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I'm not robot


reCAPTCHA

I am not robot!

What is an acceptable megger reading. Acceptable megger test results for motors. Acceptable megger test results for cable.

I've spent over 25 years using meggers for testing industrial equipment, having previously worked in aviation where 100 MegOhms was considered "good" for testing aircraft wiring to ground. Recently, I faced a unique situation with extremely long 480V 3-phase runs exceeding 2000 feet, where the readings varied greatly from 4000 Megs to tens of thousands of ohms due to wet and submerged underground feeders. My background in aviation and the "100 MegOhm rule" had worked well for me, but I realized I needed to learn new tricks to address this unusual installation. I appreciate any feedback or advice on how to handle such situations. According to ANSI and NETA standards, a minimum of 100 MegOhms is required for LV cables at 20°C. In reality, we often encounter irregular readings when testing underground feeders, especially those with moisture or water in the jacket. It's not uncommon to see different readings on each conductor, such as 400 Megs on phase B-C and 25 Megs on A-B.

		Megger 1000 v type						Megger
		1000 volt 1000 ohm scale			1000 volt 100 ohm scale			
Material	Substance	1000V	1000V	1000V	1000V	1000V	1000V	
Technology	Aluminum	1000	1000	1000	1000	1000	1000	1000
	Aluminum alloy	1000	1000	1000	1000	1000	1000	1000
	Aluminum oxide	1000	1000	1000	1000	1000	1000	1000
	Aluminum nitride	1000	1000	1000	1000	1000	1000	1000
	Aluminum nitride oxide	1000	1000	1000	1000	1000	1000	1000
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I've personally seen feeders with initial readings as low as 50 MegOhms that eventually climbed to 500 MegOhms after being left powered on for a day or two. This is because the moisture in the conductor's jacket can be burned off by heat over time, making it more resistant to electrical current. In our experience, we test at 1000V for one minute and look for consistent readings. If the reading is slow to increase, we move on to the next test. Thanks to Zog & Ohmhead for their input! A simple yet effective way to diagnose faulty or damaged insulation is through readings of an insulation-resistance test. This can help prevent issues like electrical shocks and fires. To conduct the test, use a megger and take successive readings at specific intervals over a period of five to 10 minutes. Record your findings every 30 seconds starting from 60 seconds into the test. By comparing the results, you'll notice that good insulation allows for an increase in resistance (measured in ohms) over time, showcasing its ability to absorb charges over longer periods than its capacitance. Conversely, damaged or contaminated insulation will mask absorption with current leakage, keeping resistance low and indicating a potential problem. During the test, if your megger reads a resistance under 1 (1,000 ohms) after the initial 60-second interval, it's likely that the cable has failed and should be removed. If the reading falls between 1-1.25 on your meter, the cable passes with flying colors. Any reading above 1.25 is considered excellent. Continuously monitor the megger over 30-second intervals to gauge the insulation's condition. If the resistance reading continues to increase, it indicates that the cable insulation is in top shape. However, if the levels plateau, this could signal that the insulation is failing and requires attention. Remember to keep a close eye on your readings to catch any potential issues before they escalate into more serious problems.