Basler Electric **6/16/09**

Guide to Common IEEE Device Function Numbers

The devices in switching equipment are referred to by numbers, according to the functions they perform. These numbers are based on a system which has been adopted as standard for automatic switchgear by IEEE. This system is used on connection diagrams, in instruction books, and in specifications. The following list can be found in IEEE Std C37.2-2008.

Device No.	Function
1	Master Element
2	Time-Delay Starting or Closing Relay
3	Checking or Interlocking Relay
4	Master Contactor
5	Stopping Device
6	Starting Circuit Breaker
7	Anode Circuit Breaker
8	Control Power Disconnecting Device
9	Reversing Device
10	Unit Sequence Switch
11	Multifunction 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 Relay
26	Apparatus Thermal Device
27	Undervoltage Relay
28	Flame detector
29	Isolating Contactor or switch
30	Annunciator Relay
31	Separate Excitation Device
32	Directional Power Relay
33	Position Switch
34	Master Sequence Switch
35	Brush-Operating or Slip-Ring Short-Circuiting Device
36	Polarity Device
37	Undercurrent or Underpower Relay

38 Bearing Protective Device
39 Mechanical condition monitor
40 Field 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-Balance Current Relay
47 Phase-balance or Phase-Sequence Voltage Relay
48 Incomplete Sequence Relay
49 Machine or Transformer Thermal Relay
50 Instantaneous Overcurrent Relay
51 AC Time Overcurrent Relay
52 AC Circuit Breaker
53 Field excitation 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 or "out of step" 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
79 AC Reclosing Relay
80 Flow switch
81 Frequency Relay
82 DC load-measuring Reclosing Relay
83 Automatic Selective Control or Transfer Relay
84 Operating Mechanism

85	Pilot 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
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 I/O device
RTU	Data concentrator
SER	Sequence of events recorder
TCM	Trip circuit monitor

Basler Electric serves the electric power industry with solid state relays for feeder, transmission, bus, transformer, generator and motor protection applications. Designed to operate in harsh electrical environments, meeting or exceeding ANSI/IEEE and IEC standards, Basler utility grade and industrial grade relays offer high accuracy, low burden, flexibility, and low maintenance.

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For more information on the functions provided in Basler BE1 Numerical relays, please visit http://www.basler.com/html/pcsnumfts.htm

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