY (Wide Range CT Support)</b> <span style="float: right;">DMR-FW</span>	
	Quick earth phase decision by earth fault detection display	
	<p><b>■ FEATURES</b></p> <p>Makes power transformation equipment to intelligent because the multirelay compacting protection, control and measurement all in ONE. To combine with wide range CT, it corresponds to the input rating from 40A to 600A. Transducer and communication output (Modbus) are possible.</p>	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 110V, 1A(0.5A)</li> <li>● Output: analog, pulse and communication (option)</li> <li>● Aux. power: DC100/110V, AC100/110V</li> <li>◆ DMR-FW: Instantaneous over current, over current, earth direction protection.</li> </ul>


	<b>WIDE RANGE CT</b> <span style="float: right;">ENLIA-05</span>	
	It covers the wide range by 1 unit.	
	<p><b>■ FEATURES</b></p> <p>By combining with DMR-FW, it corresponds to wide range input rating from 40A to 600A.</p>	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Max. circuit voltage: 6.9kV</li> <li>● Rating primary current: 600-300A</li> <li>● Rating secondary current: 1A</li> <li>● Rating secondary burden: 0.3VA</li> <li>● Rating over current constant: n&gt;20-16</li> </ul>

# Product Catalogue Digest Version

## □ ELECTRONIC LCD MULTIMETER

	<b>SUPER DIGITAL MULTIMETER</b>	<b>SQLC-110L</b>
	Power monitoring + Preventive by 1 unit. 4 measuring display simultaneously.	
<p>Various kinds of electrical elements such as A, V, DA (demand current), Max DA, W, DW (demand power), Max DW, var, VA, PF, Hz, leak current, harmonic RMS value, distortion ratio, harmonic content in percentage, watt-hour, var-hour by this 110mm*110mm single unit. Various kinds of output as 4 analog circuits output, pulse output, alarm output, CPU abnormal output and communication output compliant with CC-Link, Modbus RTU and Protocol A (RS-485).</p>	<p>■ <b>FEATURES</b></p>	<p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 1 φ 2 W, 1 φ 3 W, 3 φ 3 W, 3 φ 4 W (110V/220V,1A/5A)</li> <li>● Output: analog/pulse/communication (option)</li> <li>● Aux. power: AC85-264V / DC80-143V common or DC20-56V</li> <li>● Withstand voltage: 2,000V</li> </ul>

	<b>SUPER DIGITAL MULTIMETER</b>	<b>SFLC-110L</b>
	An economic type of SQLC-110L, possible to share STOCK.	
<p>Measure and monitor A*3, V*3, DA (demand current), Max DA, W, DW (demand power), Max DW, var, VA, PF, Hz. Selection of backlight ON, OFF, AUTO. Setting of brightness is possible. Energy-saving and Environmental friendly</p>	<p>■ <b>FEATURES</b></p>	<p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Common type of 1 φ 2 W, 1 φ 3 W, 3 φ 3 W</li> <li>● Modbus/Pulse/Contact-outputs (option)</li> <li>● Aux. power: AC 85-264V &amp; DC80-143V</li> <li>● Withstand voltage: 2,000V</li> </ul>

	<b>DC METER RELAY</b>	<b>MRLC-110</b>
	Max. 3 circuits input. Equipped 6-circuit of contact or 4-circuit for communication output	
<p>Voltage or current of DC circuit can be measured for max.3 circuits by 1 unit. Detection function for upper and lower limit of 6 independent systems; Can output the contact point by 6 circuits. Centralized monitoring is possible by adapt the system with communication output.</p>	<p>■ <b>FEATURES</b></p>	<p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Output: alarm, communication (option)</li> <li>● Aux. power: AC/DC 85-143V common or DC20-56V</li> <li>● Withstand voltage: 2,000V</li> </ul>

# Product Catalogue Digest Version

## □ TRANSDUCER

<p>Compatible with CE marking (aux. power source DC24V)</p>	<b>SMALL-SIZED PLUG-IN TRANSDUCER (ONE OUTPUT)</b>	<b>FINE SERIES</b>
	<p>Small-sized, high quality and compatible with JIS Safety Standard</p> <p>■ <b>FEATURES</b>                  Small-sized, high voltage withstands design. Withstand voltage between input, output, aux. power source and outer case is AC2,000V (some is 1,500V) for 1 minute insulation. Constant voltage and constant current output type. Power condition (ON or OFF) is confirmed with LED. Zero span adjustment is possible. Selection from isolator, distributor, thermocouple, resistance temperature, potentiometer, revolution, AC current, voltage transducer, etc.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and others.</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC/DC 80-264V common or DC 24V.</li> <li>● High precision.</li> <li>● Installation to multi-relay base is possible.</li> </ul>	

<p>Compatible with CE marking (aux. power source DC24V)</p>	<b>SMALL-SIZED PLUG-IN TRANSDUCER (TWO OUTPUT)</b>	<b>FINE SERIES</b>
	<p>Small-sized, 2 outputs</p> <p>■ <b>FEATURES</b>                  Compact, high voltage withstands design. With insulated 2 outputs, control and monitoring by one single unit is possible. Withstand voltage between input, output, aux. power source and outer case is AC2,000V (some is 1,500V) for 1 minute insulation. Constant voltage and constant current output type. Power condition (ON or OFF) is confirmed with LED. Zero span adjustment is possible.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and others.</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC/DC 80-264V common or DC 24V.</li> <li>● High precision.</li> <li>● Installation to multi-relay base is possible.</li> </ul>	


	<b>INSTALLATION BASE</b>	<b>FSBS/FWBS/FWBA</b>
	<p>Collective power source type can reduce wiring of power source.</p> <p>■ <b>FEATURES</b>                  There are two types, storable quantity 16 units and 8 units. Choose a storable quantity 8-unit type if there are few transducers (1-output/2-output) to install, or when storage space is limited. Two types, wall mounting and DIN rail mounting are available. A terminal block or a connector can be chosen as the 1st output in accordance with output destination. As for FWBA type, each unit has a power supply built-in individually and comes in ON/OFF with power switch by transducer putting on and taking off.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● For 16-unit, for 8-unit.</li> <li>● For 1-output, for 2-output.</li> <li>● Installation: wall mounting, DIN rail mounting.</li> <li>● Output form: a terminal block or a connector (only for 1<sup>st</sup> output).</li> <li>● Collective power source.</li> <li>● Withstand voltage: 2,000V (Depends on mounting transducers).</li> </ul>	


	<b>PLUG-IN TRANSDUCER (ONE OUTPUT)</b>	<b>TP SERIES</b>
	<p>High quality converter with many varieties (Broad range of usage from general industry to atomic energy)</p> <p>■ <b>FEATURES</b>                  Safety design with characteristics of fume-resistance and humidity resistance. Suitable for harsh environment such as drainage system. Withstand voltage between input, output, aux. power source and outer case is AC2,000V for 1 minute insulation. Constant voltage and constant current output type. Zero span adjustment is possible. Many types of equipment such as signal, sensor, and AC transducer are available.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and others.</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC100V, AC110V, AC200V, AC220V, DC24V, DC48V (DC100/110V only for TP2)</li> </ul>	


	<b>PLUG-IN TRANSDUCER (TWO OUTPUT)</b>	<b>W SERIES</b>
	<p>High quality two output converter with many varieties/Controlling and monitoring are possible in one single unit</p> <p>■ <b>FEATURES</b>                  Controlling and monitoring are possible in one single unit because of two outputs whose circuits are insulated. Zero span adjustment is possible at every output. Withstand voltage between input, output, aux. power source and outer case is AC2,000V for 1 minute insulation. Constant voltage and constant current output type. Selected from isolator, distributor, thermocouple, resistance temperature, potentiometer, revolution, AC current, voltage, frequency transducer, etc.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and others.</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC100V, AC110V, AC200V, AC220V, DC24V, DC48V</li> </ul>	


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## □ TRANSDUCER

	<b>PLUG-IN TRANSDUCER SOFT SPEC TYPE</b>	<b>C SERIES</b>
	High quality converter with many varieties (Broad range of usage from general industry to atomic energy)	
<b>■ FEATURES</b> Operation parameter setting with CCM-1. Virtual output for loop test is possible. Withstand voltage between input, output, aux. power and outer case is AC1, 500V, 1 minute insulation. Constant voltage and constant current output type. Zero span adjustment is possible. Types of equipment of addition & subtraction operation, multiplication & division operation, temperature & pressure correction, function generation, analog backup, voltage pulse, etc. are available.		<b>■ MAIN SPECIFICATION</b> <ul style="list-style-type: none"> <li>● Input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and others.</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC100V, AC110V, AC200V, AC220V, DC24V, DC48V</li> <li>● Special programming unit CCM-1 is necessary for setting change.</li> </ul>

	<b>PLUG-IN LCD ALARM SETTER</b>	<b>SDLC-105A</b>
	Selection according to usage. Easy setting with LCD screen	
<b>■ FEATURES</b> Instrumentation setter which outputs excess or deficiency with two independent contact signals after comparing with setting value (DC voltage or DC current signal as an input). Compatible with software: Free setting of input with real scale according to processed amount and free setting/change of each setting values (operation value, contact delay, etc). Input and each setting value are displayed with real scale and each setting value is displayed with 4 digits LCD (w/ back light). SDDV-105 for deviation detection among input signals		<b>■ MAIN SPECIFICATION</b> <ul style="list-style-type: none"> <li>● Various input: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and other.</li> <li>● Aux. power: AC100V, AC110V, DC24V, DC48V, DC100V, DC110V</li> <li>● Alarm output 2 contact</li> <li>● Start delay(SD)</li> <li>● Contact delay(CD)</li> <li>● SDDV-105: Detection of deviation among input signals and deviation of individual input signal.</li> </ul>

	<b>PLUG-IN ALARM SETTER</b>	<b>SD SERIES</b>
	Selection between digital and real scale setting type for detection of AC voltage/DC voltage	
<b>■ FEATURES</b> SVD series: Setter with digital % scale which outputs contact signal with AC voltage as input. SDD series: Setter with digital % scale which outputs contact signal with DC current or DC voltage as an input. SD series: Setter with analog real scale which outputs contact signal with DC current or DC voltage as an input. This product can be used in combination with various sensor or transducer		<b>■ MAIN SPECIFICATION</b> SVD series: ● Setting method: HL/HH/LL/H/L ● Various input voltage ● Aux. power: AC/DC80-264V common, DC24V, DC48V ● Contact delay circuit (option), SDD, SD series: ● Setting method: HL/HH/LL/H/L ● Various DC voltage/current input ● Aux. power: AC100V, AC110V, DC24V and DC48V (DC100V, DC110V only for SDD) ● Contact delay circuit (option)

	<b>STATIC DETECTOR</b>	<b>S-63 SERIES</b>
	Most suitable for detection of AC/DC, revolution of tacho-generator, load flow, earth resistance, voltage shortage, etc	
<b>■ FEATURES</b> S-63 series: Multi-function electronic detector for the purpose of control to deal with various needs including automation of power supply system, labor and energy saving system. This product can be used for power current circuit measuring instrument, reverse power of generator in shipping field, frequency control and overload detection of motor, etc. SFD-HL-74(±0.01Hz): for high precision frequency detection.		<b>■ MAIN SPECIFICATION</b> <ul style="list-style-type: none"> <li>● Input: Various current, voltage, frequency, etc</li> <li>● Operation time: 0.5-50 seconds</li> <li>● Control power: AC110/220V, DC24V, DC48V and DC110V (Multiplier is externally equipped on some models).</li> <li>● Setting method: L-H × 3 (according to product use)</li> </ul>

  	<b>ARRESTOR FOR SIGNAL/POWER/INDUCED LIGHTNING DETECTION</b>	<b>DA/UV-2 SERIES</b>
	System equipment protection from inductive lightning surge evoked to transmission line of measuring equipment	
<b>■ FEATURES</b> DA series: Indoor-installed arrester to protect equipment by absorbing inductive lightning surge voltage which appears on signal line caused by electrical discharge of lightning. Small-sized plug-in structure. Line can not be open if main body part is extracted from terminal block part  UV-2 series: Detection of induced lightning. Arrester operation indication (Frontal display turns black to red and remain red after detection). Easy recognition of arrester exchange period by visible arrester operation. No power supply needed. By direct installation to terminal make small space need and wiring production cost reduce.		<b>■ MAIN SPECIFICATION</b> DA series: ● For instrumentation use: 4-20mA, for thermo resistance, thermocouple, potentiometer, pulse. ● For power: AC/DC 110V/3A, 20A; AC/DC220V/3A, 20A DC24V/3A  UV-2 series: ● For instrumentation use, for fine series/RS series exclusive use.


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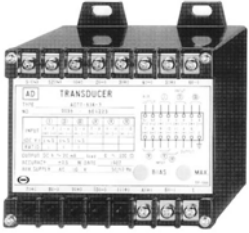
## □ TRANSDUCER

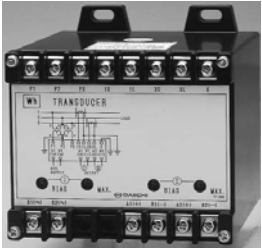
	<table border="1"> <thead> <tr> <th data-bbox="507 271 948 327">SMALL-SIZED AC TRANSDUCER</th> <th data-bbox="948 271 1423 327">90 SERIES</th> </tr> </thead> <tbody> <tr> <td colspan="2" data-bbox="507 327 1423 360">Small-sized box converter. 2 types of installation: DIN rail mounting and wall-mounting</td> </tr> <tr> <td data-bbox="507 360 948 555"> <p><b>■ FEATURES</b></p> <p>Small-sized, power-oriented. Abundant auxiliary power source. Abundant output and compatible with special specification. A series of root mean squared value type to deal with distorted wave. Many types of equipment: Current, voltage, electric power, reactive power, power factor, V-V phase angle, V-I phase angle and frequency.</p> </td> <td data-bbox="948 360 1423 555"> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 1 φ 2 W, 1 φ 3 W, 3 φ 3 W, 3 φ 4 W (110V/220V,1A/5A)</li> <li>● Various output: Constant current output: 4-20mA, 1mA, 5mA and 10mA, constant voltage output: 100mV, 1V, 5V, 1-5V, 10V and compatible with special specification.</li> <li>● Aux. power: AC100/110V, 200/220V, DC24V, DC100/110V</li> <li>● Withstand voltage: 2,000V</li> <li>● DIN rail mounting is possible</li> </ul> </td> </tr> </tbody> </table>	SMALL-SIZED AC TRANSDUCER	90 SERIES	Small-sized box converter. 2 types of installation: DIN rail mounting and wall-mounting		<p><b>■ FEATURES</b></p> <p>Small-sized, power-oriented. Abundant auxiliary power source. Abundant output and compatible with special specification. A series of root mean squared value type to deal with distorted wave. Many types of equipment: Current, voltage, electric power, reactive power, power factor, V-V phase angle, V-I phase angle and frequency.</p>	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 1 φ 2 W, 1 φ 3 W, 3 φ 3 W, 3 φ 4 W (110V/220V,1A/5A)</li> <li>● Various output: Constant current output: 4-20mA, 1mA, 5mA and 10mA, constant voltage output: 100mV, 1V, 5V, 1-5V, 10V and compatible with special specification.</li> <li>● Aux. power: AC100/110V, 200/220V, DC24V, DC100/110V</li> <li>● Withstand voltage: 2,000V</li> <li>● DIN rail mounting is possible</li> </ul>
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# Product Catalogue Digest Version


## □ TRANSDUCER

	<b>SENSOR TRANSDUCER</b>	<b>80 SERIES</b>
	Selection of transducer with sensor as an input.	
	<p><b>■ FEATURES</b></p> Convert signal from the sensor of thermo resistance, thermocouple, tacho-generator, and potentiometer to unified signal among systems. Because circuit like linearizer and burnout are incorporated. Sensor transducer is compatible with similar specification of electrical power transducer which withstand voltage is 2,000V.	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: Various sensor</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V and 10V</li> <li>● Aux. power: AC100/110V, 200/220V, DC24V, DC48V, DC100/110V</li> <li>● Withstand voltage: 2,000V ● Tolerance: ±0.5%</li> </ul>

	<b>SIGNAL PROCESSING TRANSDUCER</b>	<b>80 SERIES</b>
	Compatible with broad range of signal processing including input switchover, scaling, etc.	
	<p><b>■ FEATURES</b></p> By using input switching, scaling, analog pulse and addition transducer, the followings can be realized. Convert every kind of operated DC signals to weighted signals with different rated value among generators. Extract total output/scaling output adjusted for input and display/pulse signal by using input switching, scaling, analog pulse, addition transducer.	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: Various DC voltage/current</li> <li>● Various output: 4-20mA, 1mA, 5mA, 10mA, 100mV, 1V, 5V, 1-5V, 10V and other.</li> <li>● Aux. power: AC100, 110V, 200/220V, DC24/48V (DC100/110V VF-82A is excluded)</li> <li>● Withstand voltage: 2,000V (Input/output is non-insulated except for VF-83A, ADTT2-83A)</li> <li>● Tolerance: ±0.5%</li> </ul>

	<b>SPECIAL TRANSDUCER</b>	<b>80 SERIES</b>
	Compatible with integrating power, DC power, power flow, cycle control	
	<p><b>■ FEATURES</b></p> Integrating power and reactive power can be measured. Current at load-flow (power receiving/power sending), reactive power, and current can be measured. Current, voltage, electric power of cycle-controlled electric furnace, etc. can be measured. Exclusive transducer for special use (measurement of DC power, etc) is available. Furthermore transducer for demand current or maximum voltage measurement is available, too.	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 1 φ 2 W, 1 φ 3 W, 3 φ 3 W, 3 φ 4 W (110V/220V, 1A/5A)</li> <li>DC100V, 500A/60mV</li> <li>● Output: Constant current output, constant voltage output</li> <li>● Aux. power : AC100/110V, 200/220V, DC24V and DC110V</li> <li>● Withstand voltage: 2,000V (DC power is input/output non-insulated)</li> </ul>

	<b>RACK STORAGE TYPE TRANSDUCER</b>	<b>RS SERIES</b>
	High quality/high performance. System structure with free combination (from electrical power to instrumentation) in line with purpose.	
	<p><b>■ FEATURES</b></p> High quality/high performance. Thin rack storage type transducer developed for instrumentation system. Other than various industrial measuring series, our original electric power measurement series for system circuit is available. Selection of necessary measurement functions from abundant models. 2-output or connector output selection according to system structure. Storage case selection according to the number of measuring units.	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● RS(B)-19 (storage number: 14) , RS(B)-13 (storage number: 8) , RS(B)-9 (storage number: 4)</li> <li>● Power unit: ZRS AC110V, DC24V and DC110V</li> <li>Aux. power: Batch supply to each unit.</li> <li>● Individual input: Isolator, thermocouple temperature, resistance temperature, etc.</li> <li>● AC batch input: AC voltage, AC current, electric power, reactive power, power factor, frequency</li> <li>● Withstand voltage: 2,000V (isolator and AC converter)</li> <li>● Transmission unit ● Arrestor unit</li> </ul>

	<b>RACK MOUNTING TYPE TRANSDUCER</b>	<b>RC SERIES</b>
	High quality/high performance. Rack mounting type transducer.	
	<p><b>■ FEATURES</b></p> High-reliability/high accuracy. Using highly reliable electronic parts. Selection among current, voltage, electrical power, reactive power, power factor, frequency, signal, thermocouple, resistance temperature. Selection among 1-output, 2-output and 3-output.	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Tolerance: ±0.3% (phase angle, power factor, frequency are excluded.)</li> <li>● 1 φ 2 W, 1 φ 3 W, 3 φ 3 W, 3 φ 4 W (110V/220V, 1A/5A)</li> <li>● Various output ● Aux. power: AC110V, DC110V</li> <li>● Withstand voltage: 2,000V (Between output signals: AC500V)</li> <li>● Check terminal: Option (standard setting according to type of equipment)</li> </ul>

# Product Catalogue Digest Version

## □ POWER GENERATOR DIGITAL CONTROLLER

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<p><b>■ FEATURES</b></p> <p>Synchronous check relay with synchronism check display used for synchronous between bus bar and power generator and synchronous among systems. Used for fail safe at automatic synchronous and manual synchronous.</p>	<p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Bus bar side, power generator side input: AC110V(50/60Hz) or AC110V/ <math>\sqrt{3}</math>V(50/60Hz) single-phase input</li> <li>● Control output: synchronous check (<math>\Delta \phi</math>), Dead bus closing (D, B, C), Alarm(ALARM)</li> <li>● Control power: AC/DC common(AC100/110V, DC100/110V)</li> <li>● Frequency difference: 0.05-0.3 Hz</li> <li>● Phase difference: 3-35 degree</li> </ul>								
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# Product Catalogue Digest Version

## □ DIGITAL MEASURING INSTRUMENT

	<p style="text-align: right;"><b>AUTOMATIC THREE-PHASE POWER CONTROLLER</b> <span style="float: right;">PFO-3/PFO-6</span></p> <p>For saving electric utility expense by discount according to power factor as well as energy saving.</p> <p><b>■ FEATURES</b> Automatic power controller for three-phase to control automatically closing amount of electrical power condenser. Saving electric utility expense by discount according to power factor. Labor saving by power factor monitoring and adjustment. Effective usage of facility capacity by reduction of electrical power loss. Extended longevity of equipment by stable circuit voltage.</p> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● 3 φ 3 W , 3 φ 4 W (110V/220V, 1A/5A).</li> <li>● Aux. power: AC85-253V/DC80-143V (common).</li> <li>● Control system: Cyclic control, optimization control, multi-step control. Condenser control number: MAX. 3 circuits, MAX 6 circuits</li> </ul> <p>Control output contact: Zero voltage 1a contact(one side common) AC250V/5A, DC100V/0.5A, DC30V/5A</p>
	<p style="text-align: right;"><b>DIGITAL MULTI METER</b> <span style="float: right;">QM1-96</span></p> <p>Maximum 3 measurements can be displayed. Digital multi meter with analog/pulse output.</p> <p><b>■ FEATURES</b> Various kinds of electrical elements such as current, voltage, electric power, reactive power, power factor, frequency, watt-hour and var-hour can be measured by connecting one circuit of electrical system. Digital display, analog/pulse output is possible.</p> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Measurement display: Selection of 1,2,3 line display</li> <li>● 1 φ 2W , 1 φ 3 W , 3 φ 3 W , 3 φ 4 W (110V/220V, 1A/5A)</li> <li>● Output (Option: analog/pulse)</li> <li>● Aux. power: AC100/110V, DC24V, DC110V</li> <li>● Withstand voltage: 2,000V</li> </ul>
	<p style="text-align: right;"><b>HIGHEST/LOWEST METER/ MAX. DEMAND METER</b> <span style="float: right;">MA-96/MDA-96</span></p> <p>DIN96×96 digital meter with transducer incorporated.</p> <p><b>■ FEATURES</b> <u>Highest/Lowest meter:</u> MA-96/MV-96 <u>Max. demand meter:</u> MDA-96/MDV-96 Transducer incorporated. Output: Analog, Alarm. Various setting is possible with front switch. Most suitable for electric power monitoring in factory and building.</p> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● <u>Highest/Lowest meter:</u> Input: current, voltage Display: Instantaneous value, highest value, lowest value</li> <li>● <u>Max. demand ampere meter:</u> Input: Current, voltage, Display: Instantaneous value, max. demand value, demand value</li> <li>● Output (Option: analog, alarm)</li> <li>● Aux. power: AC100/110V, DC100/110V, DC24V</li> <li>● Withstand voltage: 2,000V</li> </ul>
	<p style="text-align: right;"><b>CIRCUIT BREAKER OPENING/ SHUTTING MONITORING DISPLAY</b> <span style="float: right;">MCB-96</span></p> <p>Most suitable for circuit breaker maintenance.</p> <p><b>■ FEATURES</b> Digital display (DIN96×96) with alarm output function. Power saving of circuit breaker maintenance and reliability improvement. Closing time, contact parting time and operational revolution of circuit breaker can be monitored.</p> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: Voltage contact: DC110V, 10mA</li> <li>● Aux. power: AC100/110V, DC100/110V</li> <li>● Output element: Closing time, Contact parting time (holding output for both), output full-scale time, output form, contact parting output multiplying factor, w/alarm output</li> </ul>
	<p style="text-align: right;"><b>FAILURE DISPLAY</b> <span style="float: right;">FSA-96</span></p> <p>Small-sized failure/condition monitoring system. Remote monitoring with communication output.</p> <p><b>■ FEATURES</b> Alarm display and alarm output with failure input signal from protection relay. Used as condition display by setting change. Signal delivery to centralized monitoring equipment is possible with communication output (Option).</p> <p><b>■ MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Input: Failure input or condition input: 8 points Alarm stop input: 1 point Display return input: 1 point</li> <li>● Output: Alarm output: 3 points Communication output: 1 point (Option)</li> <li>● Display: Failure display: Red LED Condition display: Amber LED, 8 points in total</li> <li>● Aux. power: AC100/110V, DC100/110V, DC24V</li> </ul>

# Product Catalogue Digest Version

## □ DIGITAL DISPLAY

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# Product Catalogue Digest Version

## □ ELECTRICAL METER

	<p><b>MAXIMUM DEMAND AMMETER</b> <span style="float: right;">BRL-110CH</span></p> <p>Complied to criteria specified by Japanese Government (Ministry of Land-Infrastructure-Transport) and Tokyo Metropolitan Government</p> <p>■ <b>FEATURES</b> 4 functions in one single unit. Current (max. demand, demand, instantaneous) can be measured. Adjustment from front side: Manual return of alarm output signal generation, zero-adjuster and record pointer/alarm output setting. Alarm output contact: Contactless passage style. Electromagnetic return (Option).</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Single-phase 2-wires 5A/1A</li> <li>● Period: 2 minutes, 5 minutes, 10 minutes, 15 minutes</li> <li>● Alarm contact (1a)</li> <li>● Withstand voltage: 2,000V</li> </ul>
	<p><b>HIGHEST/LOWEST METER</b> <span style="float: right;">RL SERIES</span></p> <p>Most suitable for earth fault voltage or current measuring</p> <p>■ <b>FEATURES</b> Suitable for recording of earth fault occurrence by indicating maximum/minimum value instantly with recording pointer. Two types: 110 angles and 80 angles. Many kinds of model: DC ampere meter/DC voltmeter/AC ampere meter/AC voltmeter/wattmeter/volt meter/power factor meter.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Wide angle: 110 angle and 80 angle</li> <li>● Various input and scales</li> <li>● Manual return (Option: Electromagnetic return specification can be available.)</li> <li>● Response time: 0.1-30 seconds</li> </ul>
	<p><b>METER RELAY</b> <span style="float: right;">EP/EL/EK/EF SERIES</span></p> <p>Most suitable for abnormality alarm of electrical control, abnormality detection, automatic control management in various industries</p> <p>■ <b>FEATURES</b> Meter relay structure: Indicator part with detection mechanism and relay part to control external circuit. Contact-less method with LED photo transistor incorporated in detection part. No affect of external vibration or shock by pointer passage because of the contact-less mechanism-no contact adhesion.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Various size and type</li> <li>● Various input and scale (compatible with broad range of options)</li> <li>● Relay operation control system: H,L,HL,HH,LL</li> <li>● Relay control power: AC100V, AC220V, DC24V, DC48V, DC110V</li> </ul>
	<p><b>WIDE ANGLE LOAD FLOW POWER FACTOR METER</b> <span style="float: right;">FPDL-110C-33</span></p> <p>Power factor measuring at load flow in electrical system</p> <p>■ <b>FEATURES</b> Measuring and display of three-phase power factor in electrical system. At power receiving: Power factor can be measured and displayed with upper half of measuring scale. At power distribution: Power factor can be measured and displayed with lower half of measuring scale. Accurate measuring up to 1/10 of rated current by electrical characteristics improvement.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Front size: 110×110</li> <li>● Swing angle: 360 degrees</li> <li>● Input: AC110V, 220V, 5A</li> <li>● Withstand voltage: 2,000V</li> <li>● Accessory: FSPT-83M-33</li> </ul>
	<p><b>ELECTRICAL METER</b> <span style="float: right;">PK/LK/FK/F SERIES</span></p> <p>High quality/high performance meter complied with JIS standard. Wide angle/square/oblong/picture frame/edgewise shapes.</p> <p>■ <b>FEATURES</b> Used in various kinds of electrical equipments such as distribution panel, control panel, electric power equipment, communication equipment, chemical equipment for AC/DC. High performance, economical advantage, good design, many types of model. Wide angle (LC), square (PK), oblong (LK), picture frame (FK), edgewise (F), DIN standard (PD). Abundant meter accessory like current transformer/voltage transformer/DC shunt.</p> <p>■ <b>MAIN SPECIFICATION</b></p> <ul style="list-style-type: none"> <li>● Front size: PK-120(120×120), PK-100(100×100), PK-80(80×80), PK-60(60×60), L-110(110×110), L-80(80×80), L-65(65×65) and others</li> <li>● Various input/various scale: compatible with broad range of options.</li> <li>● Withstand voltage: 2,000V</li> </ul>