

Maxchek 400

Maximum Demand Controller

Maxchek 400 is a smart maximum demand controller with standard size 96x96 mm specifically designed for industries to keep a check on their maximum demand. It gives an alarm when demand approaches a preset value and also switches off non-essential loads in a pre-programmed logical sequence. This predictive maximum demand controller (MDC) allows stage wise load restoration to maximize the use of a sanctioned load. Maxchek 400 is most suitable for the demand control of industrial consumers, HT consumers and commercial establishments.



Applications

- Commercial and industrial sanctioned demand monitoring & controlling applications
- Control panels for complete plant demand controlling
- Demand management for commerce and industry

Benefits

- Easy interface with external devices through built-in Modbus (RS-485)
- Detachable connectors for easy installation
- Three relay and one alarm output
- Suitable for star or delta connections and for low or high-voltage applications
- Alarm output for audible indication.
- Field-configurable CT / PT primary and secondary values using push-buttons
- Calibration LED for on-site accuracy check
- Configurable software (ConfigView) for reading of parameters and load survey
- Shift wise demand configuration

Features

- Two modes of programming - Preventive Mode (only Alarm no control), Predictive Mode (Alarm and automatic control)
- Predictive demand control to forewarn, take corrective measures and check maximum demand crossovers
- Multi-level (phase wise and shift wise) priority based automatic load control mechanism to disconnect low priority loads in phased manner
- Configurable demand integration period for sliding and fixed type
- Optimised load disconnection time
- Online load planning by continuously indicating loads that can be added or need to be disconnected (within safe operating limits)
- Check meter with accuracy class 0.2s, 0.5s and 1.0
- Auto and push button display
- An user friendly software to program and monitor
- Control Outputs for alarm and trip applications - it provides 3 control and one alarm outputs, in the form of potential free contacts
- Large four-line seven-digit display (9.7 H x 5 W mm) with quadrant identification section and bar graph for instantaneous power-level indication

Enriched Software - ConfigView

Max Demand Controller

Define System Parameter For Max Demand

Contract Demand: 7500 kW
Demand Energy Type: Active energy, import, net

Max Demand Controller Mode

Predictive Mode (Alarm and Control O/P)
 Preventive Mode (Only Alarm O/P)

Define Shifts and Set Operating Limits For Max Demand Controller

No. of Shift: 4

Shift No.	Shift Start Time	Shift End Time	Allowed Demand kW	Alarm Activation Limit (kW)
1	00:00	06:00	7000	6500
2	06:00	12:00	6500	6000
3	12:00	18:00	6800	6500
4	18:00	24:00	7000	6500

Define Trip Loads Connected To Max Demand Controller

Define Load On Circuit For all shifts

No. of Trip Circuit Connected: 3

Max Load Connected On Circuit-1: 1000 kW
Max Load Connected On Circuit-2: 1500 kW
Max Load Connected On Circuit-3: 1500 kW

7500 kW — MDC — Alarm 6500 kW
— Circuit-1 1000 kW
— Circuit-2 1500 kW
— Circuit-3 1500 kW

Max Demand Controller

Define Advance Parameter For Max Demand

Reset relays: On DIP crossover
Alarm Activation Period: Averaging Period
Hysteresis %: 5
Averaging Period: @ 1 min / 5 min

Define Load On Trip Circuit Shifts Wise

No. of Trip Circuit Connected: 3

Shift No.	Load On Trip Circuit 1 (kW)	Load On Trip Circuit 2 (kW)	Load On Trip Circuit 3 (kW)
1	1000	1500	1800
2	1000	1500	1800
3	1000	1500	1800
4	1000	1500	1800

Define Disconnection Sequence Of Trip Circuit In Shifts

Shift No.	Trip Circuit 1	Trip Circuit 2	Trip Circuit 3
1	1	2	3
2	1	2	3
3	1	2	3
4	1	2	3

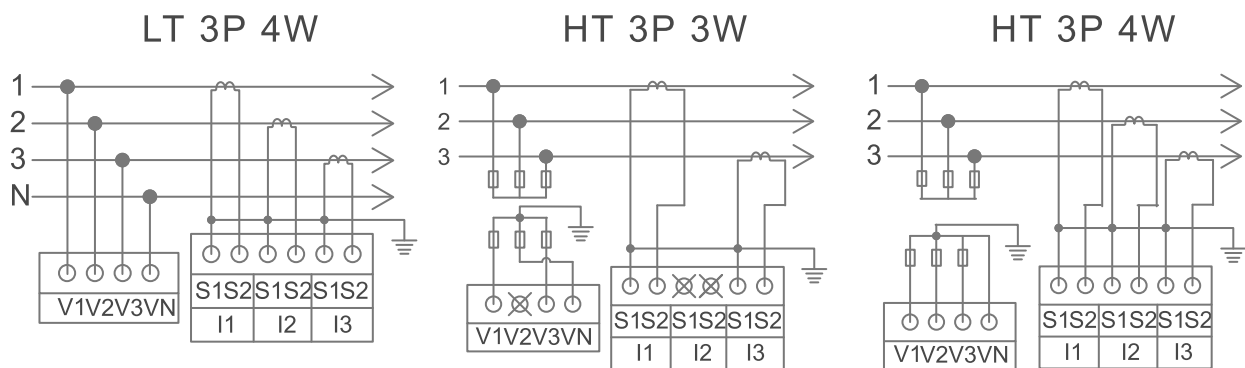
Shift wise demand configuration on trip circuits

Tripping Priority configuration of trip circuits in shifts

Metering Parameter Accuracy

Parameters	Accuracy Class 0.2	Accuracy Class 0.5
Voltage	0.1	0.1
Current	0.1	0.2
kW	0.2	0.5
kVar	0.2	0.5
kVA	0.2	0.5
kWh	0.2	0.5
kvarh	0.2	0.5
Power Factor	0.2	0.5
Frequency	0.1	0.1

Connection Diagram

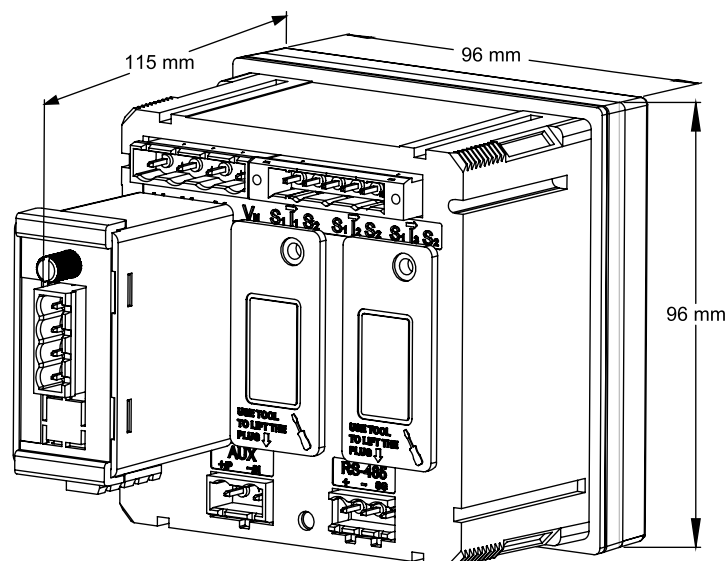


For CT/PT meter, ensure that it is connected on secondary side of instrument transformer.

In case of 33W, VN is replaced by V2

Note: Connect aux. supply to the P/+ and N/- terminals

Mechanical Dimensions



Maxchek 400

Technical specifications

Electrical

Connection type	Common product for HT ₃ / HT ₄ / LT application
Wiring configuration	Common product for 3 P-3 W and 3 P-4 W application
Voltage range :	
<i>Measurement voltage range</i>	57.7 V (100V) - 230 V (400V) AC 3 phase 4 wire (3 phase 3 wire)
<i>Aux power supply range</i>	80 - 300 V AC/DC or 24 - 60 V DC (Variant)
Current range	Available 1-2A and 5-10 A in single variant (field configurable)
Main frequency	50/60Hz with $\pm 5\%$
Accuracy Class	0.2S, 0.5S, 1.0
Burden	Aux burden : 3.5 VA; 8VA with module connected Current ckt burden : 1 A - 0.05VA per phase, 5 A - 0.25 VA per phase Voltage ckt burden : 0.15 VA per phase.
Energy Type	Active Imp (T), Apparent Imp, Active Forwarded, Apparent Forwarded
Averaging Period	1min or 5min
Trip Circuit	3 Circuit
Alarm Activation Time	Active for 30 seconds or active for whole averaging period

Approvals

Standards	Standards IS13779, IS14697, IEC62052-11, IEC62053-23 and IEC62053-22, IEC61010
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Mechanical

Dimensions (WXHxD)	96 x 96 x 115 mm Cut out size 92 x 92 mm
Weight	0.5 kg (approx)
Mechanical Enclosure	PC- FR UL 94 V0
Terminals	Combicon connector
Max conductor size	2.5 mm ²

Environmental

Ingress protection	IP 52 (front fascia); IP20 (at terminals)
Insulation	4 kV RMS 50 Hz
Impulse withstand	6 kV
Temperature	-20 °C to +60 °C (operating) -25 °C to +80 °C (storage)
Humidity	95% non-condensing

Feature

Favourite page	On / Off
CT/VT primary	Configurable in field through keypad
Communication	RS485 Modbus half duplex (Default) and data will be available in floating point format
Baud rate	from 1200-38400 bps (Default 9600 bps)
Load survey	40 days for 6 parameters @ 30 min IP Options for 15 or 60-minute integration period.

Module

1 Alarm (230VAC/DC at 100mA) and 3 control output (2A at 230VAC, SPST NO type)