

WORKSHEET FOR DCP216 SETUP, PARAMETER AND PID VALUE SETTING

Client

Model No.

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| Equipment Name : | Product Name : |
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| D | C | P | 2 | 1 | 6 | | | | | | |
| Tag Name | | | | | | | | | | | |

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| Application Engineer | |
| Salesman | |
| Date | |

1. Setup

| No. | Indication, set point value at the delivery time from factory | Item | Client's set point | No. | Indication, set point value at the delivery time from factory | Item | Client's set point | | | | | | | | | | | | | | | | |
|-----|---|---|--------------------|-----|---|--|--------------------|--|--|--|--|--|--|--|--|--|--|--|-----|----|------------|--|-------|
| 1 | C 1 0 | Key lock 0 : No key lock 1 : SETUP change is not allowable. 2 : Setting data are not changeable. 3 : DISP key only is changeable. | C 1 | 13 | C 1 3 0 | Setting of SP4mA -1999 to 9999U Displayed only when 1 in C12. Current output type only is displayed. | C 1 3 | | | | | | | | | | | | | | | | |
| 2 | C 2 0 | Temperature unit 0 : Centigrade (°C) 1 : Fahrenheit (°F) T/C and RTD inputs only are displayed. | C 2 | 14 | C 1 4 1 0 0 | Setting of SP20mA -1999 to 9999U Displayed only when 1 in C12. Current output type only is displayed. | C 1 4 | | | | | | | | | | | | | | | | |
| 3 | C 3 0 | Control action 0 : Reverse action 1 : Direct action | C 3 | 15 | C 1 5 0 | Type of auxiliary output 0 : PV 1 : SP Displayed only when auxiliary output is provided. | C 1 5 | | | | | | | | | | | | | | | | |
| 4 | C 4 0 | MV at PV overrange 0 : Not provided 1 : Provided | C 4 | 16 | C 1 6 0 | Setting of auxiliary output 4mA -1999 to 9999U Displayed only when auxiliary output is provided. | C 1 6 | | | | | | | | | | | | | | | | |
| 5 | C 5 0.0 | Setting value at PV overrange 0.0 to 100.0% (Time proportional type) -10.0 to 110.0% (Current output type) Displayed only when 1 in C4. | C 5 | 17 | C 1 7 1 0 0 | Setting of auxiliary output 20mA -1999 to 9999U Displayed only when auxiliary output is provided. | C 1 7 | | | | | | | | | | | | | | | | |
| 6 | C 6 0 | 0 to 12 (T/C) 20 to 35 (RTD) 40 to 45 (Linear) | C 6 | 18 | C 1 8 0 | Display at programming of EV12 0 : Displayed 1 : Not displayed | C 1 8 | | | | | | | | | | | | | | | | |
| 7 | C 7 0 | Linear PV decimal point position 0 = <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td></tr></table> 1 = <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td></tr></table> 2 = <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td></tr></table> 3 = <table style="display: inline-table; border: none;"><tr><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td><td style="border: 1px solid black; width: 15px; height: 15px;"></td></tr></table> Linear type only displayed. | | | | | | | | | | | | | | | | | C 7 | 19 | C 1 9 0 | Display at programming of T1 to T4 0 : Displayed 1 : Not displayed | C 1 9 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
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| 8 | C 8 0 | Linear PV lower-limit -1999 to upper-limit U Linear type only is displayed. | C 8 | 20 | C 2 0 0 | Display at programming PID group 0: Provided 1: Not provided 2: Provided 3: Not provided G.SOAK 0: Provided 1: Not provided 2: Provided 3: Not provided PV shift 0: Not provided 1: Not provided 2: Provided 3: Provided | C 2 0 | | | | | | | | | | | | | | | | |
| 9 | C 9 1 0 0 0 | Linear PV upper-limit Lower-limit to 9999U Linear type only is displayed. | C 9 | 21 | C 2 1 0 | Display at programming of PV start, cycle, and pattern link. 0 : Not provided 1 : Provided | C 2 1 | | | | | | | | | | | | | | | | |
| 10 | C 1 0 0 | SP limit lower-limit 0% to upper-limit of range | C 1 0 | 22 | C 2 2 0 | Communication address 0 : 1 to 254 Displayed only when communication is provided. | C 2 2 | | | | | | | | | | | | | | | | |
| 11 | C 1 1 1 0 0 | SP limit upper-limit Lower-limit to 100% of range | C 1 1 | 23 | C 2 3 0 | Communication speed 0 : 9600 (BPS) 1 : 4800 2 : 2400 3 : 1200 Displayed only when communication is provided. | C 2 3 | | | | | | | | | | | | | | | | |
| 12 | C 1 2 0 | Type of main output 0 : MV 1 : SP Current output type only is displayed. | C 1 2 | | | | | | | | | | | | | | | | | | | | |

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| 24 | C 2 4 0 | Communication code 0 : 8 bits, even parity bit, 1 stop bit 1 : 8 bits, not parity bit, 2 stop bits Displayed only when communication is provided. | C 2 4 |
| 26 | C 2 5 0 | PV display 1 : Displayed 2 : Not displayed 3 : Not displayed when fixed at 0% of range. | C 2 5 |
| 27 | C 2 7 0 | Time display 0 : Segment remaining time 1 : Operation progress time | C 2 7 |
| 28 | C 2 8 0 | Alarm display 0 : Displayed 1 : Not displayed | C 2 8 |
| 29 | C 2 9 0 | Time unit of program 0 : min/hr 1 : sec/min | C 2 9 |

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|-----|---|---|--------------------|
| 34 | C 3 4 0 | Constant value control selection 0 : Program mode operation 1 : Constant-value mode operation | C 3 4 |
| 35 | C 3 5 0 | A/M selection 0 : Bumpless output when selected by A/M key or communication. 1 : Preset output when selected by A/M key or communication. 2 : Bumpless output when selected by remote switch. 3 : Preset output when selected by remote switch. Preset value is set in C36. When C12-1 (SP output) with 5G output, bumpless is always selected. | C 3 5 |
| 36 | C 3 6 0.0 | Preset manual output 0.0 to 100.0% (0D, 6D output) -10.0 to 110.0% (5G output) Not displayed when C12 = 1 (SP output) with 5G output. | C 3 6 |

2. Parameter

| No. | Indication, set point value at the delivery time from factory | Item | Client's set point |
|-----|---|--|--------------------|
| 1 | P r t c 0 | Program protect 0 : Protected 1 : Not protected | P r t c |
| 2 | F I L T 0.0 | PV filter constant 0.0 to 120.0 sec. | F I L T |
| 3 | P b i a 0 | PV bias -100 to 100U | P b i a |
| 4 | S b i a 0 | SP bias -50 to 50% FS | S b i a |
| 5 | G . S . o a k S | G.SOAK 0 to 100U | G . S . o a k |
| 6 | c y 1 0 | Time proportional output cycle 5 to 120 sec. (Relay type) 1 to 60 sec. (Voltage type) 0D and 6D types only are displayed. | c y |
| 7 | o u t l 1 0 0 . 0 | Manipulated variable change limit 0.0 to 100.0 (Every 0.5 sec.) | o u t l |
| 8 | d i f f S | ON/OFF control differential 0 to 100U Displayed only in 0D, and 6D types. | d i f f |

| No. | Indication, set point value at the delivery time from factory | Item | Client's set point |
|-----|---|---|--------------------|
| 9 | E t 1 0 | Selection of event 1 0 : PV (Direct) 1 : PV (Reverse) 2 : Deviation (Direct) 3 : Deviation (Reverse) 4 : RUN 5 : READY 6 : END | E t 1 |
| 10 | H y s 1 S | Event 1 hysteresis 0 to 100U | H y s 1 |
| 11 | E t 2 0 | Selection of event 2 0 : PV (Direct) 1 : PV (Reverse) 2 : Deviation (Direct) 3 : Deviation (Reverse) 4 : RUN 5 : READY 6 : END | E t 2 |
| 12 | H y s 2 S | Event 2 hysteresis 0 to 100U | H y s 2 |
| 13 | A t 0 | Selection of autotuning 0 : AT is not executed 1 : AT is executed in system 1 2 : AT is executed in system 2 Displayed only when auto tuning is provided. | A t |
| 14 | i o u t 0.0 | PID operation initial manipulated variable 0.0 to 100.0% | i o u t |
| 15 | r P i d 0 | PID operation initialize at advance 0 : PID operation is not initialized. 1 : PID operation is initialized. | r P i d |

3. PID constant setting

| No. | Indication, set point value at the delivery time from factory | Item | Client's set point | No. | Indication, set point value at the delivery time from factory | Item | Client's set point |
|-----|---|---|--------------------|-----|---|---|--------------------|
| 1 | P - 1 100.0 | Proportional band 1 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 1 | 13 | P - 3 100.0 | Proportional band 3 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 3 |
| 2 | I - 1 0 | Integral time 1 0 to 3600 sec. Displayed when P - 1 ≠ 0 | I - 1 | 14 | I - 3 0 | Integral time 3 0 to 3600 sec. Displayed when P - 3 ≠ 0 | I - 3 |
| 3 | D - 1 0 | Derivative time 1 0 to 1200 sec. Displayed when P - 1 ≠ 0 | D - 1 | 15 | D - 3 0 | Derivative time 3 0 to 1200 sec. Displayed when P - 3 ≠ 0 | D - 3 |
| 4 | OL - 1 0.0 or -10.0 | Manipulated variable lower-limit 1 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 1 ≠ 0 | OL - 1 | 16 | OL - 3 0.0 or -10.0 | Manipulated variable lower-limit 3 0.0 to upper-limit (Time proportional) -10.0 to upper-limit (Current output) Outputted when P - 3 ≠ 0 | OL - 3 |
| 5 | OH - 1 100.0 or 110.0 | Manipulated variable upper-limit 1 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Outputted when P - 1 ≠ 0 | OH - 1 | 17 | OH - 3 100.0 or 110.0 | Manipulated variable upper-limit 3 Lower-limit to 100.0 (Time proportional) Lower-limit to 110.0 (Current output) Displayed when P - 3 ≠ 0 | OH - 3 |
| 6 | RE - 1 50.0 | Manual reset 1 0.0 to 100.0% Displayed when P - 1 ≠ 0 and I ≠ 0 | RE - 1 | 18 | RE - 3 50.0 | Manual reset 3 0.0 to 100.0% Displayed when P - 3 ≠ 0 and I ≠ 0 | RE - 3 |
| 7 | P - 2 100.0 | Proportional band 2 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 2 | 19 | P - 4 100.0 | Proportional band 4 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 4 |
| 8 | I - 2 0 | Integral time 2 0 to 3600 sec. Displayed when P - 2 ≠ 0 | I - 2 | 20 | I - 4 0 | Integral time 4 0 to 3600 sec. Displayed when P - 4 ≠ 0 | I - 4 |
| 9 | D - 2 0 | Derivative time 2 0 to 1200 sec. Displayed when P - 2 ≠ 0 | D - 2 | 21 | D - 4 0 | Derivative time 4 0 to 1200 sec. Displayed when P - 4 ≠ 0 | D - 4 |
| 10 | OL - 2 0.0 or -10.0 | Manipulated variable lower-limit 2 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 2 ≠ 0 | OL - 2 | 22 | OL - 4 0.0 or -10.0 | Manipulated variable lower-limit 4 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 4 ≠ 0 | OL - 4 |
| 11 | OH - 2 100.0 or 110.0 | Manipulated variable upper-limit 2 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 2 ≠ 0 | OH - 2 | 23 | OH - 4 100.0 or 110.0 | Manipulated variable upper-limit 4 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 4 ≠ 0 | OH - 4 |
| 12 | RE - 2 50.0 | Manual reset 2 0.0 to 100.0% Displayed when P - 2 ≠ 0 and I ≠ 0 | RE - 2 | 24 | RE - 4 50.0 | Manual reset 4 0.0 to 100.0% Displayed when P - 4 ≠ 0 and I ≠ 0 | RE - 4 |

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|-----|---|---|--------------------|-----|---|---|--------------------|
| 25 | P - 5 100.0 | Proportional band 5 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 5 | 37 | P - 7 100.0 | Proportional band 7 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 7 |
| 26 | I - 5 0 | Integral time 5 0 to 3600 sec. Displayed when P - 5 ≠ 0 | I - 5 | 38 | I - 7 0 | Integral time 7 0 to 3600 sec. Displayed when P - 7 ≠ 0 | I - 7 |
| 27 | d - 5 0 | Derivative time 5 0 to 1200 sec. Displayed when P - 5 ≠ 0 | d - 5 | 39 | d - 7 0 | Derivative time 7 0 to 1200 sec. Displayed when P - 7 ≠ 0 | d - 7 |
| 28 | oL - 5 0.0 or -10.0 | Manipulated variable lower-limit 5 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 5 ≠ 0 | oL - 5 | 40 | oL - 7 0.0 or -10.0 | Manipulated variable lower-limit 7 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 7 ≠ 0 | oL - 7 |
| 29 | oH - 5 100.0 or 110.0 | Manipulated variable upper-limit 5 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 5 ≠ 0 | oH - 5 | 41 | oH - 7 100.0 or 110.0 | Manipulated variable lower-limit 7 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 7 ≠ 0 | oH - 7 |
| 30 | rE - 5 50.0 | Manual reset 5 0.0 to 100.0% Displayed when P - 5 ≠ 0 and I ≠ 0 | rE - 5 | 42 | rE - 7 50.0 | Manual reset 7 0.0 to 100.0% Displayed when P - 7 ≠ 0 and I ≠ 0 | rE - 7 |
| 31 | P - 6 100.0 | Proportional band 6 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 6 | 43 | P - 8 100.0 | Proportional band 8 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | P - 8 |
| 32 | I - 6 0 | Integral time 6 0 to 3600 sec. Displayed when P - 6 ≠ 0 | I - 6 | 44 | I - 8 0 | Integral time 8 0 to 3600 sec. Displayed when P - 8 ≠ 0 | I - 8 |
| 33 | d - 6 0 | Derivative time 6 0 to 1200 sec. Displayed when P - 6 ≠ 0 | d - 6 | 45 | d - 8 0 | Derivative time 8 0 to 1200 sec. Displayed when P - 8 ≠ 0 | d - 8 |
| 34 | oL - 6 0.0 or -10.0 | Manipulated variable lower-limit 6 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Outputted when P - 6 ≠ 0 | oL - 6 | 46 | oL - 8 0.0 or -10.0 | Manipulated variable lower-limit 8 0.0 to upper-limit % (Time proportional) -10.0 to upper-limit % (Current output) Displayed when P - 8 ≠ 0 | oL - 8 |
| 35 | oH - 6 100.0 or 110.0 | Manipulated variable upper-limit 6 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 6 ≠ 0 | oH - 6 | 47 | oH - 8 100.0 or 110.0 | Manipulated variable upper-limit 8 Lower-limit to 100.0% (Time proportional) Lower-limit to 110.0% (Current output) Displayed when P - 8 ≠ 0 | oH - 8 |
| 36 | rE - 6 50.0 | Manual reset 6 0.0 to 100.0% Displayed when P - 6 ≠ 0 and I ≠ 0 | rE - 6 | 48 | rE - 8 50.0 | Manual reset 8 0.0 to 100.0% Displayed when P - 8 ≠ 0 and I ≠ 0 | rE - 8 |

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| 49 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">P - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">1 0 0 . 0</div> | Proportional band 9 0.0 to 999.9% (Time proportional) 0.1 to 999.9% (Current output) | <div style="border: 1px solid black; padding: 2px; display: inline-block;">P - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> | 52 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">0 L - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">0 . 0</div> or <div style="border: 1px solid black; padding: 2px; display: inline-block;">- 1 0 . 0</div> | Manipulated variable lower-limit 9 0.0 to lower-limit (Time proportional) -10.0 to upper-limit (Current output) Outputted when P-9 ≠ 0 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">0 L - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> |
| 50 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">I - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">0</div> | Integral time 9 0 to 3600 sec. Displayed when P-9 ≠ 0 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">I - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> | 53 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">0 H - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">1 0 0 . 0</div> or <div style="border: 1px solid black; padding: 2px; display: inline-block;">1 1 0 . 0</div> | Manipulated variable upper-limit 9 Lower-limit to 100.0 (Time proportional) Lower-limit to 110.0 (Current output) Displayed when P-9 ≠ 0 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">0 H - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> |
| 51 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">d - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">0</div> | Derivative time 9 0 to 1200 sec. Displayed when P-9 ≠ 0 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">d - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> | 54 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">r E - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">5 0 . 0</div> | Manual reset 9 0.0 to 100.0% Displayed when P-9 ≠ 0 and I ≠ 0 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">r E - 9</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div> |