FLUKE®

Fluke 233 Remote Display Multimeter

Imagine the possibilities

Application Ideas

Application Ideas

Use this booklet to see how people in a variety of situations could use the Fluke 233 Remote Display Multimeter. These are real quotes from customers in the field. They responded to the Imagine the Possibilities contest which asks people to tell us how they could imagine using the 233 remote display meter.

These real-life uses should help you and your customers realize what a versatile, powerful tool the 233 is. They are only limited by their imagination in ways that it will help them be more productive.

Contents

Automotive

Automotive

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1 "An automotive technician's pay is heavily based on productivity. Any tool that saves you time makes you money. There are many routine tasks where this meter would help to do just that. I work out of 3 bays and often on several cars at once. Multi-tasking is a necessity. If I want to monitor parasitic drain on a battery of one car while doing something else two bays away, this meter would allow me to do that.

Another reality of the job is having to do more from the driver's seat. With electronic throttle control you can no longer manipulate the throttle from under the hood or without being tethered to the scan tool. With this meter, underhood temperatures and readings can be monitored from the driver's seat without having to route the meter leads or strain to see the display. At the same time, this allows shorter leads to be used eliminating the worry of them being pinched, tripped over, or falling onto a hot exhaust pipe." M.H., Nebraska

2 "We sometimes need to hook a meter to a control module and then drive the lift truck around while taking measurements. Sometimes the meters can't be mounted in a location that is easy to read while operating the lift trucks. With the Fluke 233, we could connect the base unit up to take measurements and mount the remote display on the instrument panel. This would be much safer than what we do today." J.H., Kentucky

3 "I think that remote display would be great to sit in front of the windshield while the test leads are connected under the hood. There are many situations where I need to be inside the cab cranking the engine while looking at the display and that is impossible with conventional multimeters. Often times a second technician is necessary to look at a display or to crank the engine. The Fluke 233 would likely increase productivity and improve technician efficiency in many scenarios. I think it would also enhance personal safety because I am often near rotating engine components while trying to hold and read a display. I could connect and stand back and look at the display while in a safe location." S.B., Missouri

Automotive

4 "As a heavy duty charging system service technician and trainer, a large part of my job includes monitoring and comparing voltages and current flow from a generator all the way to a set of batteries that may be up to 30 feet away on a longer truck. Having a meter with a remote display would allow me to give an on vehicle training session without having to force course attendees too follow me back and forth and remember readings. As diesel engine compartments get hotter and louder, the option of monitoring voltages from a cooler, safer, quieter distance makes more and more sense everyday." N.N., Illionis

5 "This is an excellent idea. With today's auto and diesel technology we are constantly troubleshooting electric circuits related to fuel injection, general electrical, sensor voltage, open circuit resistance etc. I can't tell you how many times I have had to crawl under a vehicle, at times having one person hold the meter while I checked for voltage in some obscure location and having to fumble with limited length wires. This totally solves my problem of even having to use another person! Keep up the good work." B.N., New Jersey

6 "This tool would be helpful when checking transmission solenoid problems. It would eliminate the tedious process of running long wires from under the car, or the front of the car, putting an end to wondering if the length of the wires is affecting the results. It would be very helpful when checking the signals for all sorts of switches and sensors while driving down the road. The meter could be in the engine compartment and there wouldn't be any wires hanging out of the vehicle to be damaged. Another benefit would be able to check electrical systems without having to ask someone to turn on the system or to read the meter for you." H.S, California

Cranes

Cranes

FLUKE®

1 "I would use the Fluke 233 on overhead bridge and gantry cranes. There are many times a reading must be taken on a moving crane. The only way to get such a reading is to have a man "ride" the crane, which is very unsafe. Also, there are many times when the control panel is in a location that prevents the operating technician to see the moving equipment, also very unsafe. This meter could very possibly save lives." T.T., Texas

2 "It would be nice to hook the Fluke 233 up to an overhead hoist, remove the display and be a safe distance away from the high voltage in the relay box. I could hook the meter up to check the amperage draw on the contactor coils to find intermittent problems when the coils get warm. Right now I have been using my Fluke 87V with 25 foot extension leads to perform this task. Not the safest, but the only way I can do the testing that needs to be done. Another great application is testing the electrical circuits and coils on the mobile cranes. Most of the time there is no operator to run the unit while I watch the meter. With this meter that problem would be solved." R.A., North Dakota

3 "This meter would be great when working on Tower Cranes. It would allow the operator to monitor the power coming into the crane as he is operating the crane. We sometimes have issues with the power supply on our cranes and this would be an easy way for us to monitor the power supply." C.E., Wisconsin

4 "Sometimes taking motor current readings on an overhead crane can be very troublesome. With this meter I could attach a current probe and then attach the probe to a motor lead in the electrical panel. Then when I am clear of the crane, I can run the crane. With the remote display I can safely monitor the current readings from a safe location. Whether a crane runs on AC or DC power the risk of electrocution is always a present hazard. Thank you for creating the tools I need to do my job safer." L.M., Indiana

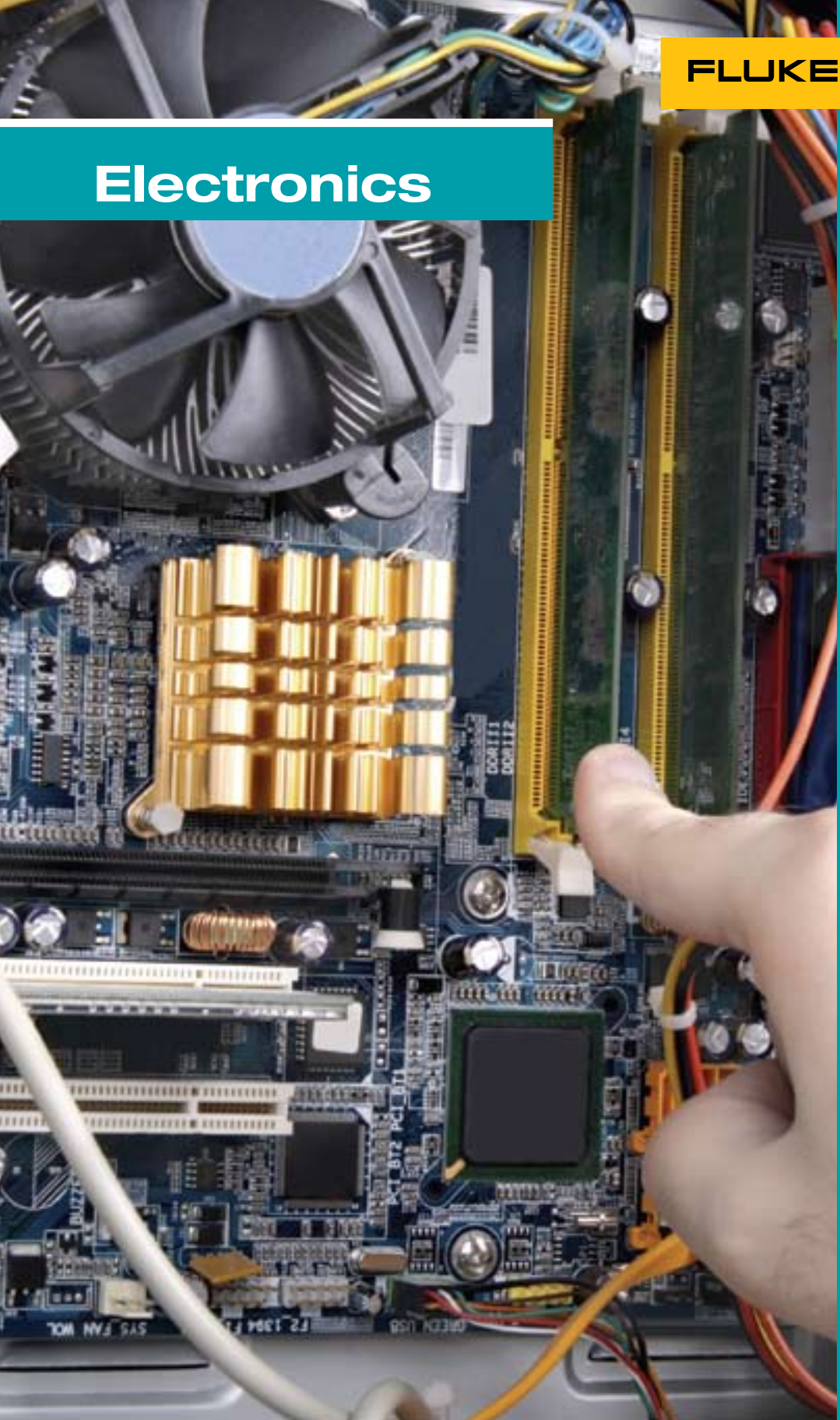
Cranes

5 "I repair overhead traveling electric cranes. There are many times when I am electrically troubleshooting the crane in tight and cramped situations. Many of the panels do not have any room inside to lay a large meter down, so you have to try and find somewhere outside the panel. However, there is often no spot outside for a large meter either. To be able to detach the display and set it in a small area would be awesome." F.P., Illinois

6 "The Fluke 223 will allow our Maintenance Technicians to monitor overhead crane parameters while the crane operates without having to "ride the crane". This will enhance safety on our cranes with catwalks. We will now be able to monitor cranes without catwalks, which we previously couldn't monitor during operation." B.F., Nebraska

FLUKE®

Electronics



Electronics

FLUKE®

1 "What an excellent idea the remote display multimeter is! This would be an ideal tool for working in the back of electronic equipment racks. When working on rack-mounted equipment, you often have to attach probes in awkward locations in the rack, and trying to read a meter inside the rack, sometimes sideways or upside-down, is difficult at best – especially when you are holding the leads with both hands! The ability to place the display in a convenient location and then have your hands free for the probes would be a terrific capability, as good as an additional person." D.E., Florida

2 "I am a broadcast engineer. I work primarily in radio and most of my work is with transmitters. Troubleshooting transmitters is often a dangerous and time consuming process. Modern transmitters (and of course older ones too) still use vacuum tubes. These tubes are often large and use very high voltages. Everything between 3,000 and 12,000 volts DC. Furthermore these tubes are mounted in enclosures which must be closed when operating. It is often very difficult to diagnose a problem by measuring voltages inside this enclosure. You can't see the meter! And often stringing leads through a door on the enclosure doesn't work because the door won't close all the way. This causes voltage interlocks and air interlocks to be open. The 233 opens up countless opportunities for this kind of troubleshooting. I can hardly wait to get my hands on one and have the ability to remotely look at filament voltages, grid bias voltages, screen voltages and even very high plates voltage using a high voltage probe. What a great invention!" J.B., Oregon

3 "Our engineers have designed automated test racks that look great: all the cables are inside the cabinet and there's only one connection on the front to attach the unit under test. Unfortunately for me, when I have to calibrate the power supplies I often have to be in two places at once; at the back, inside the cabinet where the connections are, and in the front where the controls are. With one of these multimeters I could eliminate the back and forth, and be far more productive." R.S., California

Electronics

4 "Determining the test point values in a transmitter is difficult since reading them requires the access door to be closed. You could override safety and keep the door open, but that can be lethal. Verifying values while our transmitter is working correctly would be very helpful especially on the audio side so we would have accurate information to troubleshoot in the event of a transmitter failure." J.J., South Carolina

5 "As a collector of vintage computing equipment, I often need to test and repair aging electronic circuits. Fluke 233 would ease the troubleshooting of display driver circuitry of an HP–35. With a detachable display, I would be able to monitor the outputs I'm testing without having to divert my attention to a meter at the side of my workbench, thus eliminating the risk of my probes slipping and shorting out a hard–to–find obsolete component." T.M., Ohio

6 "Having a remote display would allow me to go up front in my shop and deal with a customer, while monitoring a voltage (or, more likely, a current) in a piece of gear cooking on the bench while waiting for an intermittent to show up. I work exclusively on vacuum tube gear (I build/repair/modify tube guitar amps for rock stars), some of which is nearly 50 years old, so being able to see what's happening from a distance without resorting to my usual method, i.e., seeing or smelling the magic smoke, would be a definite plus." W.W., Colorado

Facilities

Facilities

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1 "Doing maintenance in a nursing home, I get into all kinds of situations where the Fluke 233 would be of great value. Examples are working on overhead lights, rooftop HVAC units, PTAC units, or simply lighting in the hallways. Since we almost always work alone this meter would be invaluable in enabling me to see readings while accessing hard to reach contact points. It is certainly a great innovation in the world of test equipment." D.L., New York

2 "I work alone at night on concourses where the security doors I need to check are twenty or more feet away from the door controllers. Your product would make checking them so much easier that I am going to try to get my boss to buy one regardless of whether I win one or not." T.B., Colorado

3 "My family operates an irrigated farm. I think the biggest advantage would be when you have to start the well from the main panel and take an amp reading at the pivot panel 10–20 feet away. With the remote display this could be accomplished with 1 person instead of having to get a second person to help, saving time and payroll expense. Another advantage is when you would need to check the amp draw on a center drive motor. You could hook the remote display multi meter on the center drive motor and then be at the tower box on the pivot tower with the display when you turned it on and watch the draw on the remote display. For these reasons I think this would be a great addition to our tool box for safety and cost saving reasons." S.C., Nebraska

Facilities

4 "I would use this when I am in the ceiling trying to check voltages or checking for shorts and unable to hold both the leads and meter and flashlight at same time. Sometimes I have to climb over ductwork to the junction boxes. With Fluke 233 I could hook up leads and take the display into the ceiling with a flashlight sometimes having to"
W.B., Florida

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Hospitals

Hospitals

1 "I think this is a brilliant idea! I am in the diagnostic imaging field dealing mainly with ionizing radiation. I normally have to stand behind a lead shield while making exposures and then go look at measurement. I think this would be a valuable asset to my test equipment collection." D.J., Mississippi

2 "The Fluke 233 would be extremely useful in the servicing and adjustment of the many different types of radiation-producing equipment available, such as: radiographic and fluoroscopic x-ray machines, CT scanners, and very high energy linear accelerators. Safety regulations in the U.S. and other countries limit the exposure to radiation of individuals working around radiation-producing equipment. To meet the requirements of the regulations while they are taking measurements on activated equipment, service engineers must either wear heavy lead shielding or actually leave the room when high-energy machines are activated. The Fluke 233 will make the gathering of measurements on radiation-producing equipment easier by eliminating the need to wear lead shields in the case of conventional equipment and the use of long test leads, one-shot peak measurements or CCTV remote viewing of meters for high-energy equipment." G.F., California

3 "I work on Linear Accelerators, a piece of medical equipment used to treat cancer patients with radiation. We accelerate an electron bunch using RF energy to give the electrons more energy and mass. When the electrons are stopped by the tungsten target they strike, we get our radiation. Therefore there are times when trouble shooting that I can not be in the treatment room while running the accelerator. There are several occasions when I have set up my Fluke 289 to record an event or possible event to trouble shoot some problems in various areas of the accelerator. I can see where it may be much quicker to see the event occur on the Fluke 233 for this trouble shooting." B.L., Texas

Hospitals

4 "Would be very useful in a hospital setting, working in the OR's, you could clamp on a meter and take the reading from outside the sterile area." R.S., Connecticut

5 "Here at the hospital we have hundreds of electronic VAV mixing boxes which require constant maintenance and calibration. This work is done off of a ladder which of course requires your head to be up in the ceiling (most of the time in a very awkward position). The thermostat obviously is located on the wall most of time in the room/office you are working in, but on many occasions the thermostat might be in an adjacent room. With this device, it could be hooked up to the points on the mixing box you need to read and you can make changes on the electronic thermostat and see the reactions immediately. The ease of the remote read would be beyond beneficial with the time savings and the safety factor of not trying to hold device, flashlight and running up and down ladder to make a change or take a reading. This could be one of the primary functions, I could also envision this device use for startups of some motor control centers where you would not want your face directly near the points you are trying to measure." T.L., Ohio

HVAC

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1 "To be able to separate the read out from the meter would be an exceptional tool for use in the commercial HVAC field. I work on many units that are very large and require me to move from one side or area to another and continue to monitor amperage readings or voltage readings. The safety aspect is also very useful. When working on a 100 ton package ac unit alone, this would be a valuable and time saving device for me. In the past it would take one person to monitor the meter and the other to work the controls that are located 10 – 20 feet away. With this type of tool you could see the reaction of the equipment while working the controls. Another location would be working on electrical in the ceiling. With this tool you would not have to make all the trips up and down the ladder as you tested a lighting circuit for power." S.H., Texas

2 "Air conditioning units are located in some wonderful places. Summer time temperatures of 95F or 100F lead to 140F degree attics. On homes where the air handlers are installed in an attic area, a service man has to crawl on all fours while dragging tools behind him in order to get to the unit. Time of useful troubleshooting is about 15 minutes. Once in front of the unit a service technician will have to roll on one side to face the broken unit and being on his side pins one arm below him. He will be limited to working with just one arm and partial use of the lower hand. The meter can be balanced on the upper part of the moveable arm so that once the leads are in place the arm can be raised, tipping the meter from horizontal to vertical allowing about a half second to see the face of the meter before it drops out of sight and has to be repositioned." J.A., Florida

3 "I would use it to help diagnose HVAC problems on roof top units. I would hook up the leads to the compressor and be able to go to the control panel on the other side of the unit and see my amp readings while working at the control panel. It would save a lot of time and I would not have to have a coworker yell out to me the readings on the Fluke meter." D.M., Wisconsin

HVAC

4 "I could really use this meter when I am checking the temperature on the roof and panel display downstairs. I could stick the probe into the exhaust stack on the roof, and take the display downstairs to the main control panel. I can then adjust temperature and see the output at the stack. Having the 233 would make it unnecessary to have two people, one on the roof and one downstairs, plus two radios to communicate back and forth." P.J., South Carolina

5 "I do work on large scale airflow test setups where adjustments on one end of the setup affect voltage/current output on circuits on the far end. Instead of working in pairs, one adjusting flow valves etc. and the other guy yelling out the readings, having the 233 would be great. Instead of having to get another person on deck to help, I could make adjustments while watching the results in real time. Another benefit is having the results there immediately and not having to wait for a yell, which would help the test accuracy. To win one would be great, but I'll get one regardless!" D.C., Texas

6 "As a buildings automation systems specialist my job is to set up buildings control systems from start to finish. I would definitely use the Fluke 233 with start-ups of new VAC under-floor and above-ceiling HVAC systems. The days of lying on your stomach, twisting your neck and sticking your head under a false floor would be over. The same goes for standing on you toes on an 8-foot ladder, stretching your body out and nearly tipping the ladder over and holding the false ceiling grid and reaching your arm out with a flashlight to read the display on your meter." W.H., South Dakota

Industrial Controls

Industrial Controls

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1 "It would be most helpful when checking voltages on eyes and switches on machinery while product was running to ensure that the controls were getting the correct signals from the eyes and switches. It would also be helpful in hard-to-access control panels that now require two people to work on. It is easy to see the multimeter actually paying for itself in a very short time, cutting a two person job down to one." A.P., Virginia

2 "We have many machines in our manufacturing facility that have electrical enclosures mounted away from the operator controls for the machine. When troubleshooting it is often necessary to have one person monitor a test point in the electrical panel while another person operates the machine. This is not always the best scenario as two people are observing different aspects and events on the machine. With a remote readout, it is possible for one person to watch for changes on a test point in real-time while operating a machine. This capability improves and shortens the troubleshooting process." J.D., Oregon

3 "This is a great idea! We do a tremendous amount of work around Motor Control Centers (MCC) and PLC cabinets. This remote display would allow greater flexibility for the programmer to monitor certain conditions in the MCC while troubleshooting the PLC logic. Some of our work is in tight-fitting areas of our structures. This would allow us to monitor points in a junction box without having to twist your body around, hold the meter, hold the test leads and still monitor the process. It would be an enhanced benefit for the remote display if it had a magnetic clip on it to hang it on a metal enclosure." D.K., West Virginia

4 "This meter has great possibilities! The versatility of being able to use a more convenient test point while operating interlocks and remote switches will simplify troubleshooting control circuits immensely. A valuable tool when time is critical or a second electrician is not available to monitor the meter." R.B., California

Industrial Controls

5 "A meter with a remote display would be very useful for startup and troubleshooting of control panels and I/O Cabinets. Frequently, the meter needs to be inside the cabinet connected to test points while you need to be in front of the cabinet actuating the circuit being tested. To be able to have the display positioned where you can see it while conducting the testing simplifies the process and reduces the manpower needed. There is also great potential for using this feature when testing motor starters as the meter could be inside the starter cubicle with the display outside reducing the exposure to arc flash hazard while troubleshooting." T.B., Pennsylvania

6 "This would be great to use when looking for open circuits. Ever had to look for that needle in the haystack? Bad connections that you have to go back and forth testing and remaking connection trying to find that one loose wire. It would also be great for testing pump control switches. When it normally takes two people to do the testing now can be done by one person. To be at two places at the same time is a great idea and one of the newest and most innovative ideas in a long time. If I don't win one, I will be buying one very soon." W.H., Oregon

7 "Sometimes we have to monitor voltage inside the printing machines. Currently we have safety features that allow us to run the machine with the doors open. With this meter we could run with doors closed and save the product that we are testing." R.B., North Carolina

Manufacturing

Manufacturing

FLUKE®

1 "A meter like this would be a tremendous safety benefit when working on various packaging machines and conveyor lines. These systems get quite large and often the control panel is located on the opposite side of the various motors and electrical connections. This would allow me to safely read voltage measurements without trying to reach across the machines to see the meter display or have to open motor connection boxes to try and read voltage while trying to troubleshoot a problem. I would love to have this meter in my tool box." J.G., Florida

2 "As an Engineering Technician in an automated manufacturing facility, I find many instances where having a remote display on my DMM would make my job both easier and safer.

For example, I regularly need to set the zero and span of strain gauge amplifiers (Load Cells). To do this I can monitor the value on the HMI but, the HMI's are up to 20 feet away from the Load Cells. This means I have to walk back and forth, often around the equipment, or get a second pair of eyes to assist me on the job. Having a remote display on a DMM would allow me to monitor the output in real-time" A.S., California

3 "Asphalt plant controls and power system cabinets contain numerous motor starters, circuit breakers, motor overloads and heavy wiring to accommodate the 480 volt, three-phase power. A common issue is where to place your meter while you are troubleshooting. The cabinets are often 6 foot tall and have wall to wall components with little room to spare for places to put your meter so, you can see the display and safely reach the connection point you are trying to troubleshoot. A remote display meter addresses concerns and issues I face in my daily tasks at my job." J.M., Iowa

Manufacturing

4 "I would use your remote display multimeter to test and/or setup water flow switches on the semiconductor manufacturing equipment I work on. A lot of the equipment we have has water flow switches that are not near the circuit breakers that control the water pumps so we have to setup a meter and then walk around the equipment to turn on or off the pump and then walk around the equipment to see if the flow switch has sensed that the flow is on or off." P.M., Florida

5 "Our company has a significant number of metal fabrication machines ranging from Press Brakes to Turret Punch Presses. Because of the size of the machines and the location of various components needing monitoring electrically, we frequently need a second man to assist with the monitoring. While one maintenance person is on top of the machine the other is on the ground pressing a pedal, pressing a button, or turning a momentary key switch to activate a specific component. The problem is, we don't always have the second person available to help out so I have to run very long jumpers from the top of machine to my Fluke 87 on the ground. I hate running jumpers this long (sometimes 15–18 feet long) it just gets to be a tangled mess, not to mention the clips coming loose because of machine movement. I am very excited about this new Fluke 233 Remote Display Multimeter." D.F., Illinois

Networks

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1 "I would use the Fluke 233 gathering readings on the variation of current consumption of our telecom equipment across its temperature range in a thermal chamber. Due to the remote read-out, I should be able to place the test unit, multimeter base and a current probe inside the chamber while gathering readings outside of the chamber. I can then vary the environmental temperature and measure the variation in the current going to the amplification section of the wireless equipment." M.N., Minnesota

2 "I can easily imagine using the Fluke 233 at a broadcast transmitter site. There are instances when you need to measure a parameter inside the box. Some will defeat the door safety interlocks to make the measurements. They will place the probes on a circuit in the back, run around to the front of the transmitter to energize the circuit, then run back to see the reading, run to the front to make adjustments, run back to the rear to check the readings, etc. It would be great to be able to place the probes, close the rear door and then safely take the readings while energizing and adjusting the circuit from the front, keeping the door safety interlocks in place." J.B., Kansas

3 "The most major problem that we face when we install a device network for the assembly line is the voltage drop that happens in a node which causes the break in the communication with the devices that connected to it and halt the communication with all the nodes that exceed that node. To solve this problem we usually disconnect all the communication nodes and reconnect them one by one while we measure the DC power in the control panel and when we notice a voltage drop by 10% we add a power supply. With the new Fluke 233 it will make the job much easier and there is no need to keep going back and forth to and from the control panel to check the DC power, so we save time and effort to solve the problem." A.E., Michigan

Networks

4 "I work on cell tower generators and most are set up with the generator in a remote room or outside of the switchgear room and/or the control room. So when I take readings directly off the generator to double check the remote meters and to calibrate them is sometimes quite a bit of running back and forth between locations. Having a meter like that would save on time and running around to take readings." B.W., Massachusetts

5 "The detachable screen would be perfect for our panel installations. We install alarm systems. If there is no metallic surface above the panel we cannot hang our Flukes with the magnetic strap. The panel is too narrow for our meters to be free standing. Since we have to measure the resistance and voltages of all the circuits your detachable screen would save us a lot of head turning from the panel to the meter hanging on the panel door. An even greater boon is I would be able to keep the meter in my tool belt as I move about the room & building to various panels & sensors taking measurements." B.O., Oregon

6 "There have been many occasions when I have been working on large AM & FM broadcast transmitters when I certainly could have used a 233. It would be very handy to be able to attach the meter leads to a circuit and leave the meter inside the transmitter, close the interlocked doors, turn on the transmitter and read the display. Such a meter would eliminate the problem of having to defeat the door interlocks in order to be able to see and read the meter. On other occasions it has been necessary to attach a meter to the back side of a large transmitter then go to the controls on the front side of the transmitter to turn on the transmitter. In this situation I would simply take the remote display to the front side of the transmitter where I can control the transmitter and observe the meter reading." M.C., Texas

Electrical Contractors

Electrical Contractors

FLUKE®

1 "I do a lot of testing on machines. Most of the time I can't see the display when I'm measuring, so either I need another guy to help or I have to hold both probes with one hand and hit the hold on the meter." F.N., California

2 "As an electrical contractor, I can imagine many uses for Fluke 233. I would mostly use it to identify wires and circuits. I currently use the beeper and a probe but the lines must be de-energized. With a multimeter, I could identify the lines individually without de-energizing an entire panel. I can also see it used to identify phases and help balance phase loads. It would be great for those hard to reach applications where the meter has to hang while you hold the probes on the device and you're trying to read the screen at the same time. It would seem as though the possibilities are endless and once I own one, I will probably wonder how I got by without it." J.J., California

3 "I would use the remote display multimeter to check out circuit breaker panels. During a safety inspection, there is the question if the circuit breakers are properly labeled, if the labels are old and worn off, if replacement labels have fallen off, or if an electrician has changed what is controlled without updating the labels. The remote display multimeter would allow me to confirm if the circuit breaker panel labels are accurate. This could prevent a serious injury or fatality in the event of lockout / tagout operations in which a worker throws a breaker thinking that the equipment is then de-energized – when it is really not. This is especially important when companies occupy older buildings. With the economy like it is, many companies are downsizing by moving to smaller and older and cheaper locations – and often the electrical systems may not be up to standards." D.Y., Texas

Electrical Contractors

4 "I would use the Fluke 233 to troubleshoot circuitry. It would replace the need to have two men to troubleshoot 3–way switching, or to look at a ceiling box voltage while switching from the ground. I would also appreciate being able to simultaneously do voltage and amperage checks without having to move from branch circuit breaker to load." T.B., Kansas

5 "This Fluke 233 meter is well suited for working in and around areas where two individuals are needed, as when working in communicator centers when the off and on switch is on the other side of the room, shelter, or hallway. The remote display can travel with the tech to turn on or off the distant switch, power outlet, or socket." V.R., Georgia

6 "Imagine the times you've been on a service call working in an old house and not one circuit is labeled in the breaker box. Now you have to find the right breaker to turn off... It usually takes two people, or one guy and a plug–in radio. With this remote display multimeter "Lock, Tag & Try" will become a snap, like having a second set of hands in your pocket. You'll quickly and safely be able to get on with the real work. I'd love to have one..." B.H., Delaware


BUILDING 2
LOCKOUT STATION
SAFETY
LOCKOUT/TAGOUT
CENTER
use LOCKS, TAGS and HASPS
to disable equipment prior to
maintenance, cleaning or inspection
PURA-FIT

NFPA 70E


SAFETY
LOCKOUT/TAGOUT
CENTER

FLUKE®

1 "That would be perfect for using in motor starters. It would allow us to stay out of the arc flash zone while checking/troubleshooting buckets. Open the main breaker, connect the meter, close the door, energize the bucket and run it through its paces."D.V., Colorado

2 "The Fluke 233 Remote Display Multimeter would work brilliantly in the new arc-flash protection system. We would have the ability to install the test leads inside an enclosure on a circuit and close the doors while still monitoring the meter readings." D.R., Florida

3 "This meter could prove useful when taking Min/Max voltage readings inside an energized industrial control panel while minimizing the exposure of the technician to hazardous voltages and arc flash." P.R., Ohio

4 "I would use this meter so I could stand at a distance while my trainee tested voltage on motors. This way I would prevent and static buildup between the two of us, which will reduce the chances of arc flash between us." J.H., Alabama

5 "I could use it to take measurements on automatic transfer switches during operation, so enclosure could remain closed to limit exposure to arc flash." W.S., Montana

6 "I would use the Fluke 233 for monitoring energized equipment more safely while reducing the risk of an arc flash. We would be able to de-energize and open the equipment, install the Fluke 223, and close and re-energize the equipment. We would then be able to safely record readings with the equipment operational and the arc flash hazards reduced." A.S., Pennsylvania

Utilities

FLUKE®

1 "While performing residential energy audits I often times will test the volts and amps of appliances to see which appliances are the biggest energy consumers. The Fluke 233 would be a great tool to have set-up and remotely monitor the draw while energizing/de-energizing from the circuit breaker. In the same application I would be able to show the home owner the results without having them near the appliance being tested. reducing the possibility of a curious customer shocking themselves." S.A., Colorado

2 "If I had one of the Fluke 233 meters we would use it when working on one of the high power transmitters. Often times, we need to monitor test points in one location, but the controls are in an entirely different location." P.B., Indiana

3 "We have recently started our new facility which is completely controlled by PLCs. At times they need to be at a computer screen while trying to test outputs as well as inputs from field devices. This ties up two people, while one could be doing both functions at the same time. Our staff is short, as are many staffs of companies around the country. We provide safe water from a sewerage treatment plant rated at 300 million gallons per day." C.F., Tennessee

4 "What a fantastic idea! Working in the power production industry, there are many times when you test circuits in confined areas. Many of these places have limited room to hang or set a meter in an area where you can clearly read it. I often had to reposition myself to make it possible to test an electrical circuit AND be able to read the meter, then have to do it all over again if the meter slips or you have to change settings. In our industry, if a machine goes down we have minutes to get it back online before we incur peak charges. If less time is spent fumbling with a meter then more time can be focused on troubleshooting, thus saving money and frustration." M.W., California

Utilities

5 "I would GREATLY benefit from the Fluke 233 in the testing and commissioning of distribution and transmission substations. On the relay rack panels we install, we use rear mounted link blocks for voltage and control. But we need to also be at the front of the panels to measure the voltage change, sense the timing of relays and contacts, so the remote capabilities of the Fluke 233 would be a TREMENDOUS asset for me to use and would speed my work up dramatically, thus enhancing my productivity. It would also reduce the need to have a second person come over to assist me in testing, as I could connect my leads across the circuit in the rear of the panel, then watch the display from the front of the panel." R.D., Alabama

6 "I work in an electrical generation station. Setting gap voltage on proximeters used to measure vibration on steam turbines for electrical generation and boiler feed pumps requires a long set of test leads or another person. Voltages are measured at a terminal cabinet approximately 25 to 30 feet from where the adjustments are being made. Having a removable display could make this a one man job. It definitely would eliminate fumbling with long and tangled test leads."
P.E., Ohio

Nuclear

Nuclear

FLUKE®

1 "I work in the nuclear power industry where one of the highest priorities is minimizing radiation dose to employees. In areas where dose is a concern the difference between being in a high dose area and a low dose area can sometimes be as simple as moving to the other side of the room. The ability to connect your test equipment and then move away to a low dose area while continuing to monitor the equipment would be a great benefit." D.D., Carolina

2 "Fluke 233 would be handy at a nuclear power plant during various aspects of battery testing (when test equipment is staged away from the battery string), or switchgear testing whenever one has to be remote during breaker actuation. In any case it would give the test director the flexibility to be mobile at or near equipment during any testing." T.M., Illinois

3 "We have areas in the nuclear power plant that are high dose radiation areas. Using this remote system would save us in many ways. First, it would reduce the radiation dose exposure to the workers, as they could be farther away from the dose source. Second, it would help our station to meet its radiation exposure goals by reducing the individual doses received during work around radioactive areas." H.K., California

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