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function [tr12,tr14,tr24,tr23,tr34] = fcn(dt12,dt21,dt012,dt021,dt23,dt32,dt023,dt032,
dt14,dt41,dt014,dt041,dt24,dt42,dt024,dt042,dt34,dt43,dt034,dt043)
    tr12=1; tr14=1; tr24=1; tr23=1; tr34=1;

    if (abs(dt12) >=80 || abs(dt23) >=80 || abs(dt14) >=80 || abs(dt24) >=80 || abs
(dt34) >=80)
        % fault occurs

        if ((dt12 >=80 && dt21 >=80) || (dt012 <=-80 && dt021 <=-80))
            % fault in
Line 1-2
            tr12=0;
            if((dt12 >=80 && dt21 >=80) && (dt012 <=-80 && dt021 <=-80))
                disp('Line 1-2 Bipolar Fault');

            elseif (dt12 >=80 && dt21 >=80)
                disp('Line 1-2 +ve Pole To Ground Fault');

            else
                disp('Line 1-2 -VE Pole To Ground Fault');
            end
        end
        if ((dt14 >=80 && dt41 >=80) || (dt014 <=-80 && dt041 <=-80))
            % fault in
Line 1-4
            tr14=0;
            if((dt14 >=80 && dt41 >=80) && (dt014 <=-80 && dt041 <=-80))
                disp('Line 1-4 Bipolar Fault');

            elseif (dt14 >=80 && dt41 >=80)
                disp('Line 1-4 +ve Pole To Ground Fault');

            else
                disp('Line 1-4 -VE Pole To Ground Fault');
            end
        end
        if ((dt24 >=80 && dt42 >=80) || (dt024 <=-80 && dt042 <=-80))
            % fault in
Line 2-4
            tr24=0;
            if((dt24 >=80 && dt42 >=80) && (dt024 <=-80 && dt042 <=-80))
                disp('Line 2-4 Bipolar Fault');

            elseif (dt24 >=80 && dt42 >=80)
                disp('Line 2-4 +ve Pole To Ground Fault');

            else
                disp('Line 2-4 -VE Pole To Ground Fault');
            end
        end
        if ((dt23 >=80 && dt32 >=80) || (dt023 <=-80 && dt032 <=-80))
            % fault in
Line 2-3
            tr23=0;
            if((dt23 >=80 && dt32 >=80) && (dt023 <=-80 && dt032 <=-80))

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disp('Line 2-3 Bipolar Fault');

elseif (dt23 >=80 && dt32 >=80)
    disp('Line 2-3 +ve Pole To Ground Fault');

else
    disp('Line 2-3 -VE Pole To Ground Fault');
end
end
if ((dt34 >=80 && dt43 >=80) || (dt034 <=-80 && dt043 <=-80))    % fault in ✓
Line 3-4
    tr34=0;
    if((dt34 >=80 && dt43 >=80) && (dt034 <=-80 && dt043 <=-80))
        disp('Line 3-4 Bipolar Fault');

    elseif (dt34 >=80 && dt43 >=80)
        disp('Line 3-4 +ve Pole To Ground Fault');

    else
        disp('Line 3-4 -VE Pole To Ground Fault');
    end
end
end
```