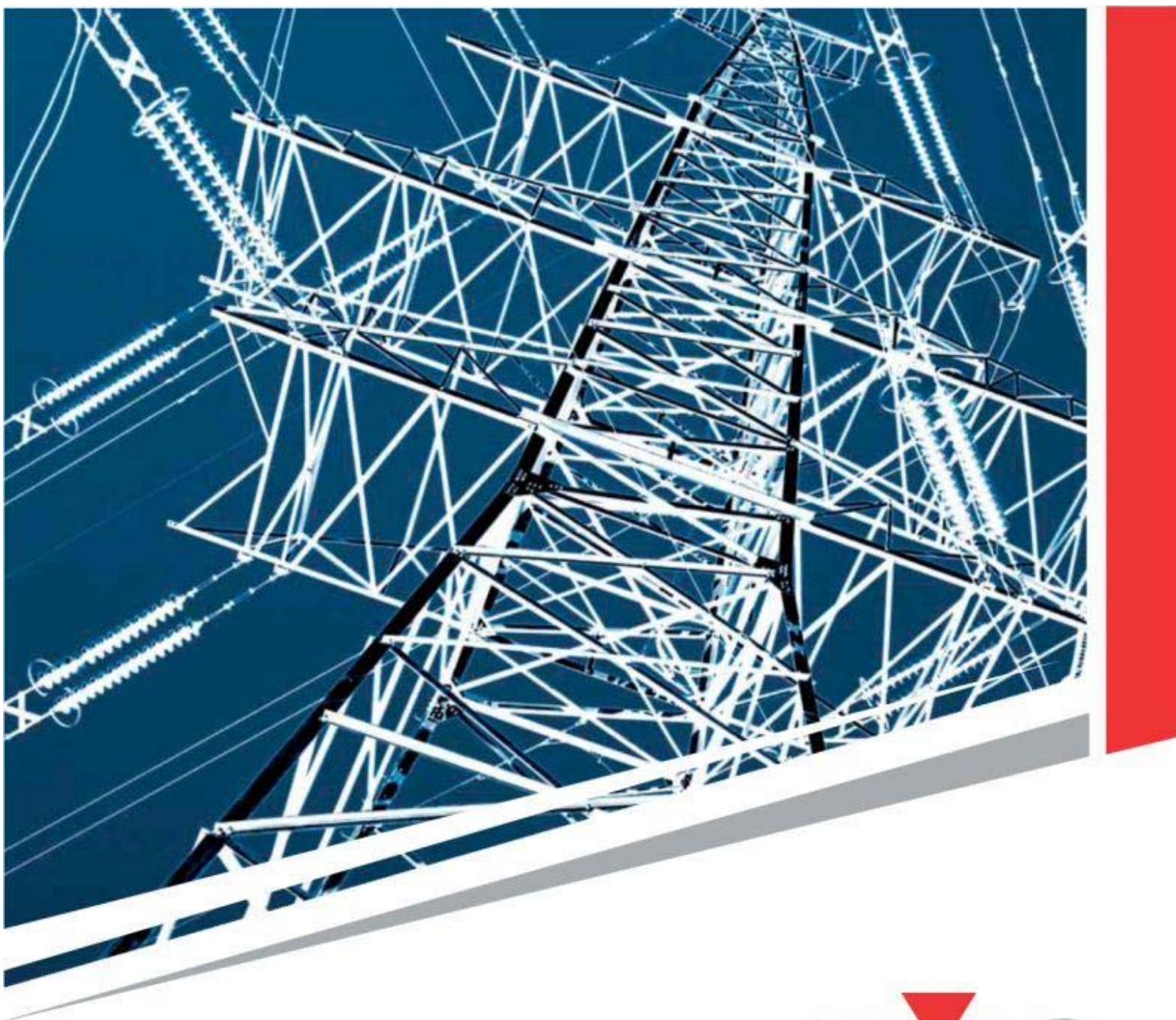


RAPTOR SYSTEM FEATURES AND BENEFITS







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Raptor Features and Benefits

Raptor System


The Raptor system is made up of a Raptor-MS (Master), 0-4 optional Raptor-SL (Slave units) and a Raptor-HH (Hand held controller). The following features and benefits are arranged in groups. These groups represent the Raptor system as a whole followed by the different modules that make up the system.

Features	Benefits
<p>Mobility:</p> <p>Small size and weight</p> <p>35 kg (77Lbs)</p> <p>440mm x 230mm x 550mm</p> <p>(17" x 9" x 22")</p>	<ul style="list-style-type: none"> • More portable (easier to get close to work) • Allows the use of shorter test leads. • Takes up less room in truck • More reliable once it gets to the job • Lower shipping costs  
<p>Adaptable:</p> <p>Raptor-MS/Raptor-SL configuration.</p>	<ul style="list-style-type: none"> • Initial purchase does not limit future use. • Additional SL units can be added at any time. • User needs only the units that are required for that days' task. • Future units can be added to the system when available.  

Loop-Through Technology:	<ul style="list-style-type: none"> • No connection is required to the test set. • Add N=1 to 99 turns to get Nx the test voltage to push current. 	
Additional Units (Raptor-SL):	<ul style="list-style-type: none"> • Each additional SL unit adds almost twice the power of the MS unit alone. 	

Raptor-MS (Master)


The Raptor-MS is the master unit. It can be used standalone or with one or more slave units when additional power is required. All controls and regulation are handled by the Raptor-MS and Raptor-HH.

Features	Benefits	
Small size and weight: 35 kg (77Lbs) 440mm x 230mm x 550mm (17" x 9" x 22")	<ul style="list-style-type: none"> • Light weight and portable enough to easily take in to a vault or get close to a motor control center. 	
IRDA interface: Wireless connection to Raptor-SL units.	<ul style="list-style-type: none"> • Saves set up time • Eliminates a potential weak link of any system (interconnect cables). 	
Output Capabilities: 3.8kA (@ 3kVA) continuous 7.5kA (@ 3.1 kVA) for 3 min using a single turn through the secondary. 9.5kA (@ 2kVA) for 3 sec	<ul style="list-style-type: none"> • Each individual test set is powerful on its' own 	

<p>Output Current: Regulated by measuring with a Rogowski sensor (amplitude and phase measurement)</p>	<ul style="list-style-type: none"> • High amplitude and phase accuracy • Requires no intervention by the user to keep amplitudes stable
<p>Warning LEDs: yield alarm, connectivity and power information</p>	<ul style="list-style-type: none"> • Easy to establish current condition of the test set.
<p>Stability:</p>	<ul style="list-style-type: none"> • Injected current is stable regardless of load change or input fluctuations.
<p>Regulation:</p>	<ul style="list-style-type: none"> • Regulation of the magnitude is fast and automatic. • No more hunting for the correct current output - simply dial up the desired current and turn it on.
<p>Aux Current Output: Primary regulated 0 – 9A continuous or 35A for 3 sec.</p>	<p>Used for:</p> <ul style="list-style-type: none"> • testing ct burden
<p>Aux Voltage Output: Primary regulated with load correction factor 0 - 200V</p>	<p>Used for:</p> <ul style="list-style-type: none"> • polarity and ratio of a CT • polarity and ratio of a VT • saturation curve of a CT
<p>Volt meter input Ranges: 0.2, 2, 20 - 300V (auto ranging or manual) ac or dc</p>	<p>Used for:</p> <ul style="list-style-type: none"> • Testing measuring cts (burden, polarity, ratio, impedance, power and power factor) • Power transformer (short circuit impedance, reactance losses, winding resistance, ratio, polarity) • Magnetization curve of cts.
<p>Binary input: wet or dry up to 300Vac/dc</p>	<ul style="list-style-type: none"> • Used when an external signal indicates the end of a test rather than the lack of current flow.
<p>Low level Voltmeter ranges: 30, 300 or 3000 mV (auto or manual ranging) ac or dc</p>	<p>Used for:</p> <ul style="list-style-type: none"> • Low Resistance measurements when injecting high current. • Testing Rogowski coils • Testing measuring cts with voltage.
<p>Raptor Bus connection:</p>	<ul style="list-style-type: none"> • Allows connection of the Raptor-HH to the master unit via a 5M cable. • Provides for connection to future units


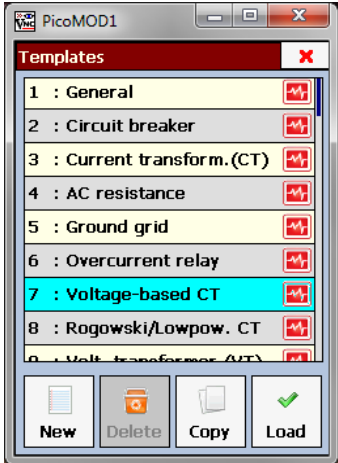
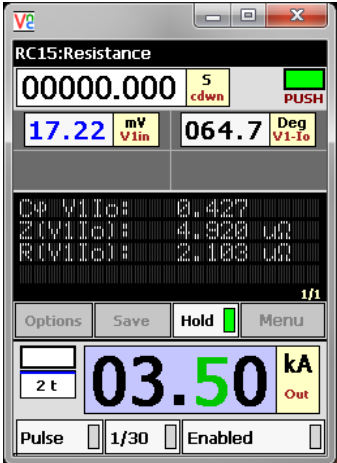
Raptor-SL (Slave)

The Raptor-SL operates as a true slave in the system. Other than its physical presence it is like it is not even present. Once the Raptor-SL is aligned and the test lead (cable) is passed through the Raptor-MS/Raptor-SL combination the user can forget that it is present.

Features	Benefits
<p>Control and Regulation: Raptor-HH and Raptor-MS</p>	<ul style="list-style-type: none"> To use one or more slave units it is only necessary to properly position the slave to the master. All control and regulation are automatic
<p>IRDA interface: Wireless connection</p>	<ul style="list-style-type: none"> Automatic connection to Raptor-MS Saves set up time Eliminates a potential weak link of any system (interconnect cables).
<p>Small size and weight: 35 kg (77 lbs) Small size and weight: 440mm x 230mm x 550mm (17" x 9" x 22")</p>	<ul style="list-style-type: none"> Light weight and portable enough to easily take in to a vault or get close to a motor control center 
<p>Output Capabilities: 3.8kA (@ 5.1kVA) continuous 7.5kA (@ 8.25 kVA) 3 min 15kA (@ 9.15 kVA) for 3 sec using a single turn through the secondary.</p>	<ul style="list-style-type: none"> About twice the power of a Raptor-MS Key to adding voltage to the circuit without giving up any current.
<p>Warning LEDs: yield alarm, connectivity and power information</p>	<ul style="list-style-type: none"> Easy to establish current condition of the test set.

Raptor-HH (Hand Held Controller)

The Raptor-HH is the only control for the Raptor system.

Features	Benefits
3.7" TFT color touch-screen and wheel control:	<ul style="list-style-type: none"> User friendly touch-screen Visible in direct sunlight. Magnetic back face
Mobile with a 5m cord:	<ul style="list-style-type: none"> The user can get closer to the unit under test for greater visibility. The user can stay at the device under test during testing. 
Ethernet connection:	<ul style="list-style-type: none"> User can obtain software updates 24/7 via the internet
Flash drive storage:	<ul style="list-style-type: none"> Results are saved on the controller and can be downloaded to a PC at a later time. Pre determined tests can be stored on the Raptor-HH No PC in the field
USB connector:	<ul style="list-style-type: none"> Allows communication between the Raptor-HH and a PC
<p>Automated tests are already stored in the controller for such tests as:</p> <ol style="list-style-type: none"> Circuit breakers (molded case and air frame) – long time, short time and instantaneous Reclosers – number of operations and times CTs – ratio, polarity, burden, impedance, power factor and saturation curves VTs - ratio, polarity, burden, impedance, power and power factor Rogowski coils – output voltage vs primary current, phase and ratio Power transformers – short circuit impedance, reactance losses, winding resistance, ratio and polarity Ground grid - resistance 	<ul style="list-style-type: none"> Learning time is a minimum for the user. All test results obtained with the Raptor will be consistent since they will be done exactly the same way each time. Quantities are ramped and test results are recorded automatically. Set up time for a test is reduced.  



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