



OPTOCOUPLER

CNY6x High Voltage Isolation Series

CAT IV High Voltage Isolation



The CNY6x series of CAT IV optocouplers protects equipment and people from being damaged or injured by a high-voltage spike or transient of up to 12 000 V, while allowing data to pass from the high-voltage side to low-voltage monitoring equipment. The optocouplers also isolate extremely noisy high-voltage motors and welding equipment from low-voltage control circuitry

FEATURES

- Category IV (CAT IV) isolation for basic and reinforced installations
 - Creepage from 9.5 mm to 17.0 mm
 - Recurring peak voltage, V_{IORM} , of $1450 V_{PEAK}$
 - Transient overvoltage, V_{IOTM} , of $12000 V_{PEAK}$
- Available in surface-mount (SMD) and through-hole packages
- Isolation voltage, V_{ISO} , of $8200 V_{RMS}$
- Distance from emitter to detector through insulation ≥ 3 mm
- UL, cUL, and VDE certified
- Environmentally friendly “green” construction

APPLICATIONS

- Solar power and wind turbine diagnostic, monitoring, and communication equipment
- Utility line and other high-voltage diagnostic and lab test equipment
- Smart meters
- Welding equipment
- High-voltage motors

RESOURCES

- Datasheet: Surface-mount - CNY64ST, CNY65ST - <http://www.vishay.com/doc?82387>
- Datasheet: Through-hole - CNY64, CNY65, CNY66 - <http://www.vishay.com/doc?83540>
- For technical questions, [contact - optocoupleranswers@vishay.com](mailto:optocoupleranswers@vishay.com)
- Sales contacts: <http://www.vishay.com/doc?99914>





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Optocouplers - CAT IV High Voltage Isolation

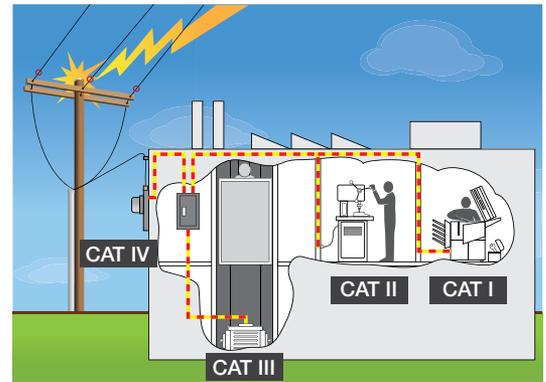
CAT IV - WHY AND WHERE

If lightning were to strike a utility pole near your house or office, a high-voltage spike or transient of up to 10 kV could be carried down the wires and, without proper isolation, damage equipment and injure people. CAT IV isolation protects against such an occurrence. Because solar panels and wind turbine generators also carry high voltages, CAT IV isolation is required to protect sensitive electronics and communication equipment. CAT IV isolation is required where connections are made to a utility or high-voltage line.

IEC REQUIREMENTS

IEC standards define the minimum performance standards for basic and reinforced installation requirements based on the repetitive peak voltage, the maximum transient voltage, and the creepage distance.

For basic installation, the CNY65 and CNY66 meet CAT IV requirements for line voltages up to 1000 V. The CNY64 is CAT IV for line voltages up to 600 V. For reinforced installations, the creepage requirement is 2 times the basic distance. The CNY65 and CNY66 meet CAT IV requirements up to a line voltage of 1000 V. The CNY64 meets CAT IV requirements for line voltages up to 300 V.



CATEGORY IV		INSTALLATION REQUIREMENTS			CNY6x INSTALLATION CATEGORIES		
	RATED LINE VOLTAGE (PER DIN VDE110)	REPETITIVE PEAK VOLTAGE V_{IORM}	TRANSIENT OVERVOLTAGE V_{IOTM}	CREEPAGE (mm)	CNY64 (9.5 mm)	CNY65 (14 mm)	CNY66 (17 mm)
Basic Installation	$\leq 300 V_{RMS}$ (424 V_{PEAK})	$> 1414 V$	$\geq 6000 V_{PEAK}$	3.2	I to IV	I to IV	I to IV
	$\leq 600 V_{RMS}$ (848 V_{PEAK})		$\geq 8000 V_{PEAK}$	6.3			
	$\leq 1000 V_{RMS}$ (1414 V_{PEAK})		$\geq 12000 V_{PEAK}$	10.0	-		
Reinforced Installation	$\leq 300 V_{RMS}$ (424 V_{PEAK})	$> 1414 V$	$\geq 6000 V_{PEAK}$	6.4	I to IV		
	$\leq 600 V_{RMS}$ (848 V_{PEAK})		$\geq 8000 V_{PEAK}$	12.6			
CNY6x Performance		1450 V	12000 V_{PEAK}	9.5, 14, 17			

ORDERING INFORMATION

THROUGH-HOLE			
PACKAGE	CURRENT TRANSFER RATIO % (CTR)		
	50 TO 300	63 TO 125	100 TO 200
DIP	CNY64	CNY64A	CNY64B
	CNY65	CNY65A	CNY65B
	CNY66	-	CNY66B

SURFACE-MOUNT (SMD)				
PACKAGE	CURRENT TRANSFER RATIO % (CTR)			
	50 TO 300	50 TO 150	80 TO 240	100 TO 300
HVSMD	CNY64ST	CNY64AYST	CNY64ABST	CNY64AGRST
	CNY65ST	CNY65AYST	CNY65ABST	CNY65AGRST

	CNY64x	CNY65x	CNY66x
Creepage	9.5 mm	14.0 mm	17.0 mm
Lead Pitch	10.16 mm	15.24 mm	17.8 mm
	400 mil	600 mil	700 mil

