Blue Jay Technology Co., Ltd

Technology of Electrical Automatic

V7.2022



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Products Catalog



About Blue Jay Technology	P-01
Residential & Commercial Meter	
MCM2603 6 x 3P4W Energy Meter, 5A CT connection	P-04
MCM2601 18 x 1P2W Energy Meter , 5A CT connection	P-05
MCM2403 4 x 3P4W Energy Meter, 100mA CT connection	P-06
MCM2401 12 x 1P2W Energy Meter, 100mA CT connection	P-07
MCM1000 6 x 3P4W / 18 x 1P2W Power Monitor, 5A CT connection	P-08
MCM400 4 x 3P4W / 12 x 1P2W Power Monitor, 100mA CT connection · · · · · · · · · · · · · · · · · · ·	P-09
19D series Din-rail Energy Meter, 100A directly connection / CT connection	P-11
19D-NX 40 x 3P4W / 120 x 1P2W Flexible Power Meter, CT connection	P-13

194DR Multi-function Meter, Three phase Din-Rail mounting ••••••••••••••••••••••••••••••••••••	
194Z / 194L Economic Power Meter, Three phase panel mounting ••••••••••••••••••••••••••••••••••••	
194YMulti-fcuntion Power Meter, Three phase panel mountingP-18	
194J Smart Power Monitor, Three phase panel mounting ••••••••••••••••••••••••••••••••••••	
194Q Intelligent Power Analyzer, Three phase panel mounting ••••••••••••••••••••••••••••••••••••	
BJ-194 Series Ordering Information • • • • • • • • • • • • • • • • • • •	
192/193 Electrical Panel Meter, Three phase panel mounting P-23	

Optional Accessories

DP series Electr	ic	al	C	Г												
/5A styles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SCT series Electrical CT ../1A styles

Electrical Transducer

QP/DP AC/DC Grid Transducer, DIN mounting

QP-X AC Power Transducer, Three phase DIN mounting

QPPX AC Programmable Transducer, Three phase DIN mount

QP series Ordering Information

Digital Motor Protector

PR 200						
Basic protection	motor relay					

PR 240
Split motor protection relay

PR 260
Modular motor management

Motor Protector Ordering Information



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1																							P-26
																							P-27
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				•	P-28
nt	ing	9							-	-						-	-						P-29
																							P-30
																							P-32
																							P-33
																							P-34
-																			-				P-35



In-cabinet environment control

S series Temperature protection relay											-				P-3	37
HD series Peltier condenser					 								 		P-4	40

Switchgear Condition Monitor

SCM-PD3000 Partial discharge monitor P-43
SCM-W3000 Switchgear thermal monitor P-44
CBM3000 Circuit Breaker Manager
RCM series Residual-current monitor P-46
AFR series Arc Flash Protective Relay • • • • • • • • • • • • • • • • • • •







About Blue Jay Technology

INTRODUCTION

Chongqing Blue Jay Technology Co., Ltd. was founded by engineers with many years of experience. Focuses on the development, production and sales of power automation monitoring products and energy metering instruments. We also provide third-party procurement services in industrial automation signal acquisition, signal transmission, and execution operating device etc.

"Honesty and quality, customer and service first"

Blue Jay has two production plant, respectively electric metering products and electric power automation monitoring device. Introduce and implement the ISO9001 standard, with high-standard production and testing equipment to ensure the stability and reliability of making products.

WHAT WE CAN DO

We are constantly looking at our range of products and the requests our customers are making. Choose us, you can enjoy the service from mature and stable developing engineers team, provide customized development services for part of product line to meet different OEM & ODM request. Our online products index is increasing all the time, sales engineer team can assist you to selection products from professional vendor company in China, provide cost-effective one-stop procurement solutions.

Blue Jay's main product 19 series digital meters, MCM multichannel meters, QP/DP series transmitters, CMB series switchgear intelligent control devices, HD series cabinet environment control device with miniature intelligence, integration and High sensitivity precision characteristics, suitable for a wide range of monitoring sites and can supporting mostly power cabinet/switchgear.

CUSTOMER SERVICE

According to the different requirements of customers, we also provide special improved products with higher anti-EMC interference and higher IP protection performance. Especially suitable for special sites and can ensure long-term work in harsh environments such as the field, tunnels, and basements monitoring and control request.

We therefore welcome the opportunity to work with you in supplying all your electrical automatic control requirement.











	Page 1 of 117	Report No. HJ2025-181
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P-02



Multi-channels Power Meter

MCM series multi-channels power meter is special designed metering device for feeder loops. Multi-function design to provide electrical parameter measurement for three-phase or single phase branch circuits, it performs real-time metering, measures energy consumption and monitors power quality.

Advanced communications options including Modbus via RS485, optional Ethernet; Multiple digital input port can collect pulse signal from water meters and gas meters etc; Relay output port can remotely control field devices from host server system.

Measurement Parameter

Electrical parameter Basic	Voltage (U) , Current (I) @ 0.2% Power (P, Q, S) @ 0.5% Power factor (H) @ 0.1% Frequency (Hz) @ 0.1%
Active Energy	Consumed (Ep+) @ 0.5% Generated (Ep-) @ 0.5%
Reactive Energy	Consumed (Eq+) @ 2.0% Generated (Eq-) @ 2.0%

Reference standards

• Reference standard

Basic electricity: IEC 61557-12:2007 Active energy: IEC 62053-22:2003 Reactive energy: IEC 62053-23:2003

- LVD test standard IEC/EN 61010-1:2017, CATIII-300V
- EMC Test

Electrostatic discharge immunity IEC-61000-4-2 level 4 Electrical fast transient burst immunity: IEC61000-4-4 level 3

Surge (Shock) immunity: IEC61000-4-5 level 4



Application

- Metering of distribution feeders, transformers, generators, capacitor banks and motors.
- Medium and low voltage systems.
- Remote data reading.
- Alarm station with voltage-free digital inputs.
- Commercial, industrial, utility.
- Power quality analysis.
- Harmonic measurement.

MCM2603

6 Channels Energy Meter Three phase Din-Rail mounting

Description

Used for 6 channels 3P4W/3P3W three phase branch circuit electrical parameter collection, standard din-rail install and 13M width size, with 1.6" dot matrix LCD interface, can easily display all parameters on screen.

0.5 class high-precision performance, can instead of multiple digital energy meter. can reduce equipment investment in electrical metering projects, improve equipment reliability and reduce maintenance costs.

Volta

Features

- 6 channels three phase circuit metering
- Measurement accuracy class 0.5
- Current measuring .../5 or .../1 A
- 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- With RS-485 Modbus/RTU Communications
- Optional 6 channels Digital Input (DI) and 2 channels Digital Output (DO)
- Optional advanced electrical parameter*
- Optional record and read multi- tariffs ratio, Up to 3 months (TOU record)
- Optional max 99 lists SOE record
- Accept customization design
- * Refer to products Ordering Information







Technical characteristics

Current measurement on in	puts (TRMS)
CT secondary rated	Standard 1A/5A
Measurement range	0 9999A
Overload	1.2 times rated continuous; 5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	4S)
Direct measurement	18 520 VAC L-L
PT secondary	100VAC / 400VAC
Frequency	45 65 Hz
Overload	1 seconds for 2 times the rated
Input consumption	<0.2 VA
Auxiliary power supply	
AC voltage	DC/AC 85~265 ± 10 %, 50 / 60 Hz
Consumption	< 10 VA
I/O port (alarms / control)	
Number of relays	2 channel DO & 6 channel DI
Type	230 VAC 5 A, passive node
Communication	
Link	RS485 (2/3 wires half duplex)
Protocol	Modbus RTU mode
MODBUS speed	4800/9600/12800/19200bps



MCM2601

18 Channels Energy Meter Single phase Din-Rail mounting

Description

Used for 18 channels 1P2W single phase branch circuit electrical parameter collection, standard din-rail install and 13M width size, with 1.6" dot matrix LCD interface, can easily display all parameters on screen.

0.5 class high-precision performance, can instead of multiple digital energy meter. can reduce equipment investment in electrical metering projects, improve equipment reliability and reduce maintenance costs.

Features

- 18 channels single phase circuit metering
- Measurement accuracy class 0.5
- Current measuring .../5 or .../1 A
- 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- With RS-485 Modbus/RTU Communications
- Optional 6 channels Digital Input (DI) and 2 channels Digital Output (DO)
- Optional advanced electrical parameter*
- Optional record and read multi- tariffs ratio, Up to 3 months (TOU record)
- Optional max 99 lists SOE record
- Accept customization design
- * Refer to products Ordering Information



Technical characteristics

Current measurement on i	nputs (TRMS)
CT secondary rated	Standard 1A/5A
Measurement range	0 9999A
Overload	1.2 times rated continuous;5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	MS)
Direct measurement	18 300 VAC L-N
PI secondary	100VAC
Frequency	45 65 HZ
Overload Input consumption	1 seconds for 2 times the rated <0.2 VA
Auxiliary power supply	
AC voltage Consumption	DC/AC 85~265 ± 10 %, 50 / 60 Hz < 10 VA
I/O port (alarms / control)	
Number of relays	2 channel DO & 6 channel DI
Туре	230 VAC 5 A, passive node
Communication	
Link	RS485 (2/3 wires half duplex)
Protocol	Modbus RTU mode
MODBUS speed	4800/9600/12800/19200bps

Typical Wiring



MCM2403

4 Channels Energy Meter Three phase Din-Rail mounting

Description

Used for 4 channels 3P3W/3P4W three phase branch circuit electrical parameter collection, standard din-rail install and 6M width size, with 1.6" dot matrix LCD interface, can easily display all parameters on screen.

0.5 class high-precision performance, can instead of multiple digital energy meter. can reduce equipment investment in electrical metering projects, improve equipment

Volta

Features

• 4 channels three phase circuit metering

reliability and reduce maintenance costs.

- Measurement accuracy class 0.5
- Current measuring 100mA or 333mV • 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- Provide 5 virtual alarm trigger
- With RS-485 Modbus/RTU Communications
- With harmonic analysis
- With SPDT relay output for alarm output
- Accept customization design





Technical characteristics

Current measurement on i	iputs (TRMS)
CT secondary rated	100mA, 333mV optional
Measurement range	0 9999A
Overload	 1.2 times rated continuous; 5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	MS)
Direct measurement PT secondary Frequency Overload Input consumption	18 400 VAC L-L 100VAC / 400VAC 45 65 Hz 1 seconds for 2 times the rated <0.2 VA
Auxiliary power supply	
AC voltage Consumption	DC/AC 85~265 ± 10 %, 50 / 60 Hz < 10 VA
I/O port (alarms / control)	
Number of relays Type	1 x SPDT relay 230 VAC 5 A, passive node
Communication	
Link Protocol MODBUS speed	RS485 (2/3 wires half duplex) Modbus RTU mode 4800/9600/12800/19200bps

Typical Wiring







MCM2401

12 Channels Energy Meter Single phase Din-Rail mounting

Description

Used for 12 channels 1P2W single phase branch circuit electrical parameter collection, standard din-rail install and 6M width size, with 1.6" dot matrix LCD interface, can easily display all parameters on screen.

0.5 class high-precision performance, can instead of multiple digital energy meter. can reduce equipment investment in electrical metering projects, improve equipment reliability and reduce maintenance costs.

Features

- 12 channels single phase circuit metering
- Measurement accuracy class 0.5
- Current measuring 100mA or 333mV
- 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- Provide 5 virtual alarm trigger
- With RS-485 Modbus/RTU Communications
- With harmonic analysis
- With SPDT relay output for alarm output
- Accept customization design



Technical characteristics

Current measurement on i	nputs (TRMS)
CT secondary rated	100mA, 333mV optional
Measurement range	0 9999A
Overload	 1.2 times rated continuous; 5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	MS)
Direct measurement PT secondary Frequency Overload Input consumption	18 300 VAC L-N 100VAC / 400VAC 45 65 Hz 1 seconds for 2 times the rated <0.2 VA
Auxiliary power supply	
AC voltage Consumption	DC/AC 85~265 ± 10 %, 50 / 60 Hz < 10 VA
I/O port (alarms / control)	
Number of relays Type	1 x SPDT relay 230 VAC 5 A, passive node
Communication	
Link Protocol MODBUS speed	RS485 (2/3 wires half duplex) Modbus RTU mode 4800/9600/12800/19200bps

Typical Wiring



MCM1000

6 Channels Energy Collector Din-Rail mounting

Description

MCM1000 series provides a compact and robust metering solution, enable reliable monitoring of building electrical loads with a low installation cost-per-point by combining sub-metering.

The unit performs real-time metering, measures energy consumption for max 18 channel circuits for single phase or 6 channel for three phase circuits.

Features

- 6 channels three phase circuit metering or 18 channels single phase circuit metering
- Measurement accuracy class 0.5 Auxi
- Current measuring .../5 or .../1 A
- Universal series power supply (85-265VAC/DC)
- With RS-485 Modbus/RTU Communications
- Optional external 72*72mm display unit
- Optional 6 channels Digital Input (DI) and 2 channels Digital Output (DO)
- Accept customization design

Typical Wiring







Technical characteristics

Current measurement on in	puts (TRMS)
CT secondary rated	Standard 1A/5A
Measurement range	0 9999A
Overload	 1.2 times rated continuous; 5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	MS)
Direct measurement PT secondary Frequency	18 400 VAC L-L (18 250VAC L-N) 100VAC / 400VAC 45 65 Hz
Overload	1 seconds for 2 times the rated
Input consumption	<0.2 VA
Auxiliary power supply	
AC voltage Consumption	DC/AC 85~265 ± 10 %, 50 / 60 Hz < 10 VA
I/O port (alarms / control)	
Number of relays Type	2 channel DO & 6 channel DI 230 VAC 5 A, passive node
Communication	
Link Protocol MODBUS speed	RS485 (2/3 wires half duplex) Modbus RTU mode 4800/9600/12800/19200bps



P-08



MCM400

Multi-Channels Energy Meter Din-Rail mounting

Description

MCM400 series used for residential / commercial sub-metering, sampling the current signal through an external small openloop transformer, compact size can easy install in metering box.

RS485 port easy to build monitor network, enable reliable monitoring of building electrical loads with a low installation costper-point.

Features

- 4 channels three phase or 12 channels single phase circuit metering
- Measurement accuracy class 0.5
- Current measuring 100mA or 333mV
- 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- Provide 5 virtual alarm trigger
- With RS-485 Modbus/RTU Communications
- Accept customization design

Typical Wiring







Technical characteristics

Current measurement on	inputs (TRMS)
CT secondary rated	100mA, 333mV optional
Measurement range	0 9999A
Overload	 1.2 times rated continuous; 5 seconds for 10 times the rated
Input consumption	<0.2 VA
Voltage measurement (TR	(MS)
Direct measurement PT secondary Frequency Overload Input consumption	18 400 VAC L-L (18 250VAC L-N) 100VAC / 400VAC 45 65 Hz 1 seconds for 2 times the rated <0.2 VA
Auxiliary power supply AC voltage Consumption	DC/AC 85~265 ± 10 %, 50 / 60 Hz < 10 VA
Communication	
Link Protocol MODBUS speed	RS485 (2/3 wires half duplex) Modbus RTU mode 4800/9600/12800/19200bps

Characteristics Selection Table

	MCM2603	MCM2601	MCM2403	MCM2401	MCM1000	MCM400
METERING FEATURES						
Voltage (P-P, P-N)	•	•	•	•	•	•
Current (P-N)	•	•	•	•	•	•
Frequency	•	•	•	•	•	•
Total Power factor	•	•	•	•	•	•
Active power	•	•	•	•	•	•
Reactive power	•	•	•	•	•	•
Apparent power	•	•	•	•	•	•
Active energy consumed	•	•	•	•	•	•
Active energy generated	•	•	•	•	•	•
Reactive energy consumed	•	•	•	•	•	•
Reactive energy generated	•	•	•	•	•	•
Voltage harmonic distortion (THD)	0	0	•	•	-	•
Current harmonic distortion (THD)	0	0	•	•	-	•
Individial harmonic ⁽¹⁾	0	0	•	•	-	•
Time of Use (TOU)	0	0	-	-	-	-
Current / Voltage unbalance	0	0	0	0	-	0
Max Demand	0	0	0	0	-	0
Voltage deviation	0	0	0	0	-	0
Sequncy of Event record (SOE)	0	0	-	-	-	-
MEASUREMENT SIGNAL ACCESS	-	0			-	
1A & 5A	•	0	_	-	•	-
100mA	0	•	•	•	-	•
333mV	0	0	0	0	_	0
L-L 480V, three phase	•	_	•	_	•	•
L-IN 300V, single phase	_	•	_	•	0	0
4 metering channels (3P)	_	-	•	-	_	•
6 metering channels (3P)	•	-	-	_	•	-
12 metering channels (1P2W)	-	_	-	•	-	0
18 metering channels (1P2W)	-	•	-	-	0	-
72*72 ovtornal display unit						
72"72 external display unit	-	_	-	-	•	-
COMMUNICATIONS AND L/O PORT	•	•	•	•	_	
Fthernet 10/100MR	-	-			-	-
Modbus DTH		_			-	_
Drofubuc			-			
6*Digital inputs		0	-	_	0	_
$3 \times \text{Digital inputs}$		0			0	_
	U	0	•	•	\cup	
 With this function 	∩ ∩ nt	ional functio	n		Witho	ut this function
• With this function	Opt		/11		with	

(1) MCM2603/2601 detect 2~31th, MCM2403/2401 detect 2~15th.

(2) MCM2603/2601 and MCM1000 is signal logic alarm output, MCM2403/2401 with 5 virtual alarm and SPDT relay.

Other notes:

Max Demand value default calculated by **15min Sliding window** method, if need Block Interval please tell us before order. Choose Ethernet port protocol default use **MODBUS-TCP**.



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(2) MCM2603/2601 and MCM1000 is signal logic alarm output, 2 relay independent of logic and hardware;





19D Din-rail Energy Meter

19D series meter design for DIN-RAIL mounting, suit for residential energy metering and smart energy project. While the Modbus-RTU and pulse output communication allows seamless integration with data acquisition systems.

Various sub-models available, optional prepaid (IC card), wireless data transmit (4G/5G, Rolar etc.), expansion modules are available in built-in and external versions. Combines high performance smart energy meter, ease of integration to provide a cost-effective power and energy metering solution. Featuring a built-in LCD display designed to simplify setup and local reading of meter data.

Main Features

- 35mm DIN-rail install
- Tamper-proof design approved for revenue applications
- 10-400Vac direct voltage input, optional VTs connect
- 80A current direct input, 0.04A start current.
- Optional Multiple types CTs input: 5A/1A, 333mV, 100mA
- Compatible with both 50Hz and 60Hz systems
- Large LCD screen with backlight
- Built-in energy pulse output and alarm output
- RS-485 port built-in with Modbus-RTU
- Optional multiple tariffs and prepaid billing function
- Optional relay output
- Utility Revenue Grade Accuracy IEC 62053-21 1.0 Class / IEC 62053-22 0.5 Class

Application

- Replace mechanical electric meter
- Tenant sub-billing
- Cost allocation
- Energy efficiency & benchmarking
- Procurement optimization
- Power availability
- Demand response / load curtailment







Specification Selection Table

MODEL	19D-22D	19D-23C	19D-34C	19D-24D	19D-37D
Basic parameter					
Wiring model Aux Display capacity Voltage rating Current	1P2W Self-powered 9,999,999 kWh 230V 0.04-10(80)A	1P2W 85-265Vac/dc 9,999,999 MWh 100V, 230V /5A or/1A CTs	3P3W & 3P4W 85-265Vac/dc 99,999,999 MWh 100V, 230V /5A or/1A CTs	1P2W Self-powered 99,999,999 kWh 230V 0.04-10(80)A	3P3W & 3P4W Self-powered 99,999,999 kWh 100V, 220V, 380V 0.04-10(80)A
Measurement accuracy	/				
Current Voltage Active energy Reactive energy	0.5% 0.5% Class 1 Class 2	0.2% 0.2% Class 0.5 Class 1	0.2% 0.2% Class 0.5 Class 1	0.5% 0.5% Class 1 Class 2	0.5% 0.5% Class 1 Class 2
Metering Data					
Current Voltage Active power Reactive power Frequency Power factor 4-quadrant energy Max demand Multi- tariffs RTC					
Others					
RS-485 Modbus ⁽¹⁾ Pulse port ⁽²⁾ Digital output Prepaid functions ⁽³⁾ Remote ON/OFF Wireless functons ⁽⁴⁾ Module width Weight Temperature IP protection	• 1600imp/kwh - - 2 130g	• 1600imp/kwh - - - 3 170g IP40	● 1600imp/kwh ○ - - 4 250g -25°C to 55°C front panel and IP20 c	• 1600imp/kwh - - - - - - 4 230g asing	● 1600imp/kwh ○ ○ 7 310g
				1	

(1) Communication protocol default is MODBUS-RTU, can customized for different country application.

(2) Pulse constant default is 1600imp/kwh, if need other constant, please contact sales team before order. (3) Prepaid functions need use IC encryption card, default protocol support DL/T645-2007;

- Due to inconsistent requirements in different countries, please contact sales technical support.
- (4) Wireless module is build inside meter enclosure, optional 4G/5G, Lora module;
- Default provide female SMA terminal on meter left side, 2dbi antenna 3 meters length cable.







P-12



19D-NX Energy Meter

19D-NX Modular multi-function meter is Blue Jay next generation din-rail meter power meter. use 3M width expand model can build max 40x3P4W or 120x1P2W energy metering system. Flexible selection of different modules can build the most suitable on-site integrated metering device.

Meter use CTs connect, provide max 0.5 class metering accuracy. default RS485 Modbus-RTU port, customized expand module can provide extra IoT module valid for different project.

Main Features

- 4M / 3M width size modular design
- Easy to install and expand operate
- 1.6" dot matrix LCD screen
- Programmable digital inputs/ouputs
- Precision metering & sub-billing
- Universal series power supply (85-265VAC/DC)
- Core unit provide 15W(12Vdc) drive capacity
- Expand unit can seperate use as metering node
- RS-485 Modbus/RTU Communications
- Optional Ethernet expand module
- Optional IoT expand module

Application

- Replace mechanical electric meter
- Tenant sub-billing
- Cost allocation
- Energy efficiency & benchmarking
- Procurement optimization
- Power availability
- Demand response / load curtailment



Technical characteristics

Cu	rrent measurement on inputs ((TRMS)
	Rating of CT secondary	100mA, 50mA, 2.5mA
	Measurement range	0 11 kA
	Input consumption	<0.1 VA
	Accuracy	0.5% (IEC61557-12)
	Impedance	<10mΩ
		1.2 times of rating, continuous
	Overload capacity	10 times of rating, 10s
Vo	tage measurement (TRMS)	
	Measurement range	18 300 VAC
	PT secondary	100VAC / 400VAC
	Input consumption	<0.1 VA
	Accuracy	0.5% (IEC61557-12)
	Impedance	>1MΩ
	Overland energity	1.2 times of rating, continuous
	Overload capacity	2 times of rating, 1s
Fre	equency measurement	
	Measurement range	45 65 Hz
	Accuracy	±0.02Hz
En	ergy accuracy	
	Active energy	Class 1.0 (IEC 62053-22)
	Reactive energy	Class 2.0 (IEC 62053-23)
Au	xiliary power supply (19D-NC)	
	Rating	DC/AC 85~265 ± 10 %
	Frequency	50 / 60 Hz
	Consumption	< 10 VA
Au	xiliary power supply (Expand u	nit)
	Rating	12Vdc
	Consumption	<0.9W
Co	mmunication	
	Link	RS485 (2/3 wires half duplex)
	Protocol	Modbus RTU mode
	MODBUS speed	4800/9600bauds
Sa	ity	
	Isolation withstand voltage	AC 1KV/1min

Typical Wiring



RS-485 Daisy chain for Core Unit polling use

Expand Module Selection

Code	Description	Features
19D-NC	Core Unit	85-265Vac/dc 2* RS485 12V (15W) load capacity
19D-N32	Three phase metering unit	12Vdc AUX 2 channels three phase si 1* RS485
19D-N16	Single phase metering unit	12Vdc AUX 6 channels single phase s 1* RS485
19D-NWL	LoRa communication module	12Vdc AUX LoRa 2.4G 1* RS485
19D-NW4G	4G communication module	12Vdc AUX 4G telecom signal, LTE 1* RS485



Notes:

- Expand module < 20 units
- Each expand module have DIP switch to configuration MODBUS ID
- MODBUS ID can set 1-32



single

single





























Multifunction Power Meter

BJ-194 series are digital multifunction power meter manufactured by Blue Jay Technology Co., Ltd. Panel mounting install, it is the ideal choice for monitoring and controlling of power distribution systems. With its four direct access keys and LED/LCD displays, helps to use all the parameters in 3P3W or 3P4W LV installation.

It can be used as a data gathering device for an intelligent Power Distribution System or Plant Automation System. All monitored data is available via a digital RS485 communication port running MODBUS-RTU Protocol. Ethernet communication is also options.

Advantage Features

- Easy to install and operate
- ITF Technology: galvanic insulation protection inputs outputs
- Clear and large character LCD Screen display with back light
- Track real-time power conditions
- 128 samples per cycle, 0.5s screen refresh rate
- Provide load alarm and timestamps
- Optional expand I/O, Ethernet connection port

Measurement Parameter

Voltage	Va, Vb, Vc / Vab, Vbc, Vca
Current	Ia, Ib, Ic
Power	Pa, Pb, Pc, Psum
Reactive Power	Qa, Qb, Qc, Qsum
Apparent Power	Sa, Sb, Sc, Ssum
Frequency	Fra, Frb, Frc, Fr
Power Factor	PFa, PFb, PFc, PF
Active Energy	Ep_imp, Ep_exp, Ep_total
Reactive Energy	Q_imp, Q_exp, Q_total
Voltage THD *	THD_U%, THD_I%
Harmonic *	2~15 th / 2~31 th / 2~63 th
Multi- tariffs *	3 month, 4 Tariffs, 12 Segment
Max Demand *	Um, Im, Pm, Qm
Power Quality *	Voltage Drop / Flicker / Unbalance

* Parameter depends on the meter series code



Application

- Metering of distribution feeders, transformers, generators, capacitor banks and motors.
- Medium and low voltage systems.
- Remote data reading.
- Alarm station with voltage-free digital inputs.
- Commercial, industrial, utility.
- Power quality analysis.
- Harmonic measurement.

194DR

Multi-function Meter Three phase for Din-Rail mounting

Description

Special designed for din-rail mounting, it is a high-end multifunction power meter. Using dot matrix LCD screen, can more easily display more electrical parameters on the same screen.

0.5 class high-precision performance, can instead of your old analog indicator or digital single-function products such as ammeters, voltmeters or watt meters etc. Build-in virtual alarm trigger, can detect voltage drop or flicker event, and record in register for future tracing work.

Features

- Measurement accuracy class 0.5
- Current measuring .../5 or .../1 A
- 1.6" dot matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- Provide 5 virtual alarm trigger
- Provide 100 lists SOE record, include: 20 lists I/O event
- 80 lists virtual alarm even
- Optional advanced electrical parameter*
- Optional record and read multi- tariffs ratio, Up to 3 months
- With RS-485 Modbus/RTU Communications
- With 1 channel Pulse Output (PO) for active energy counting
- Optional 4 channel Digital Input (DI) and 2 channel Digital Output (DO)
- * Refer to products Ordering Information





Technical characteristics

Current measuremen <u>t on inp</u>	uts (TRMS)
CT secondary	1 or 5 A, optional 100mA
Measurement range	0 11 kA
Input consumption	<0.1 VA
Voltage measurement (TRMS	
Measurement range	18 400 VAC
PT secondary	100VAC/400VAC
Input consumption	<0.1 VA
Elctrical power measurement	(IEC61557-12)
Accuracy (V,I)	0.20%
Accuracy (P,Q)	0.50%
Frequency measurement	
Measurement range	45 65 Hz
Accuracy	±0.02Hz
Energy accuracy	
Active energy	Class 0.5 (IEC 62053-22)
Reactive energy	Class 2.0 (IEC 62053-23)
Auxiliary power supply	
AC voltage	$DC/AC 85 \sim 265 \pm 10\%$
Frequency	50 / 60 HZ
Consumption	< 10 VA
1/O port, configuration as ord	1* Dulas 1600imm (IdM/h
Delay outputs (PO)	1* Puise, 1000imp/kwn
Relay outputs (DO)	2* SA@2SUVAC / SA@SUVUC
Status Inputs (DI)	
	RI< 50052 ON, RI>100852 OFF
Isolation*	1KVac r.m.s
Communication	
Link	RS485 (2/3 wires half duplex)
Protocol	Modbus KIU mode
MUDBUS speed	4000/9000Dauds

* Can provide 4KV isolation model, please indicate detail request before order





194Z/194L

Economic Power Meter Three phase for panel mounting

Description

Low cost design digital power meter, provide RS-485 communication port, easy for user connect to PLC and build SCADA system.

Higher measurement accuracy and system stability, it is cost effective ideal for OEMs and panel builders solution. (Option LED display screen)

Features

- PMD measurement accuracy class 0.5
- Current measuring .../5 or .../1 A
- Backlit LCD display
- Universal series power supply (85-265VAC/DC)
- Expandable input / output modules (up to 3 modules)
- With RS-485 Modbus/RTU Communications
- Optional 2 channel Pulse Output (PO) for active energy&reactive energy counting
- Optional 1 channel Analog Output (AO)
- Optional 4 channel Digital Input (DI) and 2 channel Digital Output (DO)



Technical characteristics

Current measurement on inpu	its (TRMS)
CT secondary	1 or 5 A
Measurement range	0 11 kA
Input consumption	<0.1 VA
Voltage measurement (TRMS)
Measurement range	18 400 VAC
PT secondary	100VAC/400VAC
Frequency	50 / 60 Hz
Input consumption	<0.1 VA
Electrical power measurement	(IEC61557-12)
	0.50%
Erequency measurement	0.50%
Measurement range	45 65 Hz
Accuracy	±0.02Hz
Energy accuracy	
Active energy	Class 1.0 (IEC 62053-21)
Reactive energy	Class 2.0 (IEC 62053-23)
Auxiliary power supply	
AC voltage	DC/AC 85~265 ± 10 %
Frequency	50 / 60 Hz
Consumption	< 10 VA
I/O port, configuration as ord	ering info
Optical outputs (PO)	2* Pulse, 1600imp/kWh
Relay outputs (DO)	2* 5A@250Vac / 5A@30Vdc
Status Inputs (DI)	4* Dry contact
Analog output (AO)	1* 4~20mA, load <390Ω,
	or $0 \sim 10V$, load $> 100K\Omega$
Isolation	1kVac r.m.s
Communication	DC40E (2/2 wines half durlay)
LINK	KS405 (2/3 WIRES NAIF OUPIEX)
MODBUS speed	4800/9600baude
moudous speed	TOUUJOUUDauus

194Y

Multi-fcuntion Power Meter Three phase for panel mounting

Description

Three phase electrical network power quality detection device, provide energy consumption and generate; THD (Total Harmonic Distortion); Harmonic individual data reading.

Build-in 4 tariffs energy logger function, with onboard memory can record last three month energy data, free to set max 12 segment record period, can be use as a commercial billing unit.

Features

- PMD measurement accuracy class 0.5s
- Current measuring .../5 or .../1 A
- Backlit LCD display
- Universal series power supply (85-265VAC/DC)
- Record and read multi- tariffs ratio, Up to 3 months
- 15th individual harmonic
- With RS-485 Modbus/RTU Communications
- Optional Ethernet, TCP/IP or MODBUS-TCP
- With 2 channel Pulse Output (PO) for active energy&reactive energy counting
- Optional 1 channel Analog Output (AO)
- Optional 4 channel Digital Input (DI) and 2 channel Digital Output (DO)





Technical characteristics

Current measurement on inp	uts (TRMS)
CT secondary	1 or 5 A
Measurement range	0 11 kA
Input consumption	<0.1 VA
Voltage measurement (TRMS	5)
Measurement range	18 400 VAC
PT secondary	100VAC/400VAC
Frequency	50 / 60 Hz
Input consumption	<0.1 VA
Elctrical power measurement	(IEC61557-12)
Accuracy (V,I)	0.20%
Accuracy (P,Q)	0.50%
Frequency measurement	
Measurement range	45 65 Hz
Accuracy	±0.02Hz
Energy accuracy	
Active energy	Class 1.0 (IEC 62053-21)
Reactive energy	Class 2.0 (IEC 62053-23)
Auxiliary power supply	
AC voltage	$DC/AC 85 \sim 265 \pm 10\%$
Frequency	50 / 60 Hz
Consumption	< 10 VA
1/O port, configuration as ord	ering into
Optical outputs (PO)	2* Puise, 1600imp/kwn
Relay outputs (DO)	2* SA@2SUVdC / SA@3UVUC
Status Inputs (DI)	
Analog output (AO)	$1^{+} 4^{-20}$
Isolation	2kVac r.m.s
Communication	DC40E (2/2 using a half durates)
	KS405 (2/3 WIRES NAIT OUPIEX)
MODRUS speed	MOUDUS KIU MOUE
MUDBUS speed	4000/9000Dauas

P-18



194J

Smart Power Monitor Three phase for panel mounting

Description

New 194J series Smart Power Monitor is the more powerful meter than 194Y series power analyzer. With higher precision and more measurement parameters.

Standard RS485 communication structure, MODBUS-RTU protocol, optional profibus-DP protocol. In different project requirement, also support choose RJ45 Ethernet port (MODBUS-TCP)



- PMD measurement accuracy class 0.2
- Current measuring .../5 or .../1 A
- Backlit LCD display
- Universal series power supply (85-265VAC/DC)
- Record and read multi- tariffs ratio, Up to 3 months
- 31th individual harmonic
- A variety of advanced electrical parameters can display the status of the power grid on the spot (Max demand/unbalance/crest factor/K factor...)
- Provide max 50 lists SOE record function
- With RS-485 Modbus/RTU Communications
- With 2 channel Pulse Output (PO) for active energy&reactive energy counting
- Optional 2 channel Analog Output (AO)
- Optional 4 channel Digital Input (DI) and 2 channel Digital Output (DO)



Technical characteristics

-		
Cur	rent measurement on inpu	its (TRMS)
	CT secondary	1 or 5 A
	Measurement range	0 11 kA
	Input consumption	<0.1 VA
Volt	tage measurement (TRMS)
	Measurement range	18 400 VAC
	PT secondary	100VAC/400VAC
	Frequency	50 / 60 Hz
	Input consumption	<0.1 VA
Elct	rical power measurement	(IEC61557-12)
	Accuracy (V,I)	0.20%
	Accuracy (P,Q)	0.50%
Fre	quency measurement	
	Measurement range	45 65 Hz
	Accuracy	±0.02Hz
Ene	rgy accuracy	
	Active energy	Class 0.5s (IEC 62053-22)
	Reactive energy	Class 1.0 (IEC 62053-24)
Aux	ciliary power supply	
	AC voltage	DC/AC 85~265 ± 10 %
	Frequency	50 / 60 Hz
	Consumption	< 10 VA
I/0	port, configuration as orde	ering info
	Optical outputs (PO)	2* Pulse, 1600imp/kWh
	Relay outputs (DO)	2* 5A@250Vac / 5A@30Vdc
	Status Inputs (DI)	4* Dry contact
	Analog output (AO)	1* 4~20mA, load <390Ω,
	· ····································	or 0~10V, load >100KΩ
	Isolation	4kVac r.m.s
Con	nmunication	
	Link	RS485 (2/3 wires half duplex)
	Protocol	Modbus RTU mode
	MODBUS speed	4800/9600bauds

194Q

Intelligent Power Analyzer Three phase for panel mounting

Description

High-end multifunction power analyzer manufactured by Blue Jay Technology. higher measurement accuracy, and powerful functions. With its four direct access keys and TFT displays, friendly full text interface helps user operate device more easy.

Max 63th harmonic individual monitor, let user clear grasp of the present electrical grid quality.

Features

- PMD measurement accuracy class 0.2
- Current measuring .../5 or .../1 A
- Clear and large matrix LCD screen
- Universal series power supply (85-265VAC/DC)
- Record and read multi- tariffs ratio, Up to 3 months
- 63th individual harmonic
- A variety of advanced electrical parameters can display the status of the power grid on the spot (Max demand/unbanlance/crest factor/K factor...)
- Provide 5 virtual alarm trigger
- Provide max 100 lists SOE record
- 1KHz Waveform Snapshot, capture length 1 second of voltage, current power flicker / drop for event tracing.
- With RS-485 Modbus/RTU Communications
- With 2 channel Pulse Output (PO) for active energy&reactive energy counting
- Optional 3 channel Analog Output (AO)
- Optional 6 channel Digital Input (DI) and 2 channel Digital Output (DO)
- Optional 128MB memory for data logger





Technical characteristics

Current measurement on inp	uts (TRMS)
CT secondary 1 and 5 A	1 or 5 A
Measurement range	0 11 kA
Input consumption	<0.1 VA
Voltage measurement (TRMS	5)
Measurement range	18 400 VAC
PT secondary	100VAC/400VAC
Frequency	50 / 60 Hz
Input consumption	<0.1 VA
Elctrical power measurement	t (IEC61557-12)
Accuracy (V,I)	0.20%
Accuracy (P,Q)	0.50%
Frequency measurement	
Measurement range	45 65 Hz
Accuracy	±0.02Hz
Energy accuracy	
Active energy	Class 0.2s (IEC 62053-22)
Reactive energy	Class 1.0 (IEC 62053-24)
Auxiliary power supply	
AC voltage	$DC/AC 85 \sim 265 \pm 10 \%$
Frequency	50 / 60 Hz
Consumption	< 10 VA
1/0 port, configuration as ord	lering info
Optical outputs (PO)	2* Pulse, 1600imp/kWh
Relay outputs (DU)	2* 5A@250Vac / 5A@30Vac
Status Inputs (DI)	
Analog output (AO)	1* 4~20mA, 10ad <39052,
	or 0~10V, load >100KS2
Isolation	4kVac r.m.s
Communication	
LINK	KS485 (2/3 wires half duplex)
Protocol	Modbus RTU mode
MODBUS speed	4800/9600bauds

P-20



BJ-194 Series Ordering Information

	194E	194DR	194L	194Z	194Y	194J	194Q
METERING FEATURES							
3 lines 4 digital LED display	•	-	-	-	-	-	-
Backlit LCD display	-	-	•	•	•	•	•
Dot matrix LCD display	-	•	-	-	-	-	•
Voltage (P-P, P-N)	•	•	•	•	•	•	•
Current (P-N)	•	•	•	•	•	•	•
Frequency	•	•	•	•	•	•	•
Total Power Factor & Per phase	•	•	•	•	•	•	•
Active power & Per phase	•	•	•	•	•	•	•
Reactive power & Per phase	•	•	-	•	•	•	•
Apparent power & Per phase	•	•	-	•	•	•	•
Active energy consumed / generated	•	•	•	•	•	•	•
Reactive energy consumed / generated	•	•	-	•	•	•	•
Time of Use (TOU)	-	0	-	\bigcirc	•	•	•
Voltage & Current harmonic distortion (THD)	-	0	-	-	•	•	•
Individial harmonic ⁽¹⁾	-	0	-	-	•	•	•
Current / Voltage unbalance ⁽²⁾	-	0	-	-	-	•	•
Max Demand ⁽³⁾	-	0	-	-	-	•	•
Voltage deviation ⁽⁴⁾	-	\bigcirc	-	-	-	•	•
Sequncy of Event record (SOE)	-	\bigcirc	-	-	-	•	•
Voltage drop / flicker	-	-	-	-	-	-	•
Waveform capture	-	-	-	-	-	-	•
128MB logger memory	-	-	-	-	-	-	\bigcirc
ACCURACY							
PMD (IEC61557-12)	CL 0.5	CL 0.5	CL 0.5	CL 0.5	CL 0.5s	CL 0.2	CL 0.2
Active enery (IEC62053-21/22)	CL 1.0	CL 0.5	CL 1.0	CL 1.0	CL 1.0	CL 0.5s	CL 0.5s
Reactive energy (IEC62053-23/24)	CL 2.0	CL 2.0	CL 2.0	CL 2.0	CL 2.0	CL 1.0	CL 1.0
EXPANSION MODULE							
Energy pulse output (active & reactive)	•	•	\bigcirc	•	•	•	•
Analogue outputs (0/4~20mA ; 0~5V)	-	-	-	\bigcirc	\bigcirc	\bigcirc	\bigcirc
Digital input / outputs ⁽⁵⁾	-	0	-	\bigcirc	\bigcirc	\bigcirc	\bigcirc
COMMUNICATION PORT							
RS-485	0	•	•	•	•	•	•
Ethernet 10/100MB ⁽⁶⁾	-	-	-	-	0	\bigcirc	\bigcirc
COMMUNICATIONS PROTOCOL							
Modbus RTU	0	•	•	•	•	•	•
Profubus	-	-	-	\bigcirc	\bigcirc	\bigcirc	\bigcirc
• With this function	\odot Optional function				Without this function		

(1) 194DR detect 2~51th, 194Y detect 2~15th, 194J detect 2-31th, 194Q detect 2~63th.

(2) Unbalance default calculated by electrical Vector value, if need Split phase absolute value calculation, please tell us before order.

(3) Max Demand value default calculated by 15min Sliding window method, if need Block Interval please tell us before order.

(4) Deviation value default calculated in rated 220V and 50Hz, please confirmed with our sales team of your local grid parameter.

(5) Standard are 4DI & 2DO port, can modify as client requirement, max support 6DI & 4DO port.

(6) Choose Ethernet port protocol default use **MODBUS-TCP**.

BJ-1941-2S3-4/5/6

Series Name	Optional Type
	DR: Din-rail Multifunction Power Meter
	Z/L: Eenomic Power Meter
1 series code	Y: Multifunction Power Meter
	J: Smart Power Monitor
	Q: Intelligent Power Analyzer
	3: 80(W)x80(H)x71(D)mm
2 panel size	9: 96(W)x96(H)x71(D)mm
	2: 120(W)x120(H)x123(D)mm
3 display mode	4: 3 lines 4 digital LED display (red)
	Y: Backlit LCD display
	AO1 / AO2 / AO3: with 1-3 channels analog liner output
	Blank: without this function
5 digital output	DO1 / DO2 / DO3 / DO4: with 1-4 channels digital relay output
	Blank: without this function
6 digital input	DI1 / DI2 / DI3 / DI4 / D5 / D6: with 1-4 channels digital signal input
	Blank: without this function

Notes:

1. Product specifications will change from time to time. Please contact Blue Jay for latest specifications. 2. Please confirm all the parameters with our staff before ordering. 3. Have special requirements, please contact Blue Jay Technical Support Team: tech@cqbluejay.com

Install Dimensions





Unit: mm







192/193

Electrical Panel Meter Three phase for panel mounting

Description

192/193 series especially developed for indication and supervision of the three-phase circuit, replaces an analogical display meter, reducing installation manpower and optimizing the used one of spaces in the panel.

Ideal for protection of single phase and threephase networks, it is monitored and generally to own alarm superior and inferior. Protection of the parameters of programming by password.

Main Features

- Class 0.5(192 series)/0.5S(193 series) electrical parameter measurement
- ITF Technology: galvanic insulation protection inputs outputs
- Measurement function cover :
- Current, Voltage, total three-phase power, power factor, frequency
- RS-485 MODBUS-RTU Communications
- Optional expandable I/O
- Large character LED Screen display
- Optional various install sizes

Application

- Metering of distribution feeders, transformers, generators, capacitor banks and motors.
- Medium and low voltage systems.



Technical characteristics

Voltage inputs (TRMS)	
PT secondary	100VAC/400VAC
Sampling Rate	2 per sec
Resolution	0.001 to 1
Burden	< 0.5VA, < 0.2VA in 20A
Current inputs (TRMS)	
CT secondary	1 and 5 A
Sampling Rate	2 per sec
Resolution	0.001 to 1
Burden	< 0.5VA, < 0.2VA in 20A
Auxiliary power supply	
AC voltage	DC/AC 85~265 ± 10 %
Frequency	50 / 60 Hz
Consumption	< 10 VA
Front panel	
Display Type	Red LED Super Bright Display
Maximum Display	9999 Counts
Polarity Indication	"-" is for negative input (option)
Communication (Option)	
Link	RS485
Type	2 3 wires half duplex
Protocol	Modbus RTU mode
MODBUS speed	4800/9600bauds
I/O port, configuration as or	dering info
Optical outputs (PO)	1* Pulse, 1600imp/kWh
Relay outputs (DO)	2* 5A@250Vac / 5A@30Vdc
Status Inputs (DI)	4* Dry contact
Isolation	1kVac r.m.s
Others	
Weight	Approximate $250 \sim 400g$
Calibration	$27^{\circ}C \pm 5^{\circ}C$
Operation	0 to $50^{\circ}C$, RH < 70%
Storage	-10 to $60^{\circ}C$, RH < 70%
Dielectric Strength	2.5 kV at 50Hz for 1 min

BJ-1912-3X4-4/5/6

Series Name	Optional Type
	2: Basic type
	3: Advanced type
	U: Voltage Meter
	I: Current Meter
	P: Active Power Meter
2 series code	Q: Reactive Power Meter
	H: Power Factor Meter
	F: Frequency Meter
	UI: Voltage & Current Combine Meter
	PQH: Power & Power Factor Combine Meter
	D: 48(W)x48(H)x71(D)mm
	A:72(W)x72(H)x71(D)mm
3 panel size	3:80(W)x80(H)x71(D)mm
	9: 96(W)x96(H)x71(D)mm
	2: 120(W)x120(H)x71(D)mm
	R: with RS485 MODBUS port
	Blank: without this function
	AO-A1: with one channel linear output (4~20mA)
	AO-A2: with one channel linear output (0~20mA)
3 analogue output	AO-V: with one channel linear output (0~5V)
	Blank: without this function
6 diaital output	DO: with one channel digital output
	Blank: without this function

Dimension Diagram

Dimension code	Panel Size (WxHxD)	Installation size (AxB)	
2	120x120x71	110x110	
3	80x80x71	75x75	- I B
9	96x96x71	9 0x90	
А	72x72x71	67x67	_
D	48x48x71	45x45	-

Ordering Information

Please provide following parameter to Blue Jay Sales Team before place your order:

1.Model type

2.Input signal range3.CT ratio / PT ratio (if any)4.Scale Display5.Power Supply



Typical wiring diagram



Notes:

BJ-192/193 provide variety of wiring mode in single-phase and three-phase connection, please refer to label on product and user manual



C N



DP series

Electrical CT ../5A styles

Description

The DP series current transformer has been specially designed to facilitate their installation in new or already existing net works. Connection of conventional CTs usually requires the interruption of the primary side circuit to pass cables or bus-bars through the transformer core or to connect such cables to the primary terminals.

DP series CT core can easily opened and installed and connected without any supply interruption. Thus saving time and the installation costs.

Features

- Secondary side current 5A
- Two built in fixing methods: Wall or Busbar mounting
- Wide inner window, allowing clamping in any types of cables or bus-bars.
- Wide range of sizes to suit most site installations

Accessories application





Technical characteristics

SN-code	Primary current		n(VA)		Core
Shecoue	unit: amp	Class 0.5	Class 1.0	(H*W)	(H*W)
	100, 150, 200 , 250	/	1.5		
DP-23	300	1.5	2.5	111*90	32*20
	400	2.5	3.75		
	250	/	1.5		
	300	/	2.5		
	400	1.5	2.5		
DP-58	500, 600	2.5	5	146*116	80*50
	750	2.5	5		
	800	3.75	5		
	1000	5	10		
	250,300	/	1.5		
	400	/	2.5		
DP-88	P-88 500, 600 1.5 2.5	147*146	80*80		
2. 00	750	2.5	5	10 110	
	800	3.75	5		
	1000	7.5	7.5		
	500, 600	/	2.5		
	750	2.5	5		
DP-812	800	5	2.5	188*146	120*80
	1000	7.5	3.75		
	1200, 1250, 1500	10	5		
	1000	5	10		
	1500	7.5	10		
DP-816	2000	10	15	247*189	160*80
	2500	15	20		
	3000, 4000, 5000, 6000	20	25		

Detail information for CT ordering, please contact Blue Jay sales team

SCT series

Electrical CT ../1A styles

Description

SCT series split-core current senses AC current from 100 to 800 Amps passing through the center conductor.

Split core design permits non-contact current measurements through magnetic field induction without requiring that the primary wire be taken offline and disconnected for CT installation. This method permits a safer, easy and portable current measurement.

Elect

Features

- Secondary side current less than1A
- Split core design for wiring cable
- with a 1 meter distance copper wire for easy installation
- Work with MCM400 and optional ../1A for other model meter

Physical size

CODE	Н	W	L	С
T16	46mm	31mm	31mm	16mm
T24	66mm	45mm	35mm	24mm
T36	82mm	58mm	40mm	36mm







Technical characteristics

Secondary side Output	
	/1A ± 1% from 5% to 120% /100mA or/0.333V ± 0.5% from 5% to 120%
Electrical parameters	
Insulation Voltage	600VAC
Maximum input voltage	5000VAC(Insulated Conductor)
Phase angle	Less than 2 degrees at 50% of rated current
Frequency Range	50 Hz to 400 Hz
Operating Temperature	-15Cto 60C
Standard & certification	
	CE recognized, and RoHS compliant
Size and model	
T16	less than 120A
T24	less than 300A
T36	less than 500A

Detail information for CT ordering, please contact Blue Jay sales team





Electrical Measuring Transducer

QP/DP **AC/DC Grid Transducer** for DIN mounting

Description

AC/DC grid transducer converts an ac / dc voltage or current input into a load independent output signal. With excellent temperature characteristic and good working stability. The output signal is based on the a root mean square(rms) measurement of the input signal and hence the transducer can be used with distorted waveforms.

The unit conforms to IEC 60688. In a addition it meets the insulation requirements of IEC 60255-5, clauses 5, 6 and 8 as well as the high frequency disturbance test of IEC 60255-22 for Class III test voltage.

Features

- 0.2/0.5 measurement accuracy
- Support customized parameters
- RMS measurement and output
- 500ms response time
- Compact 1.5M width size (T type)
- 35mm Din rail mounting
- With RS485 port optional (T type)

Application

- Metering of distribution feeders, transformers, generators, capacitor banks and motors.
- Medium and low voltage systems.
- Measuring converter: optional association of an instantaneous parameter to one of the analogue outputs available (0...20 mA / 4...20 mA)



Technical characteristics

Signal Inputs	
Rating	QPV 0-100V, 0-220V, 0-380V DPV 0-5V, 0-10V QPA 0-1A, 0-5A, 0-10A DPA 4-20mA, 0-20mA
Overload	1.2 times rated continuous; 5sec @ 10 times of rated current 1sec @ 2 times of rated voltage
Measurment Output	0.574
Standard outputs (others on request)	4~20mA or 0~5V 0~20mA; 5~10V; 0~10V;
Ripple	<0.5% peak to peak
Load Resistance	Current output: 0 <lr<510ω; Voltage output: Lr>10KΩ</lr<510ω;
Measurement Accuracy	
-	
Reference IEC 60688	0.5% or 0.2% @ F.S.
Reference IEC 60688 Adjustment	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment
Reference IEC 60688 Adjustment Frequency influence	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz
Reference IEC 60688 Adjustment Frequency influence Load influence	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply Rating	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range 85-265Vac/dc, Optional 12V, 24V, 48VDC
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply Rating Consumption	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range 85-265Vac/dc, Optional 12V, 24V, 48VDC <3VA
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply Rating Consumption Galvanic isolation betwe	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range 85-265Vac/dc, Optional 12V, 24V, 48VDC <3VA een I/O and AUX
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply Rating Consumption Galvanic isolation betwe Test voltage impulse	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range 85-265Vac/dc, Optional 12V, 24V, 48VDC <3VA een 1/0 and AUX 2KV RMS 50Hz for 1 minute 4KV 1.2/50µsec waveform
Reference IEC 60688 Adjustment Frequency influence Load influence Auxiliary Supply Rating Consumption Galvanic isolation betwe Test voltage impulse Temperature requirement	0.5% or 0.2% @ F.S. Potentiometer "ZERO" and "SPAN" "T" types no need extra adjustment <0.02% per Hz <0.25% of F.S. for specific load range 85-265Vac/dc, Optional 12V, 24V, 48VDC <3VA een I/O and AUX 2KV RMS 50Hz for 1 minute 4KV 1.2/50µsec waveform ents

QP-X

AC Power Transducer Three phase for DIN mounting

Description

QP-X series AC power transducer converts three phase ac signals into a load independent dc signal proportional to voltage(V), current(A), active power (watt) and reactive power (var) Frequency(Hz) etc. Three output signals combination in one transducer.

The current and voltage signals are passed into the circuit via precision instrument transformers to provide galvanic isolation between the input circuits and the transducer circuitry. Each pair of current and voltage signals is mathematically multiplied together to produce a product signal proportional to true power and independent of wave shape and phase angle.

Features

- 0.5 measurement accuracy
- RMS measurement and output
- Three phase independent measurement
- Multiple output for each input
- 35mm Din rail mounting
- Optional RS485 port
- Support customized parameters





Technical characteristics

Power Signal Inpu <u>ts</u>	
Nominal input	/1A or/5A C.T. connected 110V, 230V, 400V, 415V ac
Power consumption	<1 VA voltage <0.2 VA current 1.2 times continuous
Overload capacity	5sec @ 10 times of rated current 2sec @ 2 times of rated voltage
Frequency range	50Hz, 60Hz
Measurment Output	
Standard outputs (others on request)	4~20mA, 0~5V, 0~20mA; 5~10V; 0~10V;
Maximum load	$< 750 \Omega (0-2000A, 4-2000A)$ >2000 Ω (voltage output)
Ripple	<1% peak to peak
Response time	<250ms 0-90% <500ms 0-99%
Measurement Accuracy	
Class Accurate range Frequency influence Load influence	±0.5 % complying with IEC 60688 0 - 120% I <0.02% per Hz <0.25% of F.S. for specific load range
Auxiliary Supply	
Rating	85-265Vac/dc, Optional 12V, 24V, 48VDC
Consumption	<3VA
Galvanic isolation betwe	en 1/0 and AUX
Test voltage	2KV RMS 50Hz for 1 minute
impulse	4KV 1.2/50µsec waveform
impulse Temperature requireme	4KV 1.2/50µsec waveform



QPPX

AC Programmable Transducer Three phase for DIN mounting

Description

AC programmable transducer measures a wide range of electrical parameters and generates analog or digital output signals suitable for interfacing with instrumentation and control systems. Total four channel output, with panel key or PC control programmable, user can free to set 4 different data from max 26 electrical parameter for sampling and analog signal output.

Have three channel digital inputs and RS485-Modbus communication functionality. Can monitor the galvanically isolated DI signal and programmed the transducer with customized SCADA software, any of the measured parameters can be read out via the RS485 connection.

Features

- Accuracy 0.5 class
- 85~265VAC wide voltage AUX for most country and application
- With 4 channel output (support max 22 types parameter for analog output)
- Front panel with 4 keypad for analog parameter configuration, do not need extra configuration software.
- With RS-485 port for remote electrical data
- 500ms response time
- 35mm Din rail mounting
- Advanced electrical parameter ready optional
- SOE function optional



Technical characteristics

Electrical Signal Inputs	
Nominal input	1 or 5 Amp C.T. connected 110V, 230V, 240V, 400V, 415V ac +/-
Power consumption	<1 VA voltage <0.2 VA current
Overload capacity	5sec @ 10 times of rated current 2sec @ 2 times of rated voltage
Frequency range	40~65Hz
Measurment Output	
Standard outputs	4~20mA/ 0-20mA programmable (0~5V / 0~10V optional)
Maximum load	<390 Ω (current output) >10KΩ (voltage output)
Ripple	<1% peak to peak
Response time	<350ms 0-90% <500ms 0-99%
Measurment Accuracy	
Class Accurate range Frequency influence Load influence	0.2% / 0.5 complying with IEC 60688 0 - 120% I <0.05% per Hz <0.25% of F.S. for specific load range
Auxiliary Supply	
Rating	85-265Vac/dc, Optional 12V, 24V, 48VDC
Consumption	<3VA
Galvanic isolation betwe	en I/O and AUX
Test voltage impulse	2KV RMS 50Hz for 1 minute 4KV 1.2/50µsec waveform
Temperature requireme	ents
Operating Storage	-10~55C -40~70C, 20 ~ 93%RH ; Noncondensing

BJ-12-3/4-5

Series Name	Optional Ty
1 Product ID	QP: for AC grid me
I Floddet ID	DP: for DC grid me
	V: single phase vo
	A: single phase cu
	VX: three phase v
1 Innut electrical signal	AX: three phase c
	W: three phase ac
	K: three phase rea
	WK: three phase a
	PX: three phase of
	A0: Customized cu
	A1: 0~1A
	A2: 0~5A
	VO: Customized cu
3 Input signal range	V1:0~5V
—	V2: 0~10V
	V3:0~100V
	V4: 0~220V
	V5: 0~400V
	S0: Customized cu
	S1: 0~20mA
4 Output signal range	S2: 4~20mA
	S3: 0~5V
	S4: 0~10V
	P1:85~265VAC
5 Power supply	P2: 24VDC
	P3: 48VDC

 Notes: 1. Product specifications will change from time to time. Please contact Blue Jay for latest specifications.

 2. Please confirm all the parameters with our staff before ordering.

 3.Have special requirements, please contact Blue Jay Technical Support Team: tech@cqbluejay.com

Typical Dimension





уре
neasurement and transducer
neasurement and transducer
oltage
urrent
voltage
current
active power
eactive power
e active & reactive power
combination input (user free configure)
current input

urrent input

urrent output









Digital Motor Protector

Introduction

Digital motor protection relay is used to prevent damage to the electrical motor, such as internal faults in the motor, overcurrent fault, Single phasing, Earth fault, Bearing failure fault, High Winding temperature, Short circuit, etc.

Also external conditions when connecting to the power grid or during use have to be detected and abnormal conditions must be prevented. Additionally, the protection relay prevents the disturbance to spread back into the grid.

Protection functions

IEEE / ANSI C37.2	PROTECTION FUNCTIONS
48	Max. Start Time
49, 51	Overload
51	Increased safety motors overload
51R	Over Current Level 1 - Jam
47	Phase loss
46	Current imbalance
50G/N, 51G/N	Ground fault
50	Over Current Level 2 - Short
32L	Under Power
38	Over temperature
59	Over voltage
27	Undervoltage
81U/81O	Abnormal frequency
55	Lead / Lag PF / Low Power Factor
74	Welded Contactor
86 or 94	External fault
	Data logging
	Wave capture

Start working mode

- Protection Only
- Panel control start/stop
- Forward and reverse start
- Wye-Delta Transition
- Autotransformer Closed Transition
- Two-Winding

P-31

Not all models have above protect function and working mode, please refer to ordering information.



Technical characteristics

Flootwigel we we we observe	
Electrical parameters	
Auxiliary Power	85-265VdC/0C
	<4 VA
Insulation resistance	> 100 MS2
Reldys Motor rated voltage	
Motor rated current	AC220V / AC300V / AC000V
Impulse withstand voltage	4 W/
Measuring accuracy:	
Current	± 0 5% @ 10∼120% Ie
Voltage	± 0.5% @ 10~150% Ue
Frequency	± 0.1% @ 45~65Hz
Power factor	± 1% @ 0.0~1.0
Power	± 1% @ 0~500 kW
Leakage current	± 1% @ 10~100% Ir
Temperature	± 1% @ 0.1~30 K
Analog Output	± 1% (4 ~ 20mA)
External port:	
Comm port ⁽²⁾	RS485 MODBUS-RTU
commpore	Optional Profibus-DP
Digital input	Regular 7DI, max11 DI ⁽³⁾
Digital output	Regular 2DO, max 6DO ⁽⁴⁾
Analog Output	Optional 1AO
Working environment:	100 5500
Working temperature	-10C ~ +55°C
Storage temperature	-30C ~ +/0°C
Relative numidity	< 93% RH
Elevation	Less than 3000 m
Lieundal test.	IEC 60947-1
Standard reference	IEC 60947-1 IEC 60947-4
Electrostatic discharge	Severity: level III
Severity	Severity: level III
Surge	Severities: level III
Voltage Characteristics	Between two of the power / input / output between AC2kV/1min

- leakage sensor is optional accessaries.
 PR 260 have independent communication module, please refer ordering information.
 PR 260 have independent I/O module, optional active contact node(220Vac/dc or 110Vdc). Other models use passive contact node, relay body provide 15Vdc loop power.
- (4) PR 260 have independent I/O module, DO trip functions can free to configuration.

PR 200

Motor protection Relay

Description

PR200 motor protector is an all-in-one solution designed to continuously monitor 3-phase power lines for abnormal conditions. It can use with motors of any size or type.

When the PR200 sense the motor runs into the preset abnormal alarm value, PR200 will automatically trigger the release switch to shut down the circuit. Option RS485 communication port can upload the monitor data and alarm status to remote control system.

Features

- Low cost electronic design relay, can replace a variety of single function protection relays.
- Suit for Motor under 0.66KV.
- Build in 3P CT for current sampling, suit for current under 200A.
- 2 digital outputs for external control loops.
- Optional RS-485 network communications.
- Optional earth leakage sensor or analog output.







Wiring diagrams



Installation Dimensions



Split installation







Digital Motor Protector

PR 240 Split motor

protect relay

Description

PR 240 is an excellent choice for telemetry applications for Motor monitoring, metering, and control. Its small size, low cost and remote HMI options make the relay a perfect option for power distribution systems for such uses as end-of-line monitoring and power metering.

It offers low-voltage motor protection in virtually all applications, including pumping, air-based, chiller, and bulk-material applications. It can be configured as full range of medium-voltage, three-phase induction and synchronous motors protect relay.

Features

- Panel mounting HMI unit and Din-rail mounting control unit.
- Suit for Motor under 0.66KV and any current range.
- HMI unit provide 3-phase current voltage monitors, Power Measurement.
- Control unit build in 200A CT, out of range use ../5A CT connect.
- Abundant protection modes can be freely selected to alarm or trip.
- Can selected a variety of startup modes for different wiring application.
- RS-485 network communications.
- 4 digital outputs, and 7 digital inputs.
- Optional 1 programmable analog output.



Technical characteristics

IEEE / ANSI C37.2	PROTECTION FUNCTIONS
48	Max. Start Time
49, 51	Overload
51	Increased safety motors overload
51R	Over Current Level 1 - Jam
47	Phase loss
46	Current imbalance
50G/N, 51G/N	Ground fault
50	Over Current Level 2 - Short
32L	Under Power
38	Over temperature
59	Over voltage
27	Undervoltage
81U/81O	Abnormal frequency
55	Lead / Lag PF / Low Power Factor
74	Welded Contactor

Unit: mm

91

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0000000000000

Installation Dimensions



Front Viev



PR 260

Modular motor management

Description

PR 260 is modular design motor management device, accommodate more I/O modules. Flexible arrangement of motor control modes and state sensing. monitors voltage, current, and temperature to provide a comprehensive package of 22 protective functions. with integrated protection, motor control, metering, and data-logging functions.

This system is typically used to provide protection for three-phase low- and mediumvoltage, medium to high-horsepower induction motors.

Features

- Panel mounting HMI unit and Din-rail mounting control module.
- Suit for Motor under 0.66KV and any current range.
- HMI unit provide 3-phase current voltage monitors, Power Measurement.
- Control unit use ../5A CT connect.
- Abundant protection modes can be freely selected to alarm or trip.
- Can selected a variety of startup modes for different wiring application.
- 100 lists Waveform capture function, easy to trace back the fault.
- RS-485 network communications.
- 4 digital outputs, and 7 digital inputs.
- Optional 2 programmable analog output.
- Extra optional Modular:
- PR-26C extra 2* RS485 or 2* Profibus-DP port;
- PR-265 extra programmable 11*DI and 6*DO.
- Accept customized extra function module.







Technical characteristics

EE / ANSI C37.2	PROTECTION FUNCTIONS
48	Max. Start Time
49, 51	Overload
51	Increased safety motors overload
51R	Over Current Level 1 - Jam
47	Phase loss
46	Current imbalance
50G/N, 51G/N	Ground fault
50	Over Current Level 2 - Short
32L	Under Power
38	Over temperature
59	Over voltage
27	Undervoltage
81U/81O	Abnormal frequency
55	Lead / Lag PF / Low Power Factor
74	Welded Contactor
86 or 94	External fault
	Data logging
	Wave capture

Installation Dimensions



50	Acquisition module	
55	I/O Unit	
5C	Comm Unit	



B+A A B



Digital Motor Protector

Ordering Information

Products code	IEEE / ANSI C37.2	PR201	PR202	PR203	PR240	PR260	PR265	PR26C
PROTECTION FUNCTION								
Max. Start Time	48	•	•	•	•	•	-	-
Overload	49, 51	•	•	•	•	•	-	-
Increased safety motors overload	51	-	-	-	•	•	-	-
Over Current - Jam in starting	51R	•	•	•	•	•	-	-
Over Current - Jam in running	51R	-	•	•	•	•	-	-
Phase loss	47	•	•	•	•	•	-	-
Current imbalance	46	•	•	•	•	•	-	-
Over voltage	59	-	•	•	•	•	-	-
Undervoltage	27	-	•	•	•	•	-	-
Under Power	32L	-	•	•	•	•	-	-
Ground fault	50G/N, 51G/N	-	0	0	•	•	-	-
Over Current - Short	50	-	-	-	•	•	-	-
Over temperature	38	-	-	-	0	0	-	-
Abnormal frequency	81U/81O	-	-	-	•	•	-	-
Lead / Lag PF / Low Power Factor	55	-	-	-	•	•	-	-
Welded Contactor	74	-	-	-	•	•	-	-
External fault	86 or 94	-	-	-	-	•	-	-
Internal failure	3	-	-	-	-	•	-	-
Restart		-	-	-	•	•	-	-
START MODE								
Protection Only		•	•	•	•	•	-	-
Panel control start/stop		-	-	•	•	•	-	-
Forward and reverse start		-	-	•	•	•	-	-
Wye-Delta Transition		-	-	•	•	•	-	-
Autotransformer Closed Transition		-	-	-	•	•	-	-
Two-Winding		-	-	•	•	•	-	-
METERING FUNCTION								
Three phase amp		•	•	•	•	•	-	-
Voltage		-	•	•	•	•	-	-
Frequency, Power factory, Power		-	-	•	•	•	-	-
Wh, Varh		-	-	•	-	•	-	-
leakage current, unbalance rate		-	-	-	0	•	-	-
thermal capacity, thermal resistance	e	-	-	-	0	•	-	-
OTHER					,	, ,		
Digital Output		2	2	3	4	4	2	-
Digital Input		-	-	6	7	7	4 or 11	-
Analog Output		-	1	-	1	1	1	-
RS485 COMM, MODBUS-RTU		-	•	•	•	•	-	2
Profibus-DP		-	-	-	-	0	-	2
SOE		-	10	10	99	99	-	-
Record Statistics		-	-	-	•	•	-	-
Wave capture		-	-	-	-	•	-	-
Display		LED	LED	LCD	LCD	LCD	-	-

CT selection table

Motor rated Power kW	Rated current A	CT range
0.06	0.22	
0.12	0.42	
0.37	1	
0.55	1.5	104
0.75	2	104
1.1	2.5	
2.2	5	
3	6.5	
5.5	11	
7.5	14.8	
11	21	
15	28.5	
18.5	35	1004
22	42	100A
30	57	
37	69	
45	81	
55	100	

Accessories selection











Motor rated Power kW	Rated current A	CT range
75	135	
90	165	
110	200	
132	240	500/5
160	285	external CT
200	352	
220	420	
250	480	

Notes:

For more than 100A circuit, must use external 500/5A CT.
 CT secondary protection rate must 10A model.

For example: 75kW motor rated current is 135A, le of the motor protection relay setting 135/100=1.35A

Zero sequence transformer: Through Cable

Size(mm)								
φ	Α	В	С	D	E	F	G	н
45	77	85	24	38	54	9	64	54
80	112	122	28	56	80	14	89	80
100	131	136	24	66	96	14	108	107
150	200	209	28	100	145	16.5	184	177

Zero sequence transformer: Through Busbar

Size(mm)								
A1	B1	Α	В	С	D	E	F	G
.00	20	133	50	16	144	140	3	2
.00	25	133	60	24	154	143	9	2.5
.40	32	172	72	24	189	184	9	2.5
.80	32	212	72	24	229	224	9	2.5
220	45	254	86	24	269	264	11	2.5
260	45	294	86	24	309	304	11	2.5
300	45	334	86	24	349	344	11	2.5
120	45	454	86	24	469	464	11	2.5



Temperature Protection Relay

BJ-S digital temperature protection relay can replace the traditional bimetallic control switch, design to automatically control the install enclosure inside temperature & humidify variation within a specific range, reliable design can be used in the worst environment for longterm use. It is the ideal product to protect the normal efficient operation of electric equipment and to reduce cost.

With LED / LCD display, and optional RS485 communication port for remote monitoring. Optional customerized control logic design, can be used in other place need of temperature and humidity control.

Main Features

- Standard panel size 48x48mm / 72x72mm
- Optional 35mm DIN rail (only 48X48mm mode)
- 0.39" height LED, prevent dazzle, highly visible display
- Heat/Fan control mode free to configuration
- Self calibration technology, keep stabilization
- Products package include temperature / humidity probe

Technical characteristics

Dourowannahu	
Powersupply:	
Standard	85~265VAC 50/60Hz
Optional	24/48DC
Power consumption	<5VA
Input signal:	
Input signal channel Temperature sensor Humidity sensor Sampling ratio	Max 2 channels NTC (-20~99C) or customer request Digital type (0~99RH) or customer request 400ms
Control output port:	
Output channel	Max 2 channels
Other port:	
Linear output	DC 4020mA/005V optional
	Passive nodes
	RS-485 MODBUS RTU 4800/9600bauds
Other output port:	
IP protect	40
Isolation :	
Test voltage	Galvanic isolation between input, output circuits and auxiliary supply 1.5 KV RMS 50 Hz for 1 minute
Ambient temperature:	
Operating Storage	-10~55C -40~70C, 20 ~ 93%RH ; No condensing







Ordering Information

BJ - S 1 - W2S3-4-5-6

Series Name	Optional Type
1 papel size	42: For 72(W) x 72(H) x 96(D)mm
	Blank: standard 48(W) x 48(H) x 90(D)mm
2 temperature signal in	1: one channel temperature sensor input
	2: two channel temperature sensor input
3 humidity signal in	1: one channel humidity sensor input
	2: two channel humidity sensor input
	K1: one channel output
	K2: two channel output
5 communication port	R: one channel RS-485 communication port
	Blank: without this function
	Blank: NTC sensor(0.2% accuracy)
6 sensor type	T: thermocouple (-K, -J, -T, -E, -N, -R, -S, -B, -L, -U, -YXK)
	P: platinum RTD (-PT100- PT1000)
	L: linear signal (0~5V, 0~10V, 0~20mA, 4~20mA, 0~50mV)

Notes:

Product specifications will change from time to time. Please contact Blue Jay for latest specifications.
 Please confirm all the parameters with our staff before ordering.
 Have special requirements, please contact Blue Jay Technical Support Team: tech@cqbluejay.com

Install Dimensions









Install diagrams



Peltier Condenser

HD series peltier condenser using semiconductor technology, in a certain place of cabinet to lead controlled condensation, make the interior environment humidity fall to safe value. It is refrigerant-free cooling device, can used in switchgear, electrical cabinet, exchange control cabinets, outdoor terminal boxes etc.

It designed ultra-small install size, high efficiency energy-saving, do not need extra heater and fan wiring. And comes with the data acquisition module for remote monitoring, It's an efficient and reliable device to replace the old thermostat and heater / fan combination.



- Small size, easy for cabinet inside installation.
- Quickly reduce the switchgear internal humidity, exclude water out of air.
- Condensate water will be drained directly to the outside of the cabinet by the aqueduct.
- Automatic & manual dehumidification free to change, temperature start value and dehumidification start value adjustable.
- Real-time sampling temperature and humidity, support automatically working mode, do not extra sensor and probe.
- Build in memory to record settings, can keep original working mode after power recover.
- With diagnosis function, user can quickly find failure point to debug.
- Shell and internal components are well isolation design, can work in high humidity and strong electromagnetic field.
- Optional passive output node.
- Optional RS485 port.
- Optional external heater.



Dehumidification effect contrast





Before- Water on the wall

After- No water on the wall

HD 8000

Typical wiring

4

6

1 — Reserved 2 Reserved 12-Probe 3 — Reserved 13 Alarm NC Reserved Heater NO RS-485 8 GND 9 10 AUX

Notes: Wiring according to different product specifications are subject to change. Please reference to the label on product body!

Technical characteristics

	HD8000B	HD8000L	HD6001	HD6002	HD105	
Working power						
Power supply	85V~265VAC/DC 50Hz					
Peltier rated power ⁽¹⁾	30W, 40W, 60W optional 15W					
	350ml in 24h	350ml in 24h	300ml in 24h	300ml in 24h	100ml in 24h	
Dehumidifying capacity	Test in 60W	Test in 60W	Test in 30W	Test in 30W	Test in 15W	
	@35C, 90%RH	@35C, 90%RH	@35C, 90%RH	@35C, 90%RH	@35C, 90%RH	
Measurement and ability					I	
Humidity monitor range			20%RH~98%RH			
Sensor accuracy ⁽²⁾			±5%RH			
Dehumidify start threshold		45%RF	l∼98%RH, Default	65%RH		
Envoirment temperature			5~60°C			
Temperature monitor range		-40~	80°C		/	
Sensor accuracy		±1.	0°C		/	
Heater start threshold		1~55°C, E	Default 5°C		/	
Heater power ⁽³⁾		50~500V	V optional		/	
Other						
Physical dimension	130*243*60	134.5*130*68.5	100*174*70	100*144*60	73*88*52	
Enclosure material	Sheet metal with anti-rust spray	Aluminum alloy	ABS	ABS	ABS	
Screen	2*3 digital LED	2digital LED	2*3 digital LED	2*3 digital LED	2digital LED	
Standards	IEC60255-22-1					
Comm interface	RS485, modbus-RTU					
Style image						



Notes:

- 1. The choice of rated power is related to the cabinet inner volume and airtightness, and the general reference value is: 0.5cubic meter cabinet choose 15W
- 1.0cubic meter cabinet choose 30W
- 1.5cubic meter cabinet choose 40W
- 2.0cubic meter cabinet choose 60W
- Cabinet volume are calculated according to the inner diameter, Length*Width*Height
- Sensor accuracy 5% is test with inside probe, products optional external cable type sensor. Please contact sales team before order.
 Device provide passive NO contact for external heater connection, capacity is AC250V5A. User can free to order heater or purchase with DH series.





Introduction

Blue Jay focus on medium voltage switchgear and its key component, the circuit breaker safty. Have solution to provide 7*24 hours switchgear monitor device.

Multiple styles of remote sensors node can deal with different electrical contacts, cables insulation failure and set alarm threshold of risk. Panel mount HMI unit have acousto-optic alarm and DO port, user can free to build various automatic alarm / control system. Equipped RS485 port can connect existing SCADA system for remote sensering control.

It can protects your electrical assets from costly outages; while increasing safety via remotely monitoring equipment. This also increases asset integrity, and minimizes downtime.



Integrated CB control panel (CBM3000) • CB switch status indicate

- CB switching operation
- Integrate PMD and other functions

Thermal Monitoring (W3000)

- Surface touch or infrared sensor
- Cable terminations
- CB contact fingers
- Busbar joints

Partial Discharge Monitoring (PD 3000)

- TEV and ultrasonic sensor
- PD detection
- PD localization

Arc Flash Protective (AFR)

- High precision fiber probe
- Arc detection
- Arc localization
- Fault protection

Typical system overall







Optional configuration of device

Connected sensor	CBM3000	W3000	PD3000	AFR	RC
SCM-D120	-	•		-	-
SCM-D96	-	0	0	-	-
SCM-BAT-S	0	•	0	0	-
SCM-SAW-S	0	0	0	0	-
SCM-SAW-S	0	0	0	0	-
SCM-PDS	-	-		0	-
PT100	-	-	-	-	0
Zero sequence CT	-	-	-	-	•
SCM-MK	0	-	-	•	-
SCM-OPUV	-	-	-	0	-
SCM-OPVL	-	-	-	0	-







СМ

Notes:

- 1. According to different application scenarios, the product has independent function series, please refer to the details page below for details.
- 2. Wireless sensors of some products can be used interchangeably, for example, W3000 and PD3000 can be integrated together.
- 3. Blue Jay can provide HMI, TCP/IP converter and cloud solutions, please contact sales team for more details.





Partial Discharge Monitor

SCM-PD3000 provide continuously monitors of partial discharge (PD) in equipment such as transformers, cables in switchgear and rotating machines etc.

It analyzes RF emissions in the HF, VHF and lower UHF ranges by sensors outside the cabinet. HMI unit provides site display of TEV amplitude, ultrasonic amplitude, DO port can drive local alarms, Multi-level alarm notice site engineer. SCM-PD3000 also can communicate data and notifications across standard RS485 modbus interface to networked supervisory systems.

Features

- Rugged, compact design sensor detect TEV and audible ultrasonic.
- Non-intrusive and wall-mounted unit design, magnetic adsorption easy installation.
- Panel mount HMI unit provide automatic PD data acquisition and analysis.
- HMI support max 96pcs sensor, optional wireless and wired(RS485) connection.
- Multiple configurable alarms, provide 2*DO NC & NO contact for external alarm trig.
- RS 485 MODBUS-RTU easy integration into existing SCADA systems.

Applications

- HV / MV switchgear
- Transformer Bushings
- Breaker Bushings
- condensing / capacitive type bushings



Technical characteristics

MI electrical parameters	85-265Vac/dc
Auxiliary Power	20-60Vdc Optional
Power consumption	<6W
Communication	RS-485, MODBUS-RTU
Digital output	2* NC & NO, passive node
Enviorment temperature	-10 ~ +60°C
Enviorment humidity	RH 20% ~ 95% (No condensation)
Dimensions (L × W × H)	144*144*100mm
Open install hole	138*138mm
emote sensor common	
Power supply	12Vdc or 2000mAh build in battery*
Wireless band*	433Mhz ~2.4Ghz optional
Signal transmission distance	Up to 80m (260 feet)
Static power consumption	<10mW
Installation method	4* strong magnet, wall mount
EV sensor	
Detect range	0~60 dBmV
HF Frequency Response	3~100MHz
Resolution / Accuracy	1dBmV / ±1dBmV
lltrasound sensor	
Detect range	-7dBµV ~ 68dBµV
Resolution / Accuracy	1dB / ±1dB
Sensitivity	-65 dB (0 dB=1 volt/µbar rms SPL)
Sensor Center Frequency	40 kHz

Notes: wireless sensor node is optional, use LoRA Standard sensor is 12Vdc, RS-485 Daisy chain connect to HMI unit.



SCM-PDS TEV detect sensor As specifications list

Switchgear Thermal Monitor

SCM-W3000 wireless temperature monitor can help medium-low voltage switchgear operators and maintenance engineers, to reduce safety risks from sudden temperature increases in switchgear components. It provide 7*24 / 365 Days switchgear monitor for critical busbar joints.

Multiple styles of remote sensors node can deal with different electrical contacts, SCM-W3000 support max 32 monitoring node for single switchgear. Panel mount HMI unit have two-level alarm acousto-optic alarm and DO port, user can free to build various automatic alarm / control system. Equipped RS485 port can connect existing SCADA system for remote sensering control.

It can protects your electrical assets from costly outages; while increasing safety via remotely monitoring equipment. This also increases asset integrity, and minimizes downtime.

Install positions

Hot spots can arise in busbars, circuit breaker contacts, cables, or anywhere where a joint or connection point exists. Critical monitoring points may include:

- Line and load side of Air Circuit Breakers (ACB)
- Bus bar joints
- Inside the lower and upper contacts of VCB connected to main bus bar and feeder bus bar circuits
- Stabs / disconnect switches
- Connections on Current Transformers (CT)
- Incoming cable / feeder joints
- Joints on the main bus bar
- Voltage Transformer (VT) electrical joints







Technical characteristics

HMI electrical parameters	
Auxiliary Power	85-265Vac/dc
	20-60Vdc Optional
Power consumption	<6W
Communication	RS-485, MODBUS-RTU
Digital output	2* NC & NO, passive node
Enviorment temperature	-10 ~ +60°C
Enviorment humidity	RH 20% ~ 95% (No condensation)
Dimensions ($L \times W \times H$)	96*96*85mm or 144*144*100mm
Open install hole	91*91mm or 138*138mm
Remote sensor node	
Wireless band	433Mhz ~2.4Ghz optional
Signal transmission distance	Up to 80m (260 feet)
Static power consumption	<10mW
Temperature monitor range	-20~250C
Measurement accuracy	±2%
Body withstand temperature	70°C
Installation mothod	Silicone strap self binding,
Installation method	Metal ring band fixing
SC	M-SAW-S Remote wireless node
- 0-	65C accuracy 0 5C
- M	aintenance free during life cycle
- Su	itable for flat surfaces or VCB contacts



- Surface acoustic wave (SAW)
- Maintenance free during life cycle
- External wiring probe for irregular surface

SCM-BAT-S Remote wireless node

- Battery powered, 2000mAh for 2~4 years*
- Green/Yellow/Red color for three phase
- Suitable for flat surfaces or VCB contacts
- *test under 2min data transmit interval





Circuit Breaker Manager

CBM3000 Series circuit breaker manager is an integrated control relay, designed for 3KV to 35KV indoor switchgear, used for replace multiple components in LV compartment, can reduce LV panel space occupation.

On it's panel it provide primary circuit simulation diagram, switch indicator, VCB status & control switch, environment control, high voltage indicator etc. Special sound prompt function can remind staff to operate the switchgear safely.

It can be used in various types of switchgear such as GZS (Centrally Installed Switchgear), Handcart Cabinet, Fixed Cabinets, Ring Main Unit, etc.

Functions

Indicative

- High voltage indicator
- VCB trip-closed indicator
- Spring storage indicator
- Grounding switch status indicator
- VCB contact position indicator

Control Switch

- Manual / Automatic spring storage select switch
- VCB trip/ closed operation switch
- Remote / Local operation switch

Other

- Compartment environment indication & control
- Three-phase power measurement (PMD) *
- Human proximity sensor*
- Voice prompts for prevent faulty operation*
- Busbar joints thermal monitor*

Notes: Functions marked * is optional function, details please contact sales team



Technical characteristics

Basic parameters	
Auxiliary Power	85~265Vac/dc
Power consumption	15VA
Display screen	LCD with 4 button operation key
Communication	RS-485, MODBUS-RTU
Enviorment temperature	-10 ~ +60°C
Enviorment humidity	RH 20% ~ 95% (No condensation)
Altitude	<3000m
Withstand voltage	AC2000V/1min
Dielectric strength	100Mohm
Electromagnetic compatibility	Comply with IEC255-22
Dimensions	250x190x68mm (WxHxD)
Install hole open	226x165mm
Tempearture protection relay	
Temperature set range	-20C ~80C
Resolution	0.1C
Humidity set range	0% ~ 100%
Resolution	0.1%RH
Integrate power metering	
Network	1P2W, 3P3W, 3P4W
Rated voltage	AC100V, 220V, 380V depends on VT
Burden	<0.1VA (Per phase)
Rated current	AC1A, 5A depends on CT
Burden	<0.4VA (Per phase)
Accuracy level	full scale 0.5%, RMS
Frequency range	40~65Hz, accuracy: ±0.02Hz
Power	KW and Kvar, accuracy: 0.5%
Energy	Kwh 0.5S class, Kvarh 2.0 class
Other protection functions	
High voltage indicator sensitive	[Rated voltage] x 0.15~0.65
Door lock relay act voltage	>[Rated voltage] x 0.65
otes:	
lotes: . If site have high-voltage sensor, the output	short-circuit current must > 220uA±10%

high-voltage sensor capacitator reference is as follows: 6kV switchgear: 130-160pF; 10kV switchgear: 90-140pF;

- 35kV switchgear: 35-55pF

RCM series are combined monitoring device for earthed power supply systems (TN-C-S, TN-S

Residual-current monitor

and TT) residual current. It provide max 16 monitor channels, 96x96 size panel mounting design suit for any electrical cabinet. LED screen display various parameters, easy for site engineer diagnosis and Insulation test

It can optionally be carried out by selected current transformer or temperature sensor for each channel detect parameter and alarm or trip threshold. Multiple RCM can combination with circuit breaker for build MRCD applications, RS485 port can easy submit data to SCADA systems.

Features

- Continuous monitoring of residual currents
- Max 16 measuring channels for residual current or temperature input
- History memory with date and time stamp for 100 event data records
- Backlit graphical display (7-segment display) and indicate LEDs
- Two alarm relays, free to set alarm or trip logic
- Built-in buzzer provide sound notice when alarm trigged
- · Password protection for device setting

Typical wiring











Technical characteristics

ctrical Characteristics	
Power supply	35~265Vac/dc
Consumption	<5VA
Residual current accuracy	1%
Temperature accuracy	±2°C
Data refresh rate	1sec
Binary inputs	Passive node, isolation voltage 2000VAC
Relay output	AC 250V/5A or DC 30V/5A, 2500V optocoupler isolation
Comm port	RS485 Modbus-RTU protocol, baud rate up to 19200bps
ers	
Physical dimension	96*96*75mm (L*W*H)
Protection class	[P20
Weight).55kg
Working enviorment	-10~55°C
Measurement category	CAT-III, polution grade 2
Insulation capacity	> AC 2kV signal - power - output
Reference standard	IEC 61000-4-2, class III IEC 61000-4-3, class III IEC 61000-4-4, class IV IEC 61000-4-5, class IV IEC 61000-4-6, class III IEC 61000-4-8, class III IEC 61000-4-11, class III

Ordering selection

-16IN	16 Residual Current sensor
-8IN8T	8 Residual Current sensor, 8 Temperature sensor
-8IN	8 Residual Current sensor, 8 Temperature sensor
4IN4T	4 Residual Current sensor, 4 Temperature sensor





Arc Flash Protective Relay

AFR arc flash protective relay is a costeffective solution that reduces arc-fault damage by detecting the light from an arc flash and rapidly tripping in low-voltage (LV) and medium-voltage (MV) electrical networks. three remote light sensors can be connected to one relay.

It used to limits damages to equipment, improve safety, avoid and protect personnel injuries. It's also can be used as a stand-alone arc protection relay or applied in more complex switchgear layouts.

Features

- Panel mounting design.
- 3-phase current and earth-fault current measurement.
- Informative display on LCD screen.
- Less than 10 ms operation time (including the output relay).
- Multiple passive DI point, indicate CB status.
- Multiple trip contacts, free to configuration NC / NO status.
- Programmable CB protect trip logic.
- Optional extra monitor functions by RS-485 connection, user can customized.
- Support OEM and add customized program for VCB control and protection logic.

Accessories











400 0000000

Wiring Schematic



AFR-S Single switchgear protection



AFR-M Multiple switchgear protection

Technical characteristics

	AFR-S	AFR-M12	AFR-M24	AFR-M36	AFR-M48
Basic parameter					
Power supply	8	85~265Vac/dc, optional 48Vdc			
Consumption	Monitoring stanby <5W DO trigged <10W		Monitoring s DO trigg	stanby <8W ed <10W	
Rated current (In)		5A o	or 1A		
Protection range		0~2	20 In		
Burden		0.	5VA		
Protect current accuracy		<	2%		
Protect frequence accura	су	0.1	1Hz		
Arc signal & control					
Sensor type	lenspoint fiber o	ptic sensors(1) or bare fibe	r optic sensors	5(2)
Arc sensor access channe	els 3	12	24	36	48
DO relay channels	6	4	4	9	9
Trip coil contact	AC2	50V/8A fast r	elay, passive	node	
Trip operation time	<20n	<10ms @ only arc protection <20ms @ overcurrent + arc protection			
Safty isolation		2500V isolation capacitry			
Binary inputs	5	12	12	16	16
Others					
Comm prot	RS485 MODBUS-RTU	Defa	1* RS485 M 1* 10/100 nult 192.168.1 IEC-608	10DBUS-RTU M Adaptive 12.2/192.168. 70-5-103	13.2
SOE record	512	512	512	512	512
Waveform capture	/	8	8	8	8
Optional modules	Wire	Wireless joints temperature monitor Smoke detector			

Notes: wireless sensor node is optional, use LoRA Standard sensor is 12Vdc, RS-485 Daisy chain connect to HMI unit.

Install dimension and terminal definition

A-Pwr boi

 A16
 Free DC 16

 A17
 CDM terminal

 A18
 Loop parent

 A19
 ut(INC)

 A20
 L/+

 A21
 N/

 A22
 FOND











AFR-M