TOSHIBA

MOTOR MULTI-RELAY CCR23 for Motor Control Center

A new motor multi-relay that reflects customer needs to be more user-friendly

Equipped with deterioration monitoring functions of motor as standard. Continuous monitoring the motor on behalf of maintenance staffs.



FEATURES

- 1.Equipped with continuous motor monitoring function. Improve plant system reliability.
- 2. The layout improves visibility.
- 3. Digital display panel adopts two colors 7-segment LED.
- 4.Equipped with USB Type-C port to connect PC. During maintenance and inspection,
- power supply to multi-relay from PC is available. 5.Replace the existing multi-relay is easy.
- (Mounting is compatible with existing multi-relay)

DETERIORATION MONITORING FUNCTION

 The motor and main circuit wire deterioration monitoring functions are included as standard features.
Applicable without adding sensors.
Monitoring targets : Insulation deterioration for motor and main circuit ^{*1) *2)} / Layer short / Abnormal belt

RELIABILITY

- Electrolytic capacitors with high quality are adopted to extend the service life.
- Gold plated items are adopted at the contacts of switches and connectors, so the board configuration is resistant to corrosive gases.
- Adopting switch-less current converter, and improve reliability.

TRANSMISSION FUNCTION

- The field network supports CC-Link *³, PROFIBUS *⁴, TOSLINE*⁵-F10M (All-options)
- * 1) A zero-phase current transformer is required for monitoring. Use a unit with earth fault protection.
- * 2) Insulation deterioration monitoring can only be used with 400V-460V AC.
- * 3) CC-Link is a registered trademark of Mitsubishi Electric Corporation.
- * 4) PROFIBUS is a registered trademark of PROFIBUS Nutzerorganisation e.V.
- * 5) TOSLINE is a registered trademark of Toshiba Infrastructure Systems & Solutions Corporation.
- * 6) Cannot be used with inverter operation.



Realtime motor monitoring and Indicate deterioration trends.

BASIC SPECIFICATIONS

Power supply voltage Allowable voltage fluctuation Operating voltage

Operating ambient humidity

- : AC20V, 50/60Hz : 85% to 110%
- : AC100/110/200/220V

50/60Hz

- Operating ambient temperature : -10° C to $+60^{\circ}$ C
- Storage ambient temperature : -20°C to +60°C
 - : 10% to +85%RH(no condensation) : 100MΩ

Insulation resistance :100MΩ (500V megger, between terminals tied together to ground)

Applicable conditions of deterioration monitoring function

- Drive method Motor manufacturer Motor type Motor rated voltage Capacity Number of poles
- : Commercial power supply *⁶⁾ : Not specified
- : Three-phase induction motor
- : AC200-240V, AC400-460V *²⁾
- :0.1-55kW
- : Not specified
- * Specifications and appearance may change without prior notice.

LIST OF FUNCTIONS

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		Items	Description
		Applicable current	0.11 to 630 A
	Overload	Pre-alarm operating current	None, 50 to 100% of the set-up current (unit : 1%)
	protection	Operating time characteristics	2 to 90 sec (unit : 1 sec)
Protective functions	-	Thermal storage characteristics	With hot characteristics
	Reset		Auto, Manual
	Single phase protection	Unbalance ratio	None, 30%, 60%
	Earth fault protection	Operating current	None, 30, 100 to 500 mA
		Operating time	0.1 to 1 sec (unit : 0.1 sec)
		Pre-alarm operating current	None, 30 to 95% of the set-up current (unit : 1%)
	Instantaneous overcurrent protection	Operating current	None, 40 to 600% of the set-up current (unit : 5%)
		Operating time	0.1 to 9 sec (unit : 0.1 sec)
		Starting operation lock time	1 to 180 sec (unit : 1 sec)
	Undercurrent protection	Operating current	None, 15 to 100% of the set-up current (unit : 1%)
		Operating time	0.2 to 9 sec (unit : 0.1 sec)
	Power overload protection Under power protection	Operating power	0.1 to 200 kW
		Operating time	0.1 to 10 sec
		Operating power	0.1 to 200 kW
		Operating time	0.2 to 10 sec
	Operating current monitoring		Digital (A) or percentage (%) switchable
Monitoring functions	Leakage current monitoring		Digital (A)
	Power monitoring		Indicated in kW
	Power consumption monitoring		Indicated in kWh
	Power factor monitoring		Percentage (%) + indication
	Control voltage monitoring (insufficient voltage)		70% or less of the control voltage
	Contactor monitoring		Non-operation monitoring 1 sec after switching operation
	Chattering monitoring		Switching (twice or more) within 0.15 sec monitoring
	Accumulated operation time monitoring		Operation time accumulation monitoring
	Accumulated switching count monitoring		Accumulated switching count of the contactor
	Failure factor indication		Overload, overload pre-alarm, earth fault, pre-alarm for earth fault, single phasing, instantaneous overcurrent, undercurrent, power overload, power low load, starting fault, contactor trouble, and contactor chattering
	Starting time		Time from the start of the operation until the current becomes 110% or less
	Elapsed time indication		Indication of time elapsed following the trip
	Faulty current indication		Past 8 faulty current values (in % of the load current), leakage current values, and current values of the R, S, and T phases (in A)
Control functions	Input operation condition selection		Conditions can be selected from 19 types of functions via universal input terminals.
	Output condition selection		Output conditions can be selected from 36 types via 2 standard relays and 3 optional relays.
	Starting method		Non-reversible, reversible, ∠-Δ, closed ∠-Δ, pole change, reactor, korndorfer, inverter non-reversible, inverter reversible
	Load applied		Single-phase load, three-phase load
	Operation Stop		Operation, Stop, and Trouble Reset by illuminated (LED) push-button switch
	Remote and direct switching selection		With Remote (REM) or Direct (DIR) switching. 4 types of circuit conditions can be selected.
	Restart after voltage dip	Voltage dip compensation time	0(None), 0.5, 1, 2, 3, 4, 5 sec, 10 to 60 sec (unit : 5 sec)
		Voltage dip compensation time for immediate restart	0(None), 0.1sec : standard 0.2 sec : option
		Restarting delay time	0(None), 1 to 180 sec (unit : 1 sec)
	Operation whe	n CPU is faulty	Stop or continue
Other	Transducer output		0 to 1 mA (not insulated) : standard 4 to 20 mA (not insulated) : standard 4 to 20 mA (insulated) : option
	Test trip		For problem simulation at a sequence test
	Interface		USB 2.0 (Type-C)





Earth Fault Protection Characteristics



Instantaneous Overcurrent Protection Characteristics



Undercurrent Protection Characteristics



Notes on safety

Before installation, connection, operation, or maintenance, the catalog, manual, documents attached to the products must be read with great care.
The customer must be acquainted with the performance and principle of equipment and lows relevant to electrical equipment and work.

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