

# MVC4 Spare Parts List

## 1. CPU & Main Firing Board

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**Model: MVC4-MB/CPU-MTR**

**Rating: All ratings**

**Qty Per Unit: 1**

**Size(W\*D\*H): 243\*273\*95mm Weight: 1.28kg**

# MVC4 Spare Parts List

## 1-1. CPU board

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**Model: MVC4-CPU**

**Rating: All ratings**

**Qty Per Unit: 1**

**Description:**

**CPU Board** is where the microprocessor and communications co-processor are located. It is attached to the main Power board. The CPU determines operating functions, stores user programming, acts upon feedback signals for faults, and calculates metering and historical data. The board communicates with the Keypad Operator Interface via a serial link cable. Analog and Digital I/O are also located on the CPU board

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# MVC4 Spare Parts List

## 1-2. Main Firing Board(Power board)

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**Model: MVC4-Main Firing Board**

**Rating: All ratings**

**Qty Per Unit: 1**

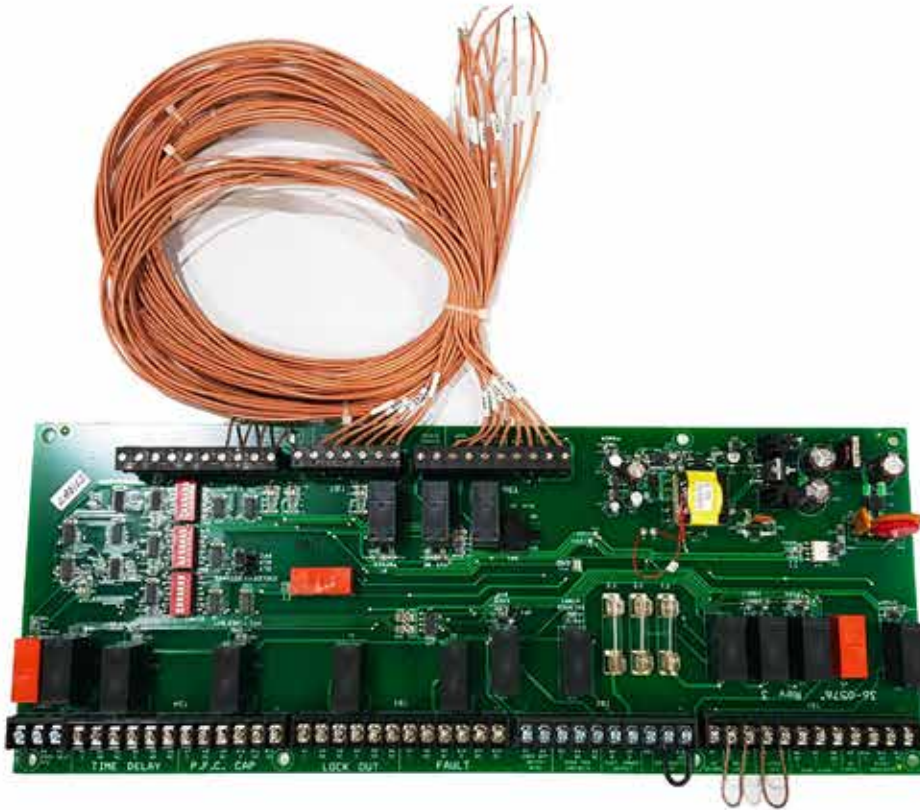
**Description:**

**Main Board** also referred to as the Firing Board, contains the Auxiliary I/O relays and interfaces to the TCB board for user interface. This board generates all firing signals for the SCR stacks and receives feedback signals which are isolated via fiber optics. The board also provides signal conditioning in preparation for analog to digital conversion.

# MVC4 Spare Parts List

## 2. TCB Board (Terminal and Control Board)

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**Model: MVC4 -TCB**

**Rating: All ratings**

**Qty Per Unit: 1**

**Size(W\*D): 165\*430mm**

**Weight: 0.88kg**

### **Description:**

**TCB (Terminal and Control Board)** is the user connection interface board. This board contains the user terminal blocks, output relays (duplicated), inputs and control power connections. It also contains additional timed relays for interfacing with Power Factor Correction contactors (if used) and other external devices.

# MVC4 Spare Parts List

## 3. Digital controller with lexan cover & harness (key pad & display)

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**Model: DSS1000-COM-KIT**

**Rating: All ratings**

**Qty Per Unit: 1**

**Size(W\*D\*H): 177\*202\*57mm**

**Weight: 0.72kg**

### **Description:**

Keypad Operator Interface is a 2 line x 20 character LCD display with back-lighting for low ambient light conditions. The display reads out in truncated English and can show multiple data points in each screen. Twelve LED indicators are included which show the status of, Power, RUN, ALARM, TRIP and the 8 AUX RELAYS. The Operator communicates with the CPU board via a serial cable link and can be remotely located up to 1000ft. from the starter.

# MVC4 Spare Parts List

## 4. Gate drive boards

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Voltage	Model	Rating	Qty per unit
2300V	MVC4-GDF	$\leq 400A$	3
	MVC4-GDFP	$\geq 500A$	6
3300 / 4160V	MVC4-GDF	$\leq 400A$	6
	MVC4-GDFP	$\geq 500A$	12
6600 / 7200V	MVC4-GDF	$\leq 400A$	15
	MVC4-GDFP	$\geq 500A$	18
11 / 13.8KV	MVC4-GDF	$\leq 300A$	18
	MVC4-GDFP	$\geq 600A$	18

**Size(W\*D): 191\*117mm**

### **Description:**

Gate Drive Boards are located directly on the SCR stacks. These boards connect to the Main Power board via fiber optic cables. They amplify the gate pulse signals with power from the Ring Transformers to create the Sustained Pulse Firing of the SCRs. There is one Gate Drive board for each pair of SCRs in each stack.

# MVC4 Spare Parts List

## 5. Temperature and current board

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**Model: MVC4 -TEMP/CT-PS**

**Rating: 100-400A**

**Qty Per Unit: 3**

**Size(W\*D): 127\*76mm**

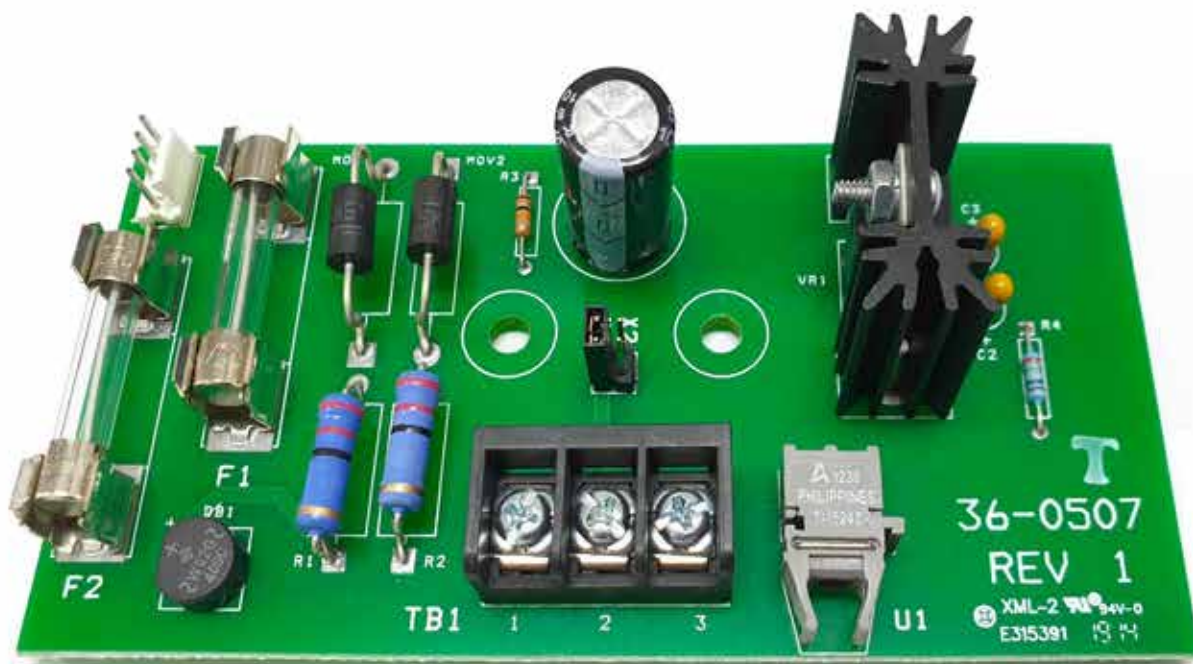
**Description:**

Temp / CT Boards are attached to the Gate Drive boards on the SCR stacks and provide the heat sink Temperature and line current signals back to the Main Power Board via fiber optic cables.

# MVC4 Spare Parts List

## 6. Temperature board

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**Model: MVC4 -TEMP**

**Qty Per Unit: 3 (~7.2kV)**

**Qty Per Unit: 9 (11kV~)**

**Size(W\*D): 127\*76mm**

### **Description:**

Temp Board is attached to the Gate Drive boards on the SCR stacks and provide the heat sink Temperature and back to the Main Power Board via fiber optic cables.



# MVC4 Spare Parts List

## 7. MOV board

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Voltage	Model	Ratings	Qty Per Unit
2300V	MVC4 - MOV	$\leq 400A$	3
	MVC4 - MOV	$\geq 500A$	6
3300 / 4160V	MVC4 - MOV	$\leq 400A$	6
	MVC4 - MOV	$\geq 500A$	12
6600 / 7200V	MVC4 - MOV	$\leq 400A$	15
	MVC4 - MOV	$\geq 500A$	18

Size(W\*D): 111\*263mm

### Description:

**MOV Boards** are attached to standoffs mounted on the SCR heat sinks and are mounted directly below the Gate Drive boards. The MOV boards are used to protect the SCRs from over voltage.

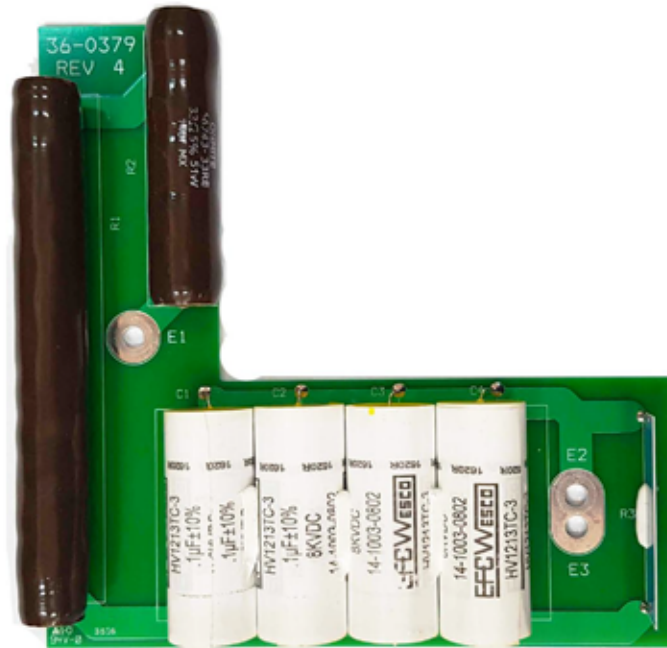


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# MVC4 Spare Parts List

## 8. DV/DT board

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Voltage	Model	Ratings	Qty Per Unit
2300V	MVC4-DVDT	$\leq 400A$	3
	MVC4-DVDT-5-200	$\geq 500A$	6
3300 / 4160V	MVC4-DVDT	$\leq 400A$	6
	MVC4-DVDT-5-200	$\geq 500A$	12
6600 / 7200V	MVC4-DVDT-150-72	$\leq 400A$	15
	MVC4-DVDT-5-200	$\geq 500A$	18
11KV / 13.8KV	MVC4-DVDT-150	$\leq 300A$	18
	MVC4-DVDT-5-200	$\geq 600A$	36

Size(W\*D): 205\*205mm

### Description:

**DV/DT Boards** are also attached to standoffs mounted on the SCR heat sinks and are mounted below the MOV boards. The DV/DT boards are used to mitigate voltage transients across the stack assemblies.

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# MVC4 Spare Parts List

## 9. C.T(Current Transformers)

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11 - 2 RL - 500

<b>Windows Size</b>	<b>Style</b>	<b>Ratio</b>
2 - 1.05 inch	RL = Round with Leads	500 = 50:5 / 750 = 75:5
56 - 2.06 inch	SFT = Sq w/ Terminals and Feet	101 = 100:5 / 151 = 150:5
8 - 3.25 inch	SHT = Sq with Terminals	201 = 200:5 / 251 = 250:5
6=2.06 inch		301 = 300:5 / 401 = 400:5
		501 = 500:5 / 601 = 600:5
		751 = 750:5 / 801 = 800:5
		102 = 1000:5 / 122 = 1200:5
		152 = 1500:5 / 162 = 1600:5
		202 = 2000:5

※ CONTACT FACTORY

**Model :**

1\_ 11-8RL-101 (100:5) Size(W\*D\*H) : 100\*100\*25mm / Weight : 0.54 kg

2\_ 11-8RL-751 (750:5)

3\_ 11-6RL-102 (1000:5)

**Qty per unit : 3**

**Description:**

A current transformer (CT) is a type of transformer that is used to measure alternating current (AC). It produces a current in its secondary which is proportional to the current in its primary.

# MVC4 Spare Parts List

## 10. Potential Transformers (3PT)

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Voltage	Model	Ratings	Qty Per Unit
2300V	PE-61F-2.3KV	ALL	2
3300V	PE-61F-3.3KV	ALL	2
4160V	PE-61F-4.1KV	ALL	2
6600 / 7200V	PE-61F-6.6/7.2KV	ALL	2
11KV	PE-63F-11KV	ALL	2

**Model: PE-61F-6.6/7.2KV**

**Size(W\*D\*H): 170\*170\*200mm / Weight: 9.42kg**

※ Please contact the factory for other model sizes.

### **Description:**

Transformer for instruments with primary winding parallel to the power circuit for measuring or controlling the power voltage. Three phase construction. Single or two bushing designs. Wide range of ratios with 120V secondary as standard (other secondary voltages available).

Vacuum resin encapsulated construction. Various mounting options. Supplied with or without primary fuses. All transformers are partial discharge tested.

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# MVC4 Spare Parts List

## 11. Control Power Transformers (CPT)

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Voltage	Model	Ratings	Qty Per Unit
2300V	PE-63F-2.3KV	ALL	1
3300V	PE-63F-3.3KV	ALL	1
4160V	PE-63F-4.1KV	ALL	1
6600 / 7200V	PE-63F-6.6/7.2KV	ALL	1
11KV	PE-17F-11KV	ALL	1

### Model: PE-63F-6.6/7.2KV

Size(W\*D\*H): 210\*330\*300mm

Weight: 28.96kg

※ Please contact the factory for other model sizes.

### Description:

Supplied with fuses. Wide range of ratios with 120V secondary as standard. Other secondary voltages available. Dual ratio options available. Vacuum resin encapsulated construction. All transformers are partial discharge tested.

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# MVC4 Spare Parts List

## 12. Gate Drive Transformer (ring transformer)

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Voltage	Model	Ratings	Qty Per Unit
2300V	10-0090	≤400A	3
	10-0090	≥500A	6
3300 / 4160V	10-0090	≤400A	6
	10-0090	≥500A	12
6600 / 7200V	10-0090	≤400A	9
	10-0090	≥500A	12
13.8KV	10-0090A	≤600A	18

**Size(W\*D\*H):** 180\*100\*125mm

**Weight:** 4.4kg

### Description:

Power transformer for Gate Drive Boards control power.

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# MVC4 Spare Parts List

## 13. MVF Series - Medium Voltage Contactor (V.C)



Voltage	Model	Ratings	Qty Per Unit
11000V	34-400-3-12000	400A	3
	34-630-3-12000	630A	3
	34-800-3-12000	800A	3
2300-7200V	34-200-3-7200	200A	2
	34-400-3-7200	400A	2
	34-630-3-7200	630A	2

### Model: 34-200-3-7200

Size(W\*D\*H): 375\*375\*285mm    Weight: 23.1kg

※ Please contact the factory for other model sizes.

### Description:

7.2kV Class-400A : 'Non-Latching' and 'Latching' Series of medium voltage three-phase vacuum contactors can be used in power systems with a rated voltage up to 7.2 kV and can be used for continuous AC operating currents of up to 400 amperes. Control voltage for the contactor is AC/DC 100~125V or AC/DC 200~230V\*, including an auxiliary relay with 3 NO and 2NC contacts.

# MVC4 Spare Parts List

## 14. Medium voltage fuses

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Voltage	Model	Ratings	Qty Per Unit
2300V	52-9R-2400	FLA dependent (check unit for actual fuse rating used)	3
	52-12R-2400		3
	52-18R-2400		3
3300 / 4160V	52-9R-4800		3
	52-12R-4800		3
	52-18R-4800		3
6600 / 7200V	52-9R-7200		3
	52-12R-7200		3
	52-18R-7200		3

**Size(W\*D\*H): 200\*60\*60mm**

**Weight: 1.12kg**



# MVC4 Spare Parts List

## 15. Line Inductor

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Specification	Model	Qty Per Unit
MVC4-33200-E-K	11-0053A-33200-K	3
MVC4-33400-E-K	11-0053A-33400-K	3
MVC4-33600-E-K	11-0053B-33600	3
MVC4-33800-E-K	11-0054B-33800	3
MVC4-41200-E-K	11-0053A-44200-K	3
MVC4-41400-E-K	11-0053A-44400-K	3
MVC4-41600-E-K	11-0053B-44600	3
MVC4-41800-E-K	11-0054B-44800	3
MVC4-66200-E-K	11-0053A-66200-K	3
MVC4-66400-E-K	11-0053A-66400-K	3
MVC4-66600-E-K	11-0053B-66600	3
MVC4-66800-E-K	11-0054B-66800	3

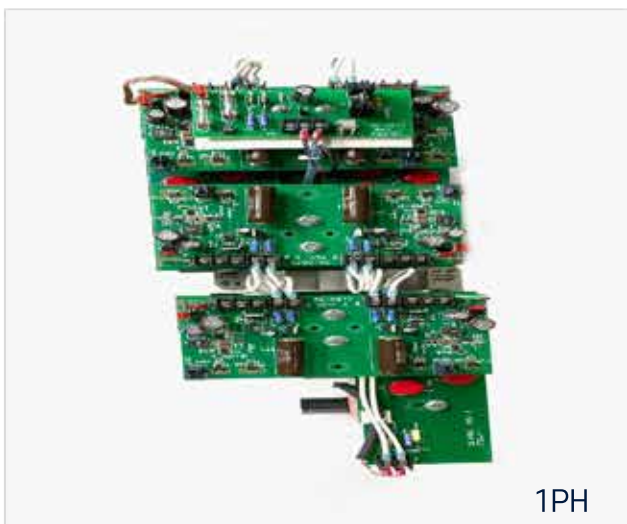
**Model: 11-0053A/B, 11-0054B**

**Size(W\*D\*H): 210\*365\*175mm    Weight: 4.4kg: 22.68kg**

※ Please contact the factory for other model sizes.

# MVC4 Spare Parts List

## 16. SCR STACK



1PH



3PH

Voltage	Model	Ratings	Qty Per Unit
2300V	MVC4-STK23100	100A	3
	MVC4-STK23200	200A	3
	MVC4-STK23400	400A	3
	MVC4-STK23500	500A	3
	MVC4-STK23600	600A	3
3300V / 4160V	MVC4-STK33100/STK41100	100A	3
	MVC4-STK33200/STK41200	200A	3
	MVC4-STK33400/STK41400	400A	3
	MVC4-STK33500/STK41500	500A	3
	MVC4-STK33600/STK41600	600A	3
	MVC4-STK33800/STK41800	800A	3
6000V / 6600V	MVC4-STK60100/STK66100	100A	3
	MVC4-STK60200/STK66200	200A	3
	MVC4-STK60400/STK66400	400A	3
	MVC4-STK60500/STK66500	500A	3
	MVC4-STK60600/STK66600	600A	3
11KV / 13.8KV	MVC4-200 11 POLE / 200 13 POLE	200A	3
	MVC4-320 11 POLE / 320 13 POLE	320A	3
	MVC4-500 11 POLE / 500 13 POLE	500A	3
	MVC4-600 11 POLE / 600 13 POLE	600A	3

※ Please contact Factory over 800A SCR Stack



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# MVC4 Spare Parts List

## 17. ZCT (Zero Current Transformer) - option

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### Model :

1\_ MVC4-ZCT 11-0029B / Size: 170\*170\*35mm / Weight: 1.58kg

2\_ MVC4-ZCT 11-0029C / Size: 281\*291\*72mm / Weight: 1.58kg

Qty per unit : 3

### Description:

The ZCT is compact molded-type, zero-phase current transformers ideal for improving the sensitivity, compactness and lightweight of electric shock prevention.



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# MVC4 Spare Parts List

## 18. 3CT Board

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**Model : MVC4-3CT**

**Rating : All ratings**

**Size(W\*D): 152\*152mm**

**Weight: 0.42kg**

**Qty Per Unit: 1.**

### **Description:**

Line current signals back to the main power board via fiber optic cables.



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# MVC4 Spare Parts List

## 19. RTD (Resistance Temperature Detector) - option

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**Model : DSS1000-RTD**

**Size(W\*D): 177\*140mm**

**Qty Per Unit: 1**

**Description:**

An RTD (resistance temperature detector) is a temperature sensor that operates on the measurement principle that a material's electrical resistance changes with temperature.

# MVC4 Spare Parts List

## 20. TE-RTD12

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### MODEL: TE-RTD12

Size(H\*W\*D) : 225\*157\*78mm

Qty Per Unit: 1

Control Voltage: 110-240Vac Nominal 50/60Hz

Inputs: 12RTD inputs (PT100, NI100, NI120, cU10), 3 CT inputs for differential CT's 2 isolated 4-20mA analog inputs, 3 isolated Digital Inputs.

Outputs: 3 programmable form C Relays with 5a contact rating, One isolated 4-20mA analog output

### Description:

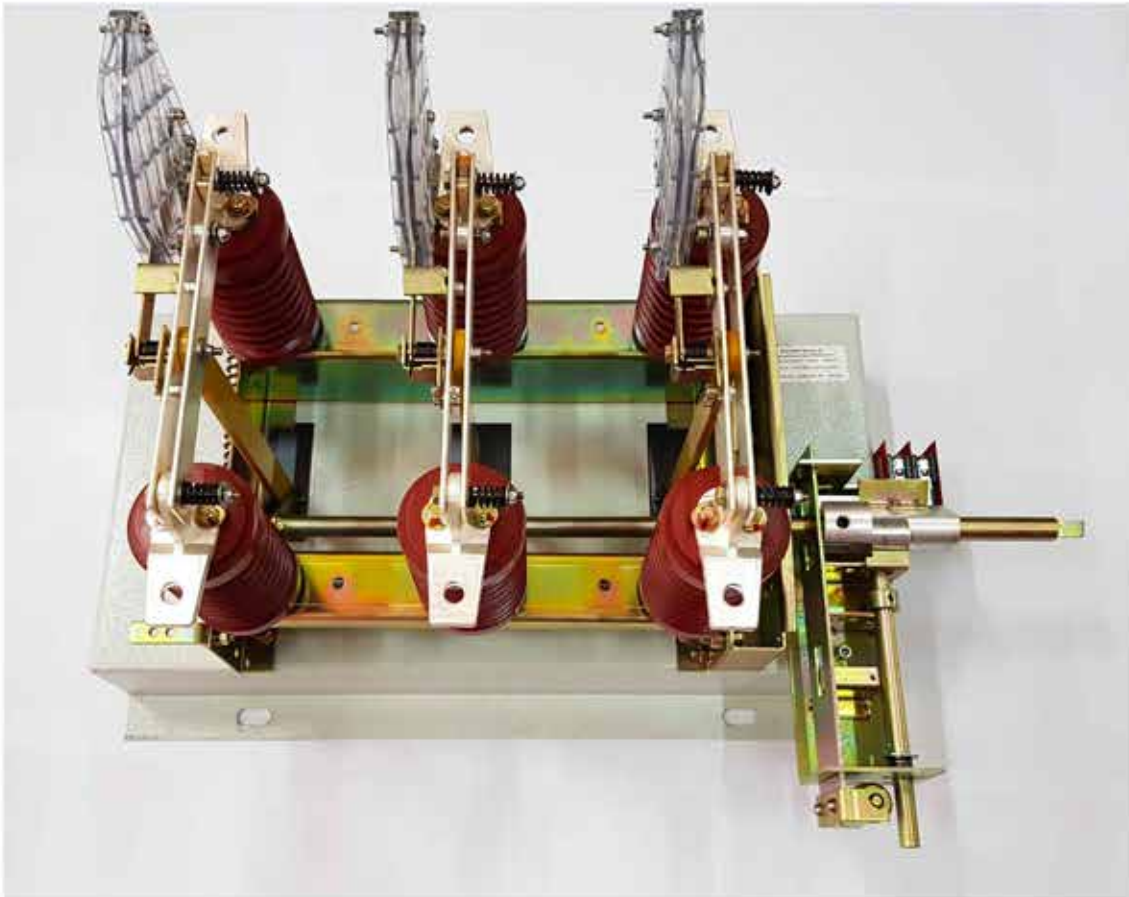
The TE-RTD Relay device adds advanced RTD and Current monitoring capability to your new or existing motor system. The TE-RTD Relay device offers 12 built-in RTD inputs, 3 programmable output relays(5A), 2 isolated analog inputs(420mA), 3 isolated digital inputs, 1 isolated analog output (20mA) and differential current feedback monitoring.

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# MVC4 Spare Parts List

## 21. LBS(Load Break Disconnect Switch)

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※ Contact factory

**MODEL: MVC4-LBS 7.2KV 400A**

**Qty Per Unit: 1**

### **Description:**

A load break switch is a disconnect switch that has been designed to provide making or breaking of specified currents.

# MVC4 Spare Parts List

## 22. GFCT board

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**Model: MVC4-GFCT**

**Qty Per Unit: 1**

**Rating: All ratings**

**Size(W\*D): 100\*100mm**

**Description:**

Zero Current Transformer signals back to the main power board via fiber optic cables