

SECTION 16 - VITAL CIRCUIT AND SOFTWARE DESIGN

<u>Part</u>	<u>C</u>	<u>Type & Subject</u>	<u>Pages</u>	<u>Status</u>
<u>16.1 Recommended Nomenclature</u>				
16.1.1	37-3	Recommended Circuit Nomenclature	17	Revised 2007
<u>16.2 Recommended Symbols</u>				
16.2.1	37-3	Recommended Graphical Symbols for Wayside Signals	1	Revised 2006
16.2.2	37-3	Recommended Graphical Symbols for Signal Supports	1	Reaffirmed 2006
16.2.4	37-3	Recommended Graphical Symbols for Buildings, Bridges and Tunnels	1	Reaffirmed 2006
16.2.5	37-3	Recommended Graphical Symbols for Wayside Fixtures	1	Reaffirmed 2006
16.2.6	37-3	Recommended Graphical Symbols for Switches	1	Reaffirmed 2006
16.2.7	37-3	Recommended Graphical Symbols for Derails	1	Reaffirmed 2006
16.2.8	37-3	Recommended Graphical Symbols for Miscellaneous Devices Applied to Tracks	3	Revised 2006
16.2.11	37-3	Recommended Graphical Symbols for Relays	1	Revised 2006
16.2.12	37-3	Recommended Graphical Symbols for Relay Contacts	3	Reaffirmed 2006
16.2.13	37-3	Recommended Graphical Symbols for Circuit Controller Contacts, Miscellaneous	2	Reaffirmed 2006

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16.2.14	37-3	Recommended Graphical Symbols for Circuit Controller Contacts, Contacts Actuated Mechanically by Interlocking Machine Lever or Latch	1	Reaffirmed 2006
16.2.15	37-3	Recommended Graphical Symbols for Contacts Actuated by Switch Points, Derails or Locking Connections	2	Reaffirmed 2006
16.2.16	37-3	Recommended Graphical Symbols for Signals and Electro-Pneumatic Devices	1	Reaffirmed 2006
16.2.17	37-3	Recommended Graphical Symbols for Indicators, Locks, Buzzers and Bells	1	Reaffirmed 2006
16.2.18	37-3	Recommended Graphical Symbols for Circuit Appurtenances	3	Revised 2005
16.2.19	37-3	Recommended Graphical Symbols for Miscellaneous Apparatus	1	Revised 2006
<u>16.3 Recommended General Design Guidelines</u>				
16.3.1	37-3	Recommended Vital Circuit Design Guidelines for Relay Based Systems	5	Revised 2006
16.3.2	37-3	Recommended Application Design Guidelines for Isolation of Power Supplies Used in Vital Signal Systems	2	Revised 2007
<u>16.4 Interlocking & Control Point Recommended Circuits</u>				
16.4.1	37-3	Recommended Vital Circuit Design Guidelines for Time Locking	5	Revised 2007

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16.4.2	37-3	Recommended Vital Circuit Design Guidelines for Route Locking	5	Reaffirmed 2007
16.4.3	37-3	Recommended Vital Circuit Design Guidelines for Traffic Circuits at Interlocking and Control Points	2	Revised 2005
16.4.4	37-3	Recommended Vital Circuit Design Guidelines for Route Check Networks at Interlocking and Control Points	3	Reaffirmed 2007
16.4.5	37-3	Recommended Vital Circuit Design Guidelines for Home Networks at Interlocking and Control Points	4	New 2002
16.4.7	37-3	Recommended Vital Circuit Design Guidelines for Battery Check Circuits at Interlocking and Control Points	6	Reaffirmed 2007
16.4.8	37-3	Recommended Vital Circuit Design Guidelines for Loss-of-Shunt Circuits	4	Revised 2007
16.4.10	37-3	Recommended Vital Circuit Design Guidelines for Stuck-Mechanism Detection for Controlled Signals	6	Reaffirmed 2007
16.4.20	37-3	Recommended Vital Circuit Design Guidelines for Following Move Stick Circuits at Interlocking and Control Points	3	Reaffirmed 1999

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16.4.21	37-3	Recommended Vital Circuit Design Guidelines for Engine Return Stick Circuits at Interlocking and Control Points	3	Revised 1999
16.4.30	37-3	Recommended Vital Circuit Design Guidelines for Light Out Detection on Color-Light Signals	6	Revised 2004
16.4.32	37-3	Recommended Vital Circuit Design Guidelines for Approach-Lighting Controlled Searchlight Signals.	3	Revised 2005
16.4.40	37-3	Recommended Vital Circuit Design Guidelines for Track Blocking at Interlocking and Control Points	7	Revised 2001
16.4.50	37-3	Recommended Design Guidelines for Automatic Speed Control With Continuous Cab Signaling	10	New 2002
<u>16.5 Recommended Automatic Signal Circuits</u>				
16.5.1	37-3	Recommended Vital Circuit Design Guidelines for Four Wire Tumbledown Line Circuits in Traffic Control Systems.	4	Revised 2006
16.5.2	37-3	Recommended Vital Circuit and Software Design Guidelines for Limited Tumbledown Applications in Traffic Control Systems	4	New 2007
16.5.4	37-3	Recommended Vital Design Guidelines for Directional Stick Circuits at Automatic Signals in TCS	2	Revised 2007

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16.5.10	37-3	Recommended Vital Circuit Design Guidelines for Stuck-Mechanism Detection for Automatic Signals	3	Revised 2004
16.5.20	37-3	Recommended Vital Circuit Design Guidelines for Directional Stick Circuits at Automatic Signals	2	Reaffirmed 2005
<u>16.6 Recommended Circuits for Switches</u>				
16.6.3A	37-3	Recommended Vital Circuit Design Guidelines for Self-Restoring Switches in Traffic Control Systems	7	Reaffirmed 2004
16.6.3B	37-3	Recommended Vital Circuit Design Guidelines for Self-Restoring Switches in Automatic Block Signal Territory	7	Revised 2004
16.6.3C	37-3	Recommended Vital Design Guidelines for Self-Restoring Switches in Non-Signaled Territory on Main Tracks	7	Revised 2004
16.6.4	37-3	Recommended Vital Circuit Design Guidelines for Spring Switches	3	Revised 2007
16.6.5	37-3	Recommended Vital Circuit Design Guidelines for Electric Switch Machines	6	Revised 2005
<u>16.9 Recommended Special Design Applications</u>				
16.9.1	37-3	Recommended Vital Design Guidelines for Slide Fences	4	Revised 2007

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<u>16.30 Recommended Highway-Rail Grade Crossing Warning System Circuits</u>				
16.30.2	36-1	Recommended Vital Circuit Design Guidelines for Stick Circuits with Highway-Rail Grade Crossing Warning Systems	2	Revised 2007
16.30.5	36-1	Recommended Vital Circuit Design Guidelines for Reverse Switch Cut-Out Circuits	3	Revised 2005
16.30.9	36-1	Recommended Vital Circuit Design Guidelines for Pushbutton Cut-Out	2	Revised 2005
16.30.10	36-1	Recommended Vital Circuit Design Guidelines for Highway Traffic Signal Interconnection	8	Revised 2004
16.30.11	36-1	Recommended Vital Circuit Design Guidelines for Adjacent Track Interconnection Circuits Using Independent Highway-Rail Grade Crossing Control Systems	6	Revised 2006
16.30.14	36-1	Recommended Vital Circuit Design Guidelines for Timing Circuits	3	Revised 2006
16.30.15	36-1	Recommended Vital Circuit Design Guidelines for Relay Based Flashing-Light Circuits	3	Revised 2005
16.30.16	36-1	Recommended Vital Circuit Design Guidelines for Relay Based Flashing Light Circuits with Gate Control	3	Revised 2005

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<u>16.50 Recommended Drawings</u>				
16.50.1	37-3	Recommended Location Plan: C.P. Brannen	1	Reaffirmed 2006
16.50.2	37-3	Recommended Line Circuits in Traffic Control System	1	Reaffirmed 2006