ANSI DEVICE NUMBERS

In the design of electrical power systems, the ANSI standard device numbers identify features of a protective device such as relay or circuit breaker. Device numbers are used to identify functions of devices shown on a schematic diagram.

One physical device may correspond to one function number, for example "29 Isolating Switch", or a single physical device may have many function numbers associated with it, such as a microprocessor numerical protective relay. Suffix & prefix letters may be added to further specify purpose & function of a device.

1	Master Element
2	Time Delay Starting or Closing Relay
3	Checking or Interlocking Relay
4	Master Contactor
5	Stopping
6	Starting Circuit Breaker
7	Rate of Change Relay
8	Control Power Disconnecting Device
9	Reversing Device
10	Unit Sequence Switch
11	Multi-function Device
12	Overspeed Device
13	Synchronous-speed Device
14	Underspeed Device
15	Speed – or Frequency, Matching Device
16	Data Communications Device
17	Shunting or Discharge Switch
18	Accelerating or Decelerating Device
19	Starting to Running Transition Contactor
20	Electrically Operated Valve
21	Distance Relay
22	Equalizer Circuit Breaker
23	Temperature Control Device
24	Volts Per Hertz Relay
25	Synchronizing or Synchronism-Check Device
26	Apparatus Thermal Device
27	Undervoltage Relay
28	Flame detector
29	Isolating Contactor or Switch
30	Annunciator Relay
31	Separate Excitation
32	Directional Power Relay or Reverse Power Relay
33	Position Switch
34	Master Sequence Device
35	Brush-Operating or Slip-Ring Short-Circuiting Device
36	Polarity or Polarizing Voltage Devices
37	Undercurrent or Underpower Relay
38	Bearing Protective Device

39	Mechanical Condition Monitor
40	Field (over/under excitation) Relay
41	Field Circuit Breaker
42	Running Circuit Breaker
43	Manual Transfer or Selector Device
44	Unit Sequence Starting Relay
45	Abnormal Atmospheric Condition Monitor
46	Reverse-phase or Phase-Balance Current Relay
47	Phase-Sequence or Phase-Balance Voltage Relay
48	Incomplete Sequence Relay
49	Machine or Transformer, Thermal Relay
50	Instantaneous Overcurrent Relay
51	AC Inverse Time Overcurrent Relay
52	AC Circuit Breaker
53	Exciter or DC Generator Relay
54	Turning Gear Engaging Device
55	Power Factor Relay
56	Field Application Relay
57	Short-Circuiting or Grounding Device
58	Rectification Failure Relay
59	Overvoltage Relay
60	Voltage or Current Balance Relay
61	Density Switch or Sensor
62	Time-Delay Stopping or Opening Relay
63	Pressure Switch
64	Ground Detector Relay
65	Governor
66	Notching or Jogging Device
67	AC Directional Overcurrent Relay
68	Blocking Relay
69	Permissive Control Device
70	Rheostat
71	Liquid Level Switch
72	DC Circuit Breaker
73	Load-Resistor Contactor
74	Alarm Relay
75	Position Changing Mechanism
76	DC Overcurrent Relay
77	Telemetering Device
78	Phase-Angle Measuring Relay or "Out-of-Step" Relay
79	AC Reclosing Relay
80	Flow Switch
81	Frequency Relay
82	DC Reclosing Relay
83	Automatic Selective Control or Transfer Relay
84	Operating Mechanism
85	Communications, Carrier or Pilot-Wire Relay
86	Lockout Relay
87	Differential Protective Relay
88	Auxiliary Motor or Motor Generator

89	Line Switch
90	Regulating Device
91	Voltage Directional Relay
92	Voltage and Power Directional Relay
93	Field Changing Contactor
94	Tripping or Trip-Free Relay
95	*For specific applications where other numbers are not suitable*
96	Busbar Trip Lockout relay
97	*For specific applications where other numbers are not suitable*
98	*For specific applications where other numbers are not suitable*
99	*For specific applications where other numbers are not suitable*
150	Earth Fault Indicator
AFD	Arc Flash Detector
CLK	Clock or Timing Source
DDR	Dynamic Disturbance Recorder
DFR	Digital Fault Recorder
ENV	Environmental Data
HIZ	High Impedance Fault Detector
HMI	Human Machine Interface
HST	Historian
LGC	Scheme Logic
MET	Substation Metering
PDC	Phasor Data Concentrator
PMU	Phasor Measurement Unit
PQM	Power Quality Monitor
RIO	Remote Input / Output Device
RTU	Remote Terminal Unit / Data Concentrator
SER	Sequence of Events Recorder
TCM	Trip Circuit Monitor

Suffixes & Prefixes

Suffix letters or numbers may be used with device numbers. For example, the suffix "N" is used if the device is connected to a neutral wire, hence 59N is a relay used for protection against neutral displacement & suffixes X, Y, Z are used for auxiliary devices. Similarly, the "G" suffix is used to denote a "ground", hence "51G" is a time overcurrent ground relay. The "G" suffix can also mean "generator", hence "87G" is a generator differential relay while "87T" is a transformer differential relay. "F" can denote "field" on a generator or "fuse", as in the protective fuse for a transformer.

Suffix numbers are used to distinguish multiple "same" devices in the same equipment such as 51-1 & 51–2. Device numbers may be combined if the device provides multiple functions, such as instantaneous & inverse time overcurrent relay denoted as 50/51.