

multitek



C-Tran

Combined 3 phase current transformer and multi-function power transducer

C-TRAN

The C-Tran (M552) is a combined 3 phase multifunction AC power transducer and current transformer.

The C-Tran is fully programmable through either of its communication ports.

PARAMETERS MEASURED

- * Phase Voltage (V)
- * Line Voltage (V)
- * Phase Current (I)
- * Frequency (Hz)
- * Active Power per phase (W)
- * System Active Power (W)
- * Reactive Power per phase (VAr)
- * System Reactive Power (VAr)
- * Apparent Power per phase (VA)
- * System Apparent Power (VA)
- * Import Active Energy (W.h)
- * Export Active Energy (W.h)
- * Import Reactive Energy (VAr.h)
- * Export Reactive Energy (VAr.h)
- * Apparent Energy (VA.h)
- * Ampere Energy (A.h)
- * Power Factor per phase (P.F.)
- * System Power Factor (P.F.)
- * Amp Demand (Ad)
- * Maximum Amp Demand (Max Ad)
- * Import Watt Demand (Wd)
- * Maximum Watt Demand Import (Max Wd)
- * Export Watt Demand (Wd)
- * Maximum Watt Demand Export (Max Wd)
- * VA Demand (VAd)
- * Maximum VA Demand (Max VAd)
- * Neutral Current
- * Hours Run

ACCURACY

The accuracy of the integrated transducer is rated as class 0.2% for voltage and current measurements and 1% of reading for all energy accumulators.

The accuracy of the current transformer is class 1%

(for further information see 'General Specification')

ORDERING INFORMATION

Information required	Example
Product Code	M552-CTR
Nominal input current	100A

MEMORY

All data including energy registers, current and voltage ratios and calibration data is stored in a non volatile EEPROM.

COMMUNICATION

Port 2 :

The main communication port.

It uses the popular Modbus protocol to retrieve measurements and to change the transducer's operating parameters. It enables the connection of a host computer, PLC, RTU, Data logger etc.

Port 1:

This port has a fixed data format. It can also retrieve measurements and set the transducer's operating parameters. Only the baud-rate and endian format can be changed on this port.

Special LCD (M850-LCM) meters can be connected to this port.

PROGRAMMING

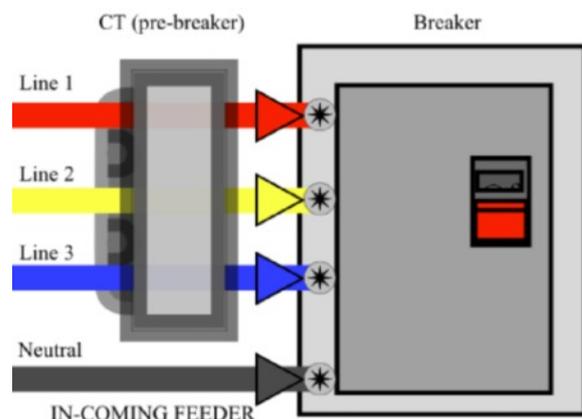
All programming can be done using MultiView.

The Voltage transformer ratio can be set (280V ac is the nominal input) plus other device settings, including P.F. correction, can be changed.

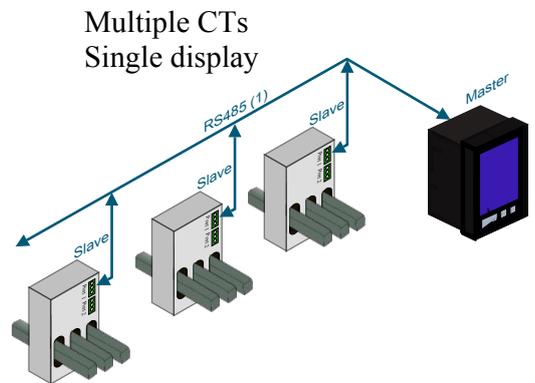
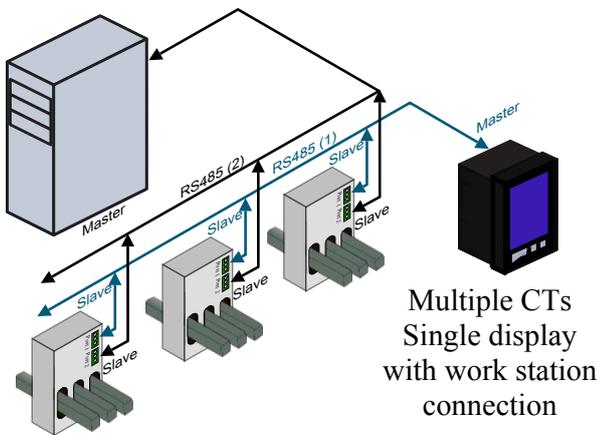
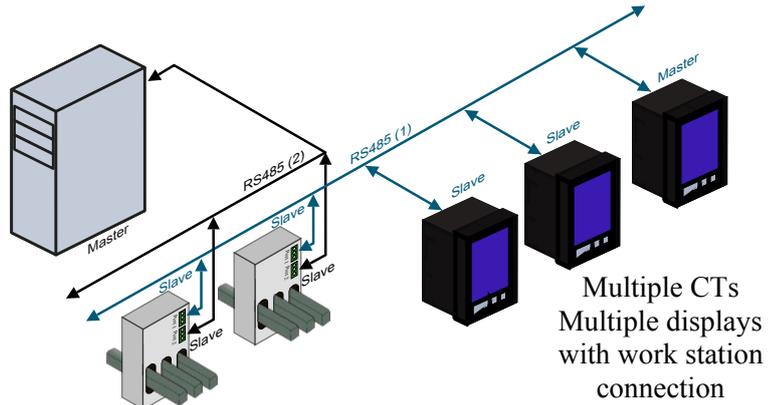
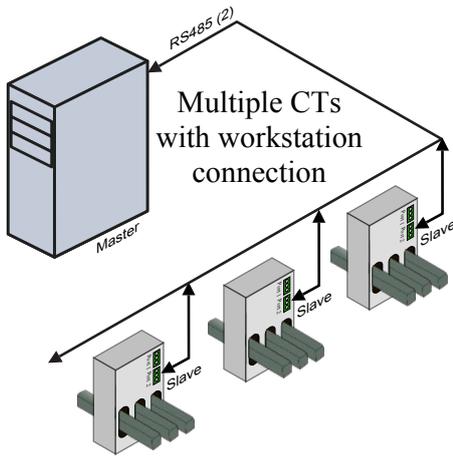
The M552 is setup at the factory as shown below. The default configuration is import power and normal line positioning for pre-breaker orientation.

Changing the configuration to match the installation can be managed using MultiView.

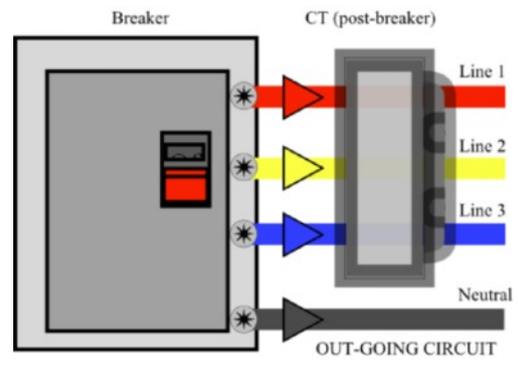
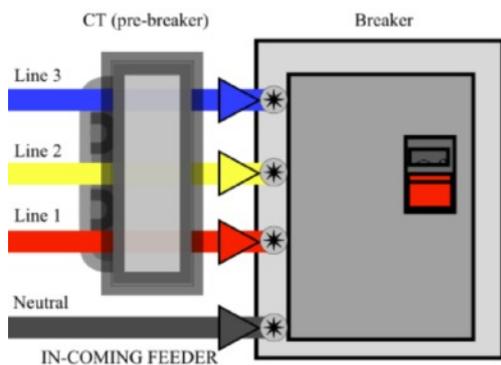
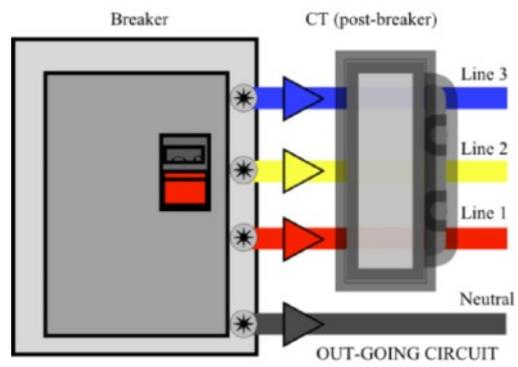
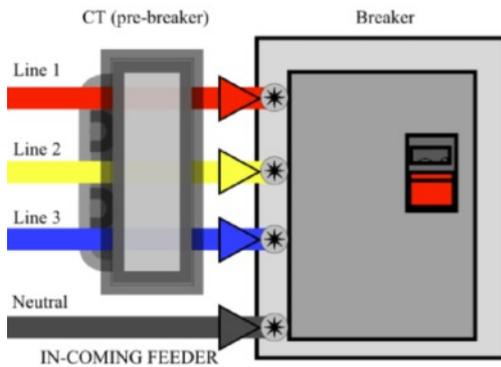
Note: Line Voltages must be connected as shown on the label for all configurations. Line currents of at least 2% of the system's current should be applied at the time of commissioning if the orientation is different to that shown below. L2 current is the reference for commissioning and will dictate whether the unit is import or export orientated.



Examples of possible combinations using Ports 1 and 2



Software is available to enable a user to configure C-Tran for import or export and to swap current lines L1 and L3



GENERAL SPECIFICATION

INPUT

Rated Un	Directly connected voltages: (3ph4W) 100V to 330VL-N MAX (3ph3W) 100V to 440VL-L MAX
Range	280V nominal
Rated In	dependent on CT primary (see options)
Range	0-120% In
Overload	Absolute maximum input: 4 x In
Frequency	50/60 Hz. Nominal range 45/65Hz

OPTIONS

CT primary options:
100A, 125A, 150A, 160A, 200A, 250A
Auxiliary option:
100V-440Vac/dc

ACCURACY

Specified at 23°C, 100V to Un, 10% to In	
Integrated Transducer:	
Parameters (unless stated)	Class 0.3% to IEC 688
Voltage and Current	Class 0.2% to IEC 688
Frequency	Class 0.1 to IEC 688
Active & Reactive Energy	1% of reading to IEC1036
Current transformers:	Class 1

INSULATION

Installation category	III (480 VAC ph/ph)
Degree of pollution	2
Test Voltage:	
4 kV RMS 50 Hz for 1 min voltage inputs to case .	
3kV RS485 to case and voltage inputs.	
(There is no isolation between Port 1 and Port 2)	
Impulse Test:	
EMC 5kV transient complying with IEC 801/EN 55020 HF	

ELECTROMAGNETIC COMPATIBILITY

Immunity to:-	
electrostatic discharges:	IEC 61000-4-2-Level III
radiated radio-Hz fields:	IEC 61000-4-3-Level III
electrical fast transient/bursts:	IEC 61000-4-4-Level III
impulse waves:	IEC 61000-4-5-Level III
conducted disturbances:	IEC 61000-4-6-Level III
voltage dips:	IEC 61000-4-11
short interruptions:	IEC 61000-4-11
Emissions to:-	
Conducted and radiated:	CISPR11-Class A

ENVIRONMENTAL

Working Temperature	0 to +60 deg C
Storage Temperature	-30 to +65 deg C
Temperature Coefficient	0.01% per deg C

AUXILIARY

Self-powered:	maximum 440V
Burden	<10VA

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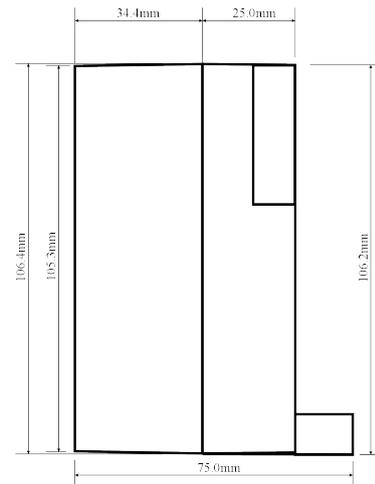
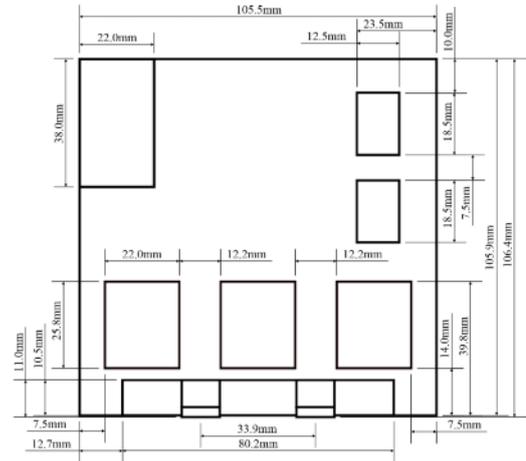
APPLIED STANDARDS

General	IEC 688 BSEN60688, BS4889, IEC 359
EMC	Emissions EN61326-1 Immunity EN61326-2
Safety	EN61010-1

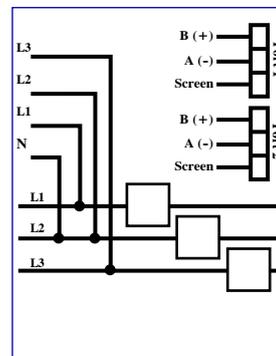
APPROVALS

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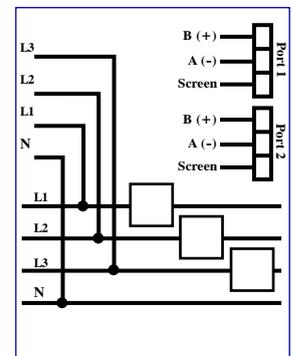
CASE DIMENSIONS



CONNECTION DIAGRAMS



**Self powered
3 Phase 3 Wire
Unbalanced Load**



**Self powered
3 Phase 4 Wire
Unbalanced Load**