

Mini-CTA Excel spreadsheet

Mini-CTA 54T30: Selecting and adjusting overheat. **9054S4011**

Org. 980528/TSV
Rev. 000607/TSV

CTA identification SF1 ch.1

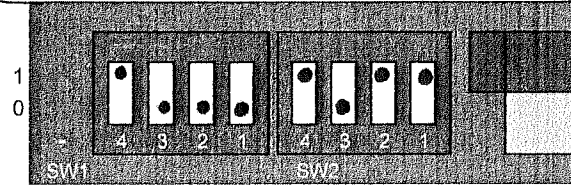
Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.76 Ω	0.0000000000
Sensor lead resist., R_L	0.50 Ω	0.0000000000
Support resistance, R_s	0.00 Ω	0.0000000000
Cable resistance, R_c	0.59 Ω	0.0000000000
Sensor TCR, α_{20}	0.45% /K	0.0000000000
Desired wire temp., T_w	245 $^{\circ}\text{C}$	0.0000000000
Temperature of flow	20 $^{\circ}\text{C}$	0.0000000000

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	11.59 Ω
Total resistance, R_T	12.68 Ω
Overheat ratio, a	1.01
Bridge ratio, M	1:20
Decade resistance, R_D	253.6 Ω

Set decade controls as follows:



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CTA identification SF2 ch.1

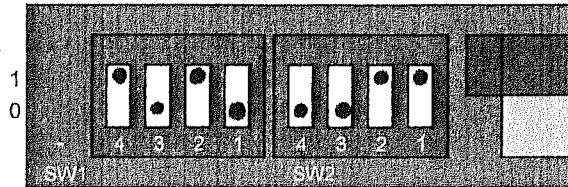
Insert probe specific parameters etc.

Sensor resistance, R_{20}	6.38 Ω	Temperature of sensor
Sensor lead resist., R_L	0.50 Ω	Temperature of lead
Support resistance, R_s	0.00 Ω	Temperature of support
Cable resistance, R_c	0.59 Ω	Temperature of cable
Sensor TCR, α_{20}	0.46% /K	
Desired wire temp., T_w	245 $^{\circ}\text{C}$	Wire temperature setpoint
Temperature of flow	20 $^{\circ}\text{C}$	Temperature during measurement

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	12.98 Ω
Total resistance, R_T	14.07 Ω
Overheat ratio, a	1.04
Bridge ratio, M	1:20
Decade resistance, R_D	281.5 Ω

Set decade controls as follows:



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CTA identification SF3 ch.1

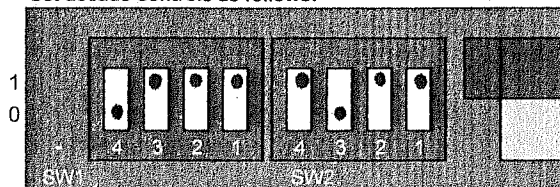
Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.32 Ω	20 °C resistance
Sensor lead resist., R_L	0.50 Ω	20 °C lead resistance
Support resistance, R_s	0.00 Ω	20 °C support resistance
Cable resistance, R_c	0.59 Ω	20 °C cable resistance
Sensor TCR, α_{20}	0.45% /K	Temperature coefficient
Desired wire temp., T_w	245 °C	Desired probe temperature
Temperature of flow	20 °C	Temperature of process liquid

Calculating wire operating resistance etc.

Over temperature, ΔT	225 °C
Operating resist., R_w	10.71 Ω
Total resistance, R_T	11.80 Ω
Overheat ratio, a	1.01
Bridge ratio, M	1:20
Decade resistance, R_D	235.9 Ω

Set decade controls as follows:



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CTA identification SF4 ch.1

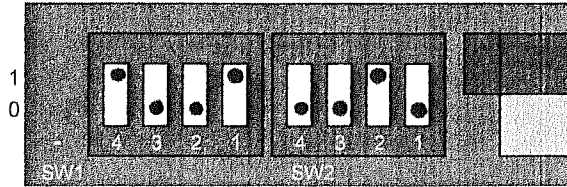
Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.84 Ω	Temperature of sensor
Sensor lead resist., R_L	0.50 Ω	Temperature of lead
Support resistance, R_s	0.00 Ω	Temperature of support
Cable resistance, R_c	0.59 Ω	Temperature of cable
Sensor TCR, α_{20}	0.46% /K	Temperature of sensor
Desired wire temp., T_w	245 $^{\circ}\text{C}$	Temperature of sensor
Temperature of flow	20 $^{\circ}\text{C}$	Temperature of flow

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	11.88 Ω
Total resistance, R_T	12.97 Ω
Overheat ratio, a	1.04
Bridge ratio, M	1:20
Decade resistance, R_D	259.5 Ω

Set decade controls as follows:



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CTA identification SF5 ch.1

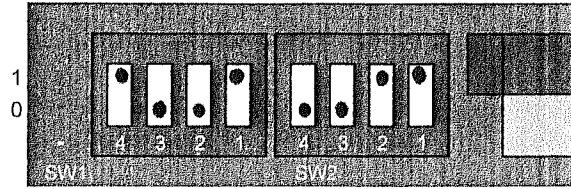
Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.99 Ω	Temperature of flow	20 $^{\circ}\text{C}$
Sensor lead resist., R_L	0.50 Ω	Desired wire temp., T_w	245 $^{\circ}\text{C}$
Support resistance, R_s	0.00 Ω	Over temperature, ΔT	225 $^{\circ}\text{C}$
Cable resistance, R_c	0.59 Ω	Operating resist., R_w	12.05 Ω
Sensor TCR, α_{20}	0.45% /K	Total resistance, R_T	13.14 Ω
Temperature of flow	20 $^{\circ}\text{C}$	Overheat ratio, a	1.01
		Bridge ratio, M	1:20
		Decade resistance, R_D	262.9 Ω

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	12.05 Ω
Total resistance, R_T	13.14 Ω
Overheat ratio, a	1.01
Bridge ratio, M	1:20
Decade resistance, R_D	262.9 Ω

Set decade controls as follows:



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CTA identification SF6 ch.1

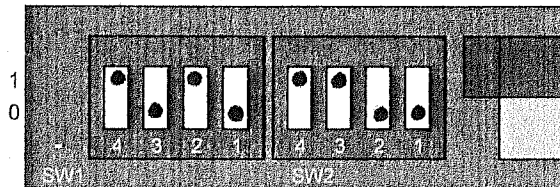
Insert probe specific parameters etc.

Sensor resistance, R_{20}	6.95 Ω	Temperature
Sensor lead resist., R_L	0.50 Ω	Temperature
Support resistance, R_s	0.00 Ω	Temperature
Cable resistance, R_c	0.59 Ω	Temperature
Sensor TCR, α_{20}	0.43% /K	
Desired wire temp., T_w	245 $^{\circ}\text{C}$	Temperature
Temperature of flow	20 $^{\circ}\text{C}$	Temperature

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	13.67 Ω
Total resistance, R_T	14.76 Ω
Overheat ratio, a	0.97
Bridge ratio, M	1:20
Decade resistance, R_D	295.3 Ω

Set decade controls as follows:



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CTA identification SF7 ch.1

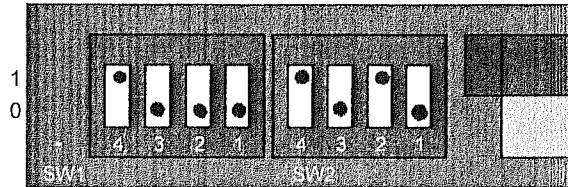
Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.91 Ω	20 °C resistance
Sensor lead resist., R_L	0.50 Ω	20 °C lead resistance
Support resistance, R_s	0.00 Ω	20 °C support resistance
Cable resistance, R_c	0.59 Ω	20 °C cable resistance
Sensor TCR, α_{20}	0.42% /K	Temperature coefficient
Desired wire temp., T_w	245 °C	Desired wire temperature
Temperature of flow	20 °C	Temperature of flow (not measured)

Calculating wire operating resistance etc.

Over temperature, ΔT	225 °C
Operating resist., R_w	11.49 Ω
Total resistance, R_T	12.58 Ω
Overheat ratio, a	0.95
Bridge ratio, M	1:20
Decade resistance, R_D	251.7 Ω

Set decade controls as follows:



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CTA identification SF8 ch.1

Insert probe specific parameters etc.

Sensor resistance, R_{20}	5.49 Ω	Temperature
Sensor lead resist., R_L	0.50 Ω	Temperature
Support resistance, R_s	0.00 Ω	Temperature
Cable resistance, R_c	0.59 Ω	Temperature
Sensor TCR, α_{20}	0.43% /K	
Desired wire temp., T_w	245 $^{\circ}\text{C}$	Wire mean value
Temperature of flow	20 $^{\circ}\text{C}$	Temperature during measurement

Calculating wire operating resistance etc.

Over temperature, ΔT	225 $^{\circ}\text{C}$
Operating resist., R_w	10.80 Ω
Total resistance, R_T	11.89 Ω
Overheat ratio, a	0.97
Bridge ratio, M	1:20
Decade resistance, R_D	237.8 Ω

Set decade controls as follows:

