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## Lifetime Warranty LIFETIME WARRANTY

HellermannTyton carries a Lifetime Warranty on most tools and selected instruments. Instruments carry a 2 year limited warranty unless stated specifically to carry a lifetime warranty. If any product is found to be defective or faulty within this warranty, HellermannTyton will, at their sole discretion, repair or replace the affected product. This warranty does not cover batteries, fuses, or the neglect or misuse of products within abnormal conditions of operation, improper storage, damaged or altered as well as the wear of consumable products.

HellermannTyton products are warranted to be free from defects in material and workmanship at the time sold by us but our obligation under this warranty and that of the reseller is limited to the replacement of the product, and neither we nor the reseller are bound by any other warranty, expressed, implied or statutory.

Under no circumstances are we or the seller liable for any loss, damage, expenses or consequential or incidental damages of any kind arising out of the use or inability to use these products. All are sold with the understanding that the user will test them in actual use and determine their adaptability for the intended uses.

Please note that although the warranty covers most tools it does not cover all hydraulic and battery operated tools including gas solder irons where regular maintenance is required. Any software that may come with the tool or instrument does not fall under this warranty either. This warranty does not cover damages to products which are not installed, operated, used and maintained in accordance with disassembly or attempted disassembly by parties other than HellermannTyton or its authorised service representatives.

## Calibration Certification

Certifies that all the instrument's or tool's parameters are tested against its original specification

## Certificate of Conformance

The certificate is issued by the manufacturer stating that the instrument meets required specifications

## VDE

Verband der Elektrotechnik is a certification mark and attestation from one of Europe's largest technical and scientific associations for standardization of work and product testing.

Tools with double triangle are tested individually with a test Voltage of 10000V, highest degree of safety for working on live parts up to 1000V.

## GS

GS (Geprüfte Sicherheit) is a voluntary certification mark for technical equipment that has been tested and certified that it compliance with German and European safety requirements. The GS mark is based on the German Product Safety Act

## SANAS

South African National Accreditation System accreditation certificates are a formal recognition that an organisation is competent to perform specific tasks.

## IEC

International Electrotechnical Commission is the world's leading organisation for the preparation and publication of International Standards for all electrical, electronic and related technologies.

## True RMS (TRMS)

The normal alternating current mains power supply comprises a sinusoidal waveform that has symmetrical positive and negative half cycles. The RMS (Root Mean Square) value of an alternating current is measured in terms of the direct (dc) current that produces the same heating effect in the same resistance.

Problems arise when the mains waveform becomes distorted because of the effects of certain types of loads. This results in a non-sinusoidal waveform.

In order to get a True RMS measurement, we can measure the heat dissipated by a constant resistive load and perform the Power to Heat calculations. **(Power or Heat) = I<sup>2</sup> R** The result is a True RMS measurement. True-RMS (root mean square) instruments can measure alternating current (ac) or ac voltage with better accuracy.

## Display Digits and Display Counts

Display resolution on instruments is often specified in counts or digits.

The table, below is example of common resolution display conversion between digits and counts:

Count	Display Digit
2000	3½ (3.5)
4000	3¾ (3.75)
20000	4½ (4.5)

## Counts

Multimeters and testers use counts to display information. These instruments have various ranges used to obtain different values in measured readings. Counts indicate what can be displayed, before it changes to the next range, i.e. a multimeter with 5000 counts, changes to the next range when it reaches 50000 on its display.

**Example**, a meter with a 50000 count will read 49.999V on the display, but when it tries to display 50V, it will only read 050.00V, or simply 50.00V. Generally when the multimeter or clamp meter moves to the next range, one digit of resolution is lost.

## Digits

Alternatively, display resolution can be described in digits. As per the table above, when reading the digits, the whole number must be separated from the fraction.

**Example, a meter with 4.5 digits, or 4 and 1/2 digits needs to be read as follows:**

1. The "4" represents full digits - digits that can be represented or shown from 0-9 on the display
2. The "1/2", or "0.5" - is the first digit of the reading display as well as the maximum it can read i.e. "1/2" means the first digit that can represent the digit 0-1.

## Accuracy

An instrument's degree of reliability and degree of acceptable error can occur under specific operating conditions. Alternatively, how close the measurement is to the actual or reference value of the signal being measured.

Accuracy maybe represented as a percentage as well as digits.

Example: an accuracy of  $\pm 2\%$ , +2 digits means 100.0V reading on a multimeter can be from 97.8V to 102.2V.

Accuracy is generally compared to an accepted industry standard.

## Precision

An instrument's degree of repeatability i.e. how reliably can the instrument repeat the same measurement and read the exact same value when making a series of measurements.

Component aging, battery condition, temperature and warm-up time may all effect repeatability.

## Resolution

The smallest increment an instrument can detect and display such as hundredths, thousandths, millionths.

## Range

The upper and lower limits an instrument can measure a value or signal such as amps, volts and ohms.

The larger number of counts should translate into higher resolution and generally a higher accuracy.

## Safety Category or (CAT) Rating

Categories I-IV are used to rate a test instruments' ability to resist a voltage spike, which is applied through a specific resistance. Generally, a higher CAT rating, the safer the instrument.

### CAT IV (Primary supply level) – 3-Phase

Measurements performed at the source of low voltage installations

Application: electricity meters, primary overcurrent protection devices and ripple control units

### CAT III (Distribution level) – 3-Phase

Measurements performed in building installations

Application: distribution boards, circuit breakers, bus bars and junction boxes in fixed installations

### CAT II (Local level) – Single phase

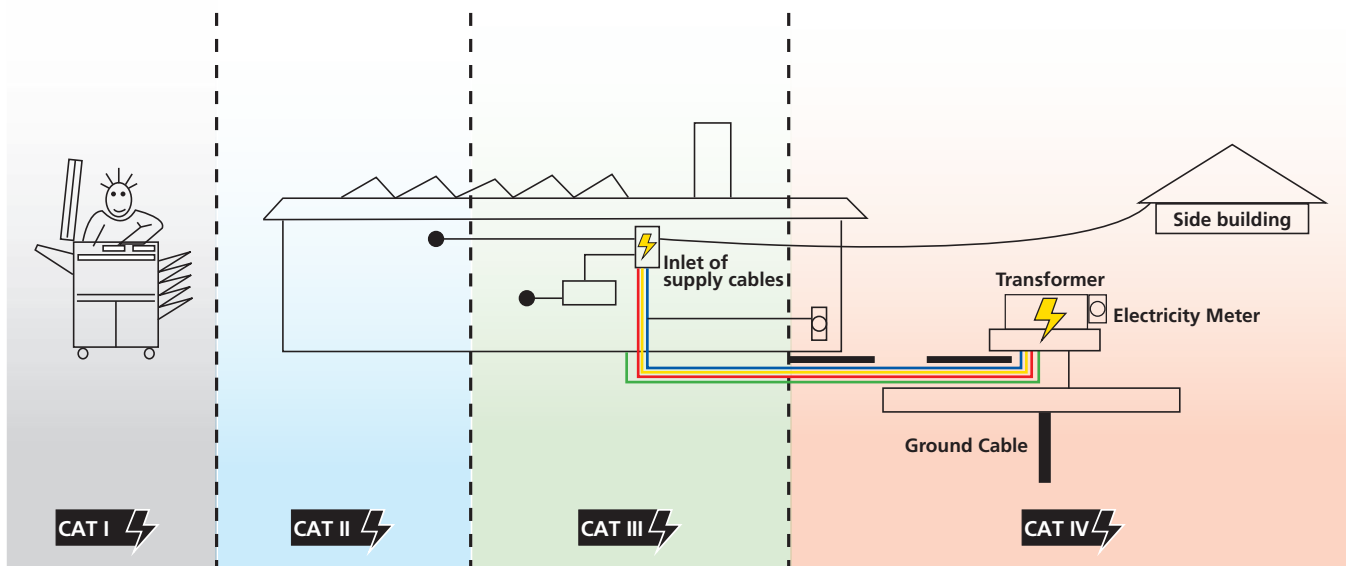
Measurements performed on circuits directly connected to the low voltage installations

Application: household appliances, mobile devices and similar

### CAT I (Signal level) - Electronic

Measurement of electronic equipment not directly connected to mains

Application: Protected electronic devices




















A higher voltage rating within a category signifies a higher energy transient.

Example: CAT III-1000V instrument has superior protection compared to a CAT III-600V rated instrument.

## Degree of Ingress Protection (DIN EN IEC 60529)

Ingress Protection (IP) Rating (or International Protection Marking) of an instrument consists of the letters IP followed by two digits i.e. IP54. The two digits classify the degrees of protection provided against the intrusion of solid bodies including body parts like hands and fingers, dust, and accidental contact (first digit after IP), and water (second digit after IP) in electrical enclosures.

















1 <sup>st</sup> Digit: Solid Object Ingress		2 <sup>nd</sup> Digit: Water Ingress	
1 <sup>st</sup> Digit	Summary of Protection	2 <sup>nd</sup> Digit	Summary of Protection
0	 <b>No protection</b>	0	 <b>No protection</b>
1	 Protection against solid foreign bodies <b>&gt;50mm</b>	1	 Protection against <b>vertically dripping water</b>
2	 Protection against medium sized solid bodies <b>&gt;12.5mm</b>	2	 Protection against <b>vertically dripping water</b> when enclosure <b>tilted up to 15°</b>
3	 Protection against small solid bodies <b>&gt;2.5mm</b>	3	 Protection against <b>spraying water</b> (60° angle from any direction)
4	 Protection against granular solid bodies <b>&gt;1mm</b>	4	 Protection against <b>splashing water</b> from any direction
5	 Protection against limited ingress of dust	5	 Protection against <b>low pressure water jets</b>
6	 <b>Complete</b> protection against ingress of dust	6	 <b>Protection against strong jets of water</b>
		7	 <b>Protection during temporary immersion</b>
		8	 <b>Protection during continuous immersion</b>
		9k	 <b>Protection against high pressure/ stream jet cleaning</b>

## Cable Current Ratings

Conventional Rated Thermal Current (A)	Copper Conductor Section			
	Cable			
	No	Section (mm <sup>2</sup> )	Dia. (mm)	AWG
8	1	1	1.15	17
12	1	1.5	1.45	15
20	1	2.5	1.83	13
25	1	4.0	2.30	11
32	1	6.0	2.80	9
50	1	10	3.60	7
65	1	16	4.62	5
85	1	25	5.79	3
115	1	35	6.64	2
150	1	50	8.21	0 or 1/0
175	1	70	9.37	00 or 2/0
225	1	85	10.4	000 or 3/0
250	1	120	12.4	4.7/0
275	1	150	13.91	5.5/0
350	1	185	16.06	6.7/0
400	1	240	17.96	7.7/0

## Description of Symbols

Symbol	Description	Symbol	Description
	Sensitive zone in jaws for slim conductors in CAT III 1000V areas		Bluetooth
	Safety Category (pXX)		ATEX certified electrical equipment for explosive atmosphere
	GPS		GS mark is based on the German Product Safety Act (pXX)
	Lifetime Warranty on most tools and selected instruments (pXX)		Relative humidity
	Sound level		True RMS (pXX)
	Temperature		Certification mark for individual products tested at 1000V (xx)
	Measures basic Ohms Law of Voltage Resistance and Current		Wi-Fi

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CSH230	Link Stick 9m (30ft)	49
DUSPOLA	Analogue Voltage Line Plus	47
DUSPOLE	Expert Voltage Line	48
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**1000V DOUBLE INSULATED TOOLS**

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HT31617	6-Point Sockets	128
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HT52545	Cable Stripping Knife	129
HT53040	1000V Hooked Cable Knife	129
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**1. Proof of Claims**

A certificate signed by a manager or any director of THE COMPANY reflecting the amount owing by THE CUSTOMER to THE COMPANY, in respect of the credit facilities granted to THE CUSTOMER relating to THE CUSTOMER'S dealings with THE COMPANY, and of the fact that such amount is due, owing and unpaid shall be prima facie proof of the effects therein stated for the purpose of any action (whether by way of provisional sentence or otherwise), proof of debt on insolvency or for any purpose whatsoever where the amount of such claims is required to be established, and it shall rest with THE CUSTOMER to prove that such amount is not owing and/or due and unpaid.

**2. Consent to jurisdiction**

Notwithstanding the amount which may at any time be owing by THE CUSTOMER to THE COMPANY, the parties do hereby consent, in terms of Section 45 of the Magistrates Court Act (No 32 of 1944 as amended), to the Jurisdiction of the Magistrate's Court for the determination of any action or proceeding which may be brought by THE COMPANY against THE CUSTOMER arising out of any transaction between the parties, it being recorded that THE COMPANY shall be entitled, but not obliged, to bring any action or proceeding in the said court.

**3. Defaulting in payment**

In the event of THE CUSTOMER defaulting in making payment of any amount that has become due and owing, then the full balance outstanding (whether due or not) will immediately become due and payable without notice to THE CUSTOMER.

**4. Change of address**

THE CUSTOMER undertakes to notify THE COMPANY forthwith in writing of any change of address.

**5. Objections to statement**

If THE CUSTOMER should fail to object to any item appearing on THE COMPANY'S statement of account within fourteen days of date of the dispatch of the statements the accounts shall be deemed to be in order.

**6. Change of ownership**

THE CUSTOMER undertakes to notify THE COMPANY, in writing, within seven days of any change in Ownership of THE CUSTOMER'S business, or should THE CUSTOMER be a company, of its share transactions whereby the majority shareholding is affected, failing which notice the entire balance owing, whether due or not, will immediately be deemed to be due and payable by THE CUSTOMER. In addition to the foregoing, THE CUSTOMER acknowledges that immediately upon any change of Ownership in THE CUSTOMER any outstanding amount whether due or not shall be deemed to be forthwith payable by THE CUSTOMER to THE COMPANY.

**7. Reservation of ownership**

Until such time as THE CUSTOMER has paid the purchase price in full in respect of any purchase of goods, the ownership in and to all such goods shall remain vested in THE COMPANY. THE COMPANY shall, in its sole discretion, without notice to THE CUSTOMER, be entitled to take possession of any such goods which have not been paid for and in respect of which payment is overdue, in which event THE CUSTOMER shall be entitled to a credit in respect of the goods so returned being the price at which the goods are sold or the value thereof as determined by THE COMPANY. THE CUSTOMER hereby waives any right it may have for a spoliation order against THE COMPANY in the event that THE COMPANY takes possession of any goods.

**8. Valid orders**

In the event of any order being given to THE COMPANY on an order form reflecting THE CUSTOMER'S name as the entity from which the order emanates, such order shall be deemed to have emanated from THE CUSTOMER, notwithstanding the fact that such order may have been given or signed by a person not authorised by THE CUSTOMER and such order will be deemed to constitute valid delivery. It is further the sole responsibility of THE CUSTOMER to determine that goods ordered are suitable for the purposes of the intended use.

**9. Non-waiver of rights**

Any condonation of any breach of any of the provisions hereof or other act or relaxation, indulgence or grace on the part of THE COMPANY shall not in any way operate as or be deemed to be a waiver by THE COMPANY of any rights under this contract, or be construed as a novation thereof.

**10. Payment to COMPANY**

THE COMPANY does not appoint the Post Office as its agents for payments by post. All payments shall be made to THE COMPANY'S place of business from where the goods were ordered. In the event of any payments being mislaid or lost in the post, THE CUSTOMER shall still be liable to THE COMPANY for payment.

**11. Credit terms**

The credit terms are, unless amended in writing by a director/manager of THE COMPANY, 30 (thirty) days nett, where such days are calculated from the date of statement. Settlement is effected only on receipt of cash or due honour of cheque or similar payment instrument. Any credit facilities granted to THE CUSTOMER by THE COMPANY is entirely at the discretion of THE COMPANY, and may be withdrawn at any time.

**12. Interest on overdue accounts**

THE COMPANY shall be entitled to charge the CUSTOMER interest at the rate of 2% per month in terms of the National Credit Act, provided however, that nothing contained herein shall be interpreted as obliging THE COMPANY to afford THE CUSTOMER any such indulgence to effect payment after due date.

**13. Consent to sharing information**

THE CUSTOMER consents to THE COMPANY sharing information on his account with THE COMPANY, with other credit grantors and credit information agents. Information shared with such credit grantors and agents is used to make credit granting decisions, to prevent fraud and manage risk.

**14. Delivery**

14.1 THE CUSTOMER agrees that the signature of any agent, contractor, sub-contractor or employee of THE CUSTOMER on THE COMPANY'S official delivery note/invoice/waybill, or the delivery note of any authorised independent carrier will constitute delivery of the goods purchased.

14.2 Any delivery date stated on the order confirmation is approximate only. THE COMPANY shall not be bound by that date, but will make all reasonable efforts to deliver by that date.

14.3 Whilst THE COMPANY will endeavour to ensure that goods are delivered timeously, it shall not be responsible for any delays in the delivery of such goods, and THE CUSTOMER shall not be entitled to refuse acceptance of such late deliveries. THE COMPANY shall in any event not be liable to THE CUSTOMER, or to any third party, for any loss of whatsoever nature as a result of goods not being delivered timeously.

14.4 The risk in and to the goods shall pass from THE COMPANY to THE CUSTOMER on the date of delivery notwithstanding that ownership will not pass to THE CUSTOMER until full payment of the purchase price. Delivery shall be deemed to have taken place against signature of THE COMPANY'S delivery note, proof of posting if the goods are posted to THE CUSTOMER or delivery to the South African Transport Services or Road Carrier if the goods are railed or transported by THE COMPANY. The Post Office/South African Transport Services or Road Carrier shall act as the agent of THE CUSTOMER.

14.5 In the event of THE COMPANY acceding to any request by THE CUSTOMER to postpone delivery of the goods, or in the event of THE CUSTOMER failing to give THE COMPANY sufficient information to enable it to process any order, THE CUSTOMER will pay any costs and expenses thereby incurred by THE COMPANY.

14.6 THE CUSTOMER agrees that goods will be offloaded at the nearest accessible point on site. THE COMPANY shall not be held responsible for any damage to any goods delivered during the delivery process, arising from any cause whatsoever.

**15. Recovery of legal /collection costs**

Should THE COMPANY instruct its attorneys or collection agent to collect any overdue amounts, or to take any action against THE CUSTOMER in the implementation or protection of THE COMPANY'S rights, THE COMPANY shall be entitled to the recovery of all legal or collection costs arising there from, on the scale as between attorney, agent or collection agency and own client.

**16. Responsibility for losses / damages or delays**

THE COMPANY will not be in any way responsible for losses, damages or delays caused by or arising from a natural and unavoidable catastrophe or acts of the State's enemies, riots, lockouts, cessation of labour, transport delays, shortened hours of labour, accidents of any kind, insurrection, war, whether declared or not, the imposition of any trade boycotts or sanctions of trade restrictions by any government, authority, company or organisation or person or persons, whether within the Republic of South Africa or anywhere else, or any other cause or contingency whatsoever beyond the control of THE COMPANY, whether of the same kind (eiusdem generis) with the causes aforementioned or not.

**17. Jurisdiction of magistrate's court – irrespective of value**

THE CUSTOMER consents that at the option of THE COMPANY (who shall be entitled but not obliged hereunder) any proceedings against THE CUSTOMER may be brought by the Magistrate's Court, notwithstanding that the value of the claimable amount exceeds the jurisdiction of the Court.

**18. Severability of clauses**

Each clause of these conditions of sale is severable, the one from the other and if any one or more clauses are found to be invalid or unenforceable, that clause/clauses shall not affect the balance of these conditions of sale, which shall remain of full force and effect.