

Class Designation Letters*

for use in assignment of reference designations for electrical and electronics parts and equipments as described in ANSI Y32.16-1975, Reference Designations for Electrical and Electronics Parts and Equipments

22.1 Class Designation Letter

The letters identifying the class of an item shall be selected in accordance with the list in paragraph 22.4.

For reference purposes, see also alphabetical listings of the items and other common and colloquial names in the index.

Graphic symbols do not appear in this standard for H, HP, N, WT, and some MP (listed in paragraph 22.4) because they apply to items beyond the scope of this standard.

Certain item names and designating letters may apply to either a part or an assembly.

22.2 Special Considerations for Class Designation Letter Assignment

22.2.1 Actual versus intended function

If a part serves a purpose other than its generally intended one, the function actually performed shall be represented by the graphic symbol used on the schematic diagram; the class letter shall be chosen from the list in paragraph 22.4 and shall be indicative of its physical characteristics. For example, a semiconductor diode used as a fuse would be represented by the graphic symbol for a fuse (actual function), but the class letter would be D or CR (class of part). If a part has a dual function, the class letter for the principal physical characteristic of the part shall apply.

22.2.2 Assembly versus subassembly

The term subassembly as used herein shall apply equally to an assembly.

22.2.3 Subassembly versus individual part

A group of parts shall not be treated as a subassembly unless it is one or more of the following:

- A plug-in item.
- A significant item covered by a separate schematic.
- A multiapplication item.
- Likely to be handled as a replaceable item for maintenance purposes.

* Device function designations for power switchgear, industrial control, and industrial equipment use are not covered by this standard. For typical application of these device function designations, see:

- American National Standard Manual and Automatic Station Control, Supervisory, and Associated Telemetering Equipments, C37.2-1970.
- NEMA Standard, Industrial Controls and Systems ICS-1970 (R1975).
- Joint Industrial Council Electrical Standards for Mass Production Equipment, EMP-1-1967, and General Purpose Machine Tools, EGP-1-1967.
- Military Standard, Designations for Electric Power Switchgear Devices and Industrial Control Devices, MIL-STD-27.

22.2.4 Specific versus general

The letters A and U (for assembly) shall not be used if more specific class letters are listed in paragraph 22.4 for a particular item.

22.2.5 Inseparable subassemblies

Potted, embedded, riveted, or hermetically sealed subassemblies, modular assemblies, printed circuit boards, and integrated circuit packages and similar items which are ordinarily replaced as a single item of supply shall be treated as parts. They shall be assigned the class letter U, unless a more specific class letter is applicable.

22.3 Item Names

In the alphabetically arranged class letter list of paragraph 22.4, item names approved in the Federal Item Identification Guide, Cataloging Handbook H6-1, as of the date of this edition (though additional modifiers may be necessary), are indicated by the symbol \square . For definitions which are not contained in Handbook H6-1, see American National Standard C42.100.

22.4 Class Designation Letters: Alphabetical List

Parts not specifically included in this list shall be assigned a letter or letters from the list below for the part or class most similar in function.

Designations for general classes of parts are marked with an asterisk (*) to facilitate designation of parts not specifically included in this standard.

A*¹ electronic divider
(see electronic function generator also (other than rotating)
U electronic multiplier
and facsimile set \square
22.2.4) field-polarization amplitude modulator
field-polarization rotator
general circuit element
gyroscope
integrator
positional servomechanism sensor (transducer to electric power)
separable assembly²
separable subassembly
telephone set
telephone station
teleprinter \square
teletypewriter \square

AR amplifier (other than rotating) \square
repeater

¹ The class letter A is assigned on the basis that the item is separable. The class letter U shall be used if the item is inseparable.

² For economic reasons, assemblies which are fundamentally separable may not be so provisioned but may be supplied as complete assemblies. However, the class letter A shall be retained.

AT bolometer
capacitive termination
fixed attenuator \square
inductive termination
isolator (nonreciprocal device)
pad
resistive termination

B blower
motor \square
synchro \square

BT barrier photocell
battery \square
battery cell
blocking layer cell
photovoltaic transducer
solar cell

C capacitor bushing
capacitor \square

CB circuit breaker \square
network protector

CP connector adapter \square
coupling (aperture, loop, or probe)
junction (coaxial or waveguide)

D or CR asymmetrical varistor
crystal diode
current regulator (semiconductor device)
diode (semiconductor type)
diode rectifier (semiconductor type)
diode-type ring demodulator
diode-type ring modulator
metallic rectifier \square
photodiode (photosensitive type)
stabilistor
thyristor (semiconductor diode type)
varactor

D or VR breakdown diode (voltage regulator)
overvoltage absorber \square

DC directional coupler \square

DL delay function
delay line \square
slow-wave structure

DS alphanumeric display device
annunciator
electrically restored drop
general light source
indicator (excluding meter or thermometer) \square
lamp (excluding heating lamp)
light-emitting solid-state device
manually restored drop
photodiode (photoemissive type)
signal light
visual alarm
visual indicator
visual signaling device

E* aluminum cell
antenna \square

Class Designation Letters

	armature binding post ☐ cable termination carbon block circuit terminal conductivity cell electrical contact ☐ electrical contact brush ☐ electrical shield electrolytic cell ferrite bead rings film element gap (horn, protective, or sphere) Hall element ignitor gap insulator ☐ lightning arrester ☐ magnetic core miscellaneous electrical part optical shield permanent magnet ☐ rotary joint (microwave) short circuit (termination) spark gap splice telephone protector ☐ telephone protector block ☐ terminal (individual) ☐ valve element vibrating reed				
EQ	equalizer equalizing network				
F	current limiter (for power cable) fuse ☐ fuse cutout				
FL	filter ☐				
G	electronic chopper ☐ generator ☐ ignition magneto ☐ interrupter vibrator ☐ oscillator rotating amplifier (regulating generator) telephone magneto				
H*	hardware (common fasteners, etc)				
HP*	hydraulic part				
HR	heater ☐ heating lamp heating resistor infrared lamp ☐ thermomechanical transducer				
HS	handset ☐ operator's set				
HT	earphone ☐ electrical headset ☐ receiver (excluding radio receiver) telephone receiver				
		HY	circulator directionally selective transmission device hybrid circuit network ☐ hybrid coil (telephone usage) hybrid junction (magic T)		
		J	disconnecting device (receptacle connector) electrical receptacle connector ☐ jack receptacle (connector, stationary portion) waveguide flange (choke) ☐		
		K	contactor (magnetically operated) relay ☐		
		L	coil (all not classified as transformers) ☐ electrical solenoid ☐ field winding generator field inductor lamp ballast motor field reactor ☐ winding ☐		
		LS	audible alarm audible signaling device buzzer ☐ electric bell ☐ electric horn ☐ loudspeaker ☐ loudspeaker-microphone siren ☐ telephone ringer ☐ telephone sounder ☐ underwater sound transducer		
		M	clock ☐ coulomb accumulator elapsed time recorder electric timer electrical counter ☐ electrochemical step-function device instrument message register meter meter-type level pressure gage oscillograph ☐ oscilloscope ☐ position indicator thermometer		
		MG	converter (rotating machine) dynamotor ☐ inverter (motor-generator) motor-generator ☐		
		MK	hydrophone microphone ☐ telephone transmitter		
		MP*	brake clutch mechanical interlock mechanical part miscellaneous mechanical part (bearing, coupling, gear, shaft)		
		MT	accelerometer measuring transducer mode transducer motional pickup transducer primary detector		
		N ³	equipment subdivision		
		P	disconnecting device (plug connector) electrical plug connector ☐ plug (connector, movable portion) waveguide flange (plain) ☐		
		PS	power supply ☐ rectifier (complete power-supply assembly)		
		PU	head (with various modifiers) sound reproducer ☐		
		Q	semiconductor controlled rectifier semiconductor controlled switch phototransistor (3 terminal) thyatron (semiconductor device) thyatron (semiconductor triode type) transistor ☐		
		R	function potentiometer instrument shunt ☐ magneto-resistor potentiometer potentiometer relay shunt resistor ☐ rheostat ☐		
		RE	radio receiver ☐		
		RT	ballast lamp ballast tube current-regulating resistor ☐ resistance lamp temperature-sensing element thermal resistor ☐ thermistor		
		RV	symmetrical varistor voltage-sensitive resistor ☐		
		S	contactor (manually, mechanically, or thermally operated) disconnecting device (switch) electrical safety interlock flasher (circuit interrupter)		

³ Not a class letter, but used to identify a subdivision of an equipment in the Location Numbering Method.

Class Designation Letters

governor (electrical contact type)

speed regulator (electrical contact type)

switch

telegraph key

telephone dial

thermal cutout (circuit interrupter) (not visual)

thermostat

SQ electric squib

explosive squib

fusible link

igniter squib

sensing link

SR electrical contact ring

rotating contact

slip ring

T autotransformer

coaxial taper

linear coupler

telephone induction coil

telephone repeating coil

transformer

waveguide taper

TB connecting strip

terminal board

terminal strip

test block

TC semiconductor thermocouple

thermocouple

thermopile

TP⁴ test point

TR radio transmitter

U⁴ inseparable assembly
(see also
A*
and
22.2.4)

integrated-circuit package

microcircuit

micromodule

photon-coupled isolator

V electron tube

Geiger-Muller counter tube

ionization chamber

klystron

magnetron

phototube

proportional counter tube

resonator tube (cavity type)

solion

thyatron (electron tube)

traveling-wave tube

voltage regulator (electron tube)

VR induction voltage regulator
(see also
D)

voltage regulator (excluding electron tube)

W bus bar

cable

cable assembly (with connectors)

coaxial cable

conductor

distribution line

distribution path

Goubau line

strip-type transmission line

transmission line

transmission path

waveguide

wire

WT⁵ wiring tiepoint

X fuseholder

lampholder

socket

Y magnetostriction oscillator

piezoelectric crystal unit

quartz crystal unit

tuning-fork resonator

Z artificial line (other than delay line)

balun

carrier-line trap

coupled tunable resonator

directional phase shifter (non-reciprocal)

discontinuity (usually coaxial or waveguide transmission use)

E-H tuner

general network (where specific class letters do not fit)

gyrator

mode suppressor

multistub tuner

phase shifter

phase-changing network

resonator (tuned cavity)

slide-screw tuner

22.5 Item Names: Alphabetical List

The index to this standard shows the class designation letter as applicable under the general rules, together with the item number of the representative graphic symbol.

22.6 Item Designations, IEC 113-2

For reference purposes, Appendix F shows a comparison of the class letters used to identify parts and equipment according to International Electrotechnical Commission (IEC) Publication 113-2 and those assigned in American National Standard Y32.2-1975.

⁴ Not a class letter, but commonly used to designate test points for maintenance purposes. See American National Standard Y14.15-1966 (R1973).

⁵ Not a class letter, but commonly used to designate a tiepoint on connection diagrams. See American National Standard Y14.15-1966 (R1973).