

## ConST 31XA 串口指令集 V1.0

I	读/写	命令	C0	C1	C2	C3	返回 (A:F:命令:...)	描述
测量 & 输出								
2	R	MITEM	-	-	-	-	[Name]:[Params...]	读取当前测量项目的名称 1、RTD([RTD]:[Sensor Type]:[Wire(2W,3W,4W)]:[Temperature Unit(C,F,K)]) 2、TC([TC]:[Sensor Type]:[CJC Mode(INT,EXT)]:[CJC Value]:[Temperature Unit(C,F,K)]) 3、PRESSURE([PRESSURE]:[Pressure Unit]) 4、HART([HART]) 5、Measure Pulse([PULSE]:[Edge(0-DOWN,1-UP)]) 6、Electric Measures([Measurement Name]) (a) Electric Measures List: "SW", "HZ", "MA", "75MV", "30V", "2WR4H", "3WR4H", "4WR4H", "2WR4K", "3WR4K", "4WR4K" (b) RTD Sensor Type List: "Pt100(385)", "Pt100(391)", "Pt100(392)", "Pt1000(385)", "Pt500(385)", "Pt10(385)", "Cu100(428)", Cu50(428)", "Cu10(427)", "Ni120(672)", "Ni100(618)", "Custom..." (c) TC Sensor Type List: "S", "R", "B", "K", "N", "E", "J", "T", "C", "D", "G", "L", "U"
3	R	SITEM	-	-	-	-	[Name]:[Params...]	读取当前输出项目 1、RTD([RTD]:[Sensor type]:[Temperature Unit(C,F,K)]) 2、TC([TC]:[Sensor type]:[CJC Mode(INT,EXT)]:[CJC Value]:[Temperature Unit(C,F,K)]) 3、PRESSURE([PRESSURE]:[Pressure Unit]) 4、Source Pulse([PULSE]:[Edge(0-DOWN,1-UP)]:[Amplitude]:[Freq]) 5、Source Hz([HZ]:[Amplitude]) 6、Electric Sources([Source Name]) (a) Electric Sources List: "12V", "75MV", "24VMA", "MA", "R4H", "R4K" (b) RTD Sensor Type List: "Pt100(385)", "Pt100(391)", "Pt100(392)", "Pt1000(385)", "Pt500(385)", "Pt10(385)", "Cu100(428)", Cu50(428)", "Cu10(427)", "Ni120(672)", "Ni100(618)", "Custom..." (c) TC Sensor Type List: "S", "R", "B", "K", "N", "E", "J", "T", "C", "D", "G", "L", "U"

4	R	MVAL	-	-	-	-	[Name]:[Value]:[Unit]	<p>读取当前测量值</p> <p>1、RTD([RTD]:[Temperature Value]:[Temperature Unit(C,F,K)]:[Resistance Value]:[OHM])</p> <p>2、TC([TC]:[Temperature Value]:[Temperature Unit(C,F,K)]:[MilliVolts Value]:[MV]:[CJC Value])</p> <p>3、PRESSURE([PRESSURE]:[Pressure Value]:[Pressure Unit])</p> <p>4、HART([HART]:[PV]:[PV Unit]:[PVAO]:[Percentage]:[CA])</p> <p>5、Electric Measures([Measurement Name]:[Measure Value]:[Measure Unit])</p> <p>Electric Measures List:</p> <p>"SW" "PULSE" "HZ" "MA" "75MV" "30V" "2WR4H" "3WR4H" "4WR4H" "2WR4K" "3WR4K"</p>
5	R	SVAL	-	-	-	-	[Name]:[Value]:[Unit]	<p>读取当前输出值</p> <p>1、RTD([RTD]:[Temperature Value]:[Temperature Unit(C,K,F)]:[Resistance Value]:[OHM])</p> <p>2、TC([TC]:[Temperature Value]:[Temperature Unit(C,K,F)]:[MilliVolts Value]:[MV]:[CJC Value])</p> <p>3、PRESSURE([PRESSURE]:[Pressure Value]:[Pressure Unit])</p> <p>4、Electric Source([Source Name]:[Source Value]:[Source Unit])</p> <p>Electric Source List:</p> <p>"PULSE" "HZ" "12V" "75MV" "24VMA" "MA" "R4H" "R4K"</p>
6	W	SVAL	CO	-	-	-	:OK	<p>设定输出值(CO:输出值),在当前单位下.</p> <p>Address:W:SVAL:[Source Value]</p>
7	W	MUNIT	CO	-	-	-	:OK	<p>设定测量项目的单位,只有RTD, TC, PRESSURE项目时有效;</p> <p>1、RTD,TC([Temperature Unit](012,CKF))</p> <p>2、PRESSURE([Pressure Unit(0-10,"Pa", "kPa", "MPa", "psi", "bar", "mbar", "inHg", "mmHg", "inH2O", "mmH2O", "kgf/cm2")])</p> <p>由于显示位数的原因,部分压力单位可能无法支持;</p>
8	W	SUNIT	CO	-	-	-	:OK	<p>设定输出项目的单位,只有RTD, TC, PRESSURE项目时有效;</p> <p>1、RTD,TC([Temperature Unit](012,CKF))</p> <p>2、PRESSURE([Pressure Unit(0-10,"Pa", "kPa", "MPa", "psi", "bar", "mbar", "inHg", "mmHg", "inH2O", "mmH2O", "kgf/cm2")])</p> <p>由于显示位数的原因,部分压力单位可能无法支持;</p>
9	W	MZERO	-	-	-	-	:OK	<p>测量项目清零(无参数),支持清零的测量项目如下表:</p> <p>"75MV", "12V", "PULSE", "400ohm", "4K ohm", "mA", "Pressure"</p>
10	W	SRESET	-	-	-	-	:OK	<p>输出项目复位(无参数),支持复位的输出项目如下表:</p> <p>Address:W:SRESET</p> <p>"75MV", "12V", "HZ", "400ohm", "4K ohm", "mA"</p>
11	W	MVOLT	-	-	-	-	:OK	<p>设定电压测量(30V)</p> <p>Address:W:MMILLIVOLT</p>
12	W	MMILLIVOLT	-	-	-	-	OK	<p>测定毫伏测量(75mV)</p> <p>Address:W:MFREQ</p>
13	W	MFREQ	-	-	-	-	:OK	<p>设定频率测量</p> <p>Address:W:MPULSE</p>

14	W	MPULSE	C0	-	-	-	:OK	设定脉冲测量 Address:W:MPULSE:[Edge(0-DOWN,1-UP)](Optional,Default 0)]
15	W	MOHM	C0	C1	-	-	:OK	设定电阻测量 Address:W:MOHM:[Range(0-400ohm,1-4kohm)]:[Wire(2,3,4)]
16	W	MSWITCH	-	-	-	-	:OK	设定通断测量 Address:W:MSWITCH
17	W	MCUR	-	-	-	-	:OK	设定电流测量 Address:W:MCUR
18	W	MTC	C0	C1	C2	C3	:OK	设定热偶测量 Address:W:MTC:[Sensor Type(0-12)]:[Temperature Unit(012,CKF)]:[CJC Mode(0-INTERNAL,1-EXTERNAL)]:[CJC Value] TC Sensor Type List: "S", "R", "B", "K", "N", "E", "J", "T", "C", "D", "G", "L", "U"
19	W	MRTD	C0	C1	C2	-	:OK	设定热阻测量 Address:W:MRTD:[Sensor Type(0-10)]:[Wire(2,3,4)]:[Temperature Unit(012,CKF)] RTD Sensor Type List: "Pt100(385)", "Pt100(391)", "Pt100(392)", "Pt1000(385)", "Pt500(385)", "Pt10(385)", "Cu100(428)", "Cu50(428)", "Cu10(427)", "Ni120(672)", "Ni100(618)"
20	W	MPRESSURE	C0	-	-	-	:OK	设定压力测量 Address:W:MPRESSURE:[Pressure Unit(Optional)] Pressure Unit List: "Pa", "kPa", "MPa", "psi", "bar", "mbar", "inHg", "mmHg", "inH2O", "mmH2O", "kgf/cm2"
21	W	SVOLT	C0	-	-	-	:OK	设定电压输出(12V) Address:W:SVOLT:[Default Output Value(Optional)]
22	W	SMILLIVOLT	C0	-	-	-	:OK	设定毫伏电压输出(75mV) Address:W:SMILLIVOLT:[Default Output Value(Optional)]
23	W	SFREQ	C0	C1	-	-	:OK	设定频率输出 Address:W:SFREQ:[Amplitude(Optional)]:[Default Output Value(Optional)]
24	W	SPULSE	C0	C1	C2	C3	:OK	设定脉冲输出 Address:W:SPULSE:[Edge(0-DOWN,1-UP)]:[Amplitude]:[Frequency]:[Default Output Value(Optional)]
25	W	SOHM	C0	C1	-	-	:OK	设定电阻输出 Address:W:SOHM:[Range(0-400ohm,1-4k ohm)]:[Default Output Value(Optional)]
26	W	STC	C0	C1	C2	C3	:OK	设定热偶输出 Address:W:STC:[Sensor Type(0-12)]:[Temperature Unit(012,CKF)]:[CJC Mode(0-INT,1-EXIT)]:[CJC Value] TC Sensor Type List: "S", "R", "B", "K", "N", "E", "J", "T", "C", "D", "G", "L", "U"

27	W	SRTD	C0	C1	C2	-	:OK	设定热阻输出 Address:W:SRTD:[Sensor Type]:[Temperature Unit(012,CKF)]:[Default Output Value(Optional)] RTD Sensor Type List: "Pt100(385)", "Pt100(391)", "Pt100(392)", "Pt1000(385)", "Pt500(385)", "Pt10(385)", "Cu100(428)", Cu50(428)", "Cu10(427)", "Ni120(672)", "Ni100(618)"
28	W	SCUR	C0	C1	-	-	:OK	设定电流输出 Address:W:SCUR:[0-INT,1-EXT]:[Default Output Value(Optional)]
29	W	SPRESSURE	C0	-	-	-	:OK	设定压力输出 Address:W:SPRESSURE:[Pressure Unit(Optional)] Pressure Unit List: "Pa", "kPa", "MPa", "psi", "bar", "mbar", "inHg", "mmHg", "inH2O", "mmH2O", "kgf/cm2"
30	R	SPULSTATUS	-	-	-	-		读取当前脉冲输出的状态 Address:R:SPULSTATUS 0-未开始或停止、1-正在输出。
31	W	SPULSESTART	-	-	-	-	OK	开始脉冲输出(如果处于脉冲输出档且输出值不为零时有效) Address:W:SPULSESTART
32	W	SPULSESTOP	-	-	-	-	OK	停止脉冲输出(如果处于脉冲输出状态时有效) Address:W:SPULSESTOP
开关通断								
33	R	MSWDATACNT	-	-	-	-	Count	获取通断触发数据的数量 Address:R:MSWDATACNT
34	R	MSWDATA	C0	-	-	-	Params....	读通断触发数据,指定序号(序号从0开始) Address:R:MSWDATA:[Index] Address:F:MSWDATA:[0-CLOSE,1-OPEN]:[Output Value]:[Output Unit]
35	R	MSWDATALAST	-	-	-	-	Params....	读通断触发数据,最后一次的数据 Address:R:MSWDATALAST Address:F:MSWDATALAST:[0-CLOSE,1-OPEN]:[Output Value]:[Output Unit]
36	W	CLSSWDATA	-	-	-	-	OK	清除全部通断记录 Address:W:CLSSWDATA
外接压力模块								
37	R	PMRMD	-	-	-	-	[Value]:[Unit]	读取压力模块的当前测量值 Address:R:PMRMD
38	R	PMRAN	-	-	-	-	[LRV]:[URV]:[Unit]	读取压力模块的量程 Address:R:PMRAN
39	R	PMONLINE	-	-	-	-	TURE/FALSE	读取压力模块是否在线 Address:R:PMONLINE

仪表信息

39	R	OMODEL	-	-	-	-	Model	读取仪表的型号信息 Address:R:OMODEL
40	R	OMFGDATE	-	-	-	-	[yyyy]:[mm]:[dd]	读取仪表的生产日期 Address:R:OMFGDATE
<b>快照</b>								
41	R	SNAPCOUNT	-	-	-	-	Count	获取快照文件的数量 Address:R:SNAPCOUNT
42	R	SNAPSHOT	-	-	-	-	Params....	获取指定序号的快照文件(序号从0开始) Address:R:SNAPSHOT:[Index(0,1,2...)] Address:F:SNAPSHOT:[Snapshot Tag]:[Time(yyyy-MM-dd hh/mm/ss)]:[DC24V-OFF/DC24V-ON]:[Measure Type]:[Measure Value]:[Measure Unit]:[Source Type]:[Source Value]:[Source Unit]
43	W	SNAPSHOT	CO	-	-	-	OK	捕获快照文件 Address:W:ADDSNAPSHOT:[Snapshot Name(Optional)]
44	W	DELETESNAP	-	-	-	-	OK	删除指定序号序号的快照文件(序号从0开始) Address:W:DELETESNAP:[Index]
45	W	OERASESNAP	-	-	-	-	OK	删除全部快照文件 Address:W:OERASESNAP
<b>系统设置</b>								
46	R	DC24V	-	-	-	-	OFF/ON	读取DC24V的状态 Address:R:DC24V
47	W	DC24V	-	-	-	-	OK	设置DC24V的状态 Address:W:DC24V:[OFF/ON]
48	R	SYSTEMDATE	-	-	-	-	[yyyy]:[MM]:[dd]	读取仪表的系统日期 Address:R:SYSTEMDATE
49	W	SYSTEMDATE	-	-	-	-	OK	设置仪表的系统日期 Address:W:SYSTEMDATE:[yyyy]:[MM]:[dd]
50	R	ODATEFORMAT	-	-	-	-	0/1/2	读取仪表的日期格式 Address:R:ODATEFORMAT System Date Format List: 012("yyyy-mm-dd", "mm-dd-yyyy", "dd-mm-yyyy")
51	W	ODATEFORMAT	-	-	-	-	OK	设置仪表的日期格式 Address:W:ODATEFORMAT:[0/1/2] System Date Format List: 012("yyyy-mm-dd", "mm-dd-yyyy", "dd-mm-yyyy")
52	R	SYSTEMTIME	-	-	-	-	hh:mm:ss	读取仪表的系统时间 Address:R:SYSTEMTIME
53	W	SYSTEMTIME	-	-	-	-	OK	设置仪表的系统时间 Address:W:SYSTEMTIME:[hh]:[mm]:[ss]

54	R	BACKLIGHT	-	-	-	-	[0/10/20...100]:[%]	读取仪表的背光亮度 Address:R:BACKLIGHT Backlight Levels: (0,10...,100)%
55	W	BACKLIGHT	-	-	-	-	OK	设置仪表的背光亮度 Address:W:BACKLIGHT:[Value]: Backlight Levels: (0,10...,100)%
56	R	BACKLIGHTOFF	-	-	-	-	0/1/2...	读取仪表的自动关背光设置方式 Address:R:BACKLIGHTOFF Automatic Backlight Off List: "Never", "5 Minutes", "10 Minutes", "30 Minutes", "1 Hour"
57	W	BACKLIGHTOFF	-	-	-	-	OK	设置仪表的自动关背光设置方式 Address:W:BACKLIGHTOFF:[0/1/2...] Automatic Backlight Off List: "Never", "5 Minutes", "10 Minutes", "30 Minutes", "1 Hour"
58	R	OPOWEROFF	-	-	-	-	0/1/2...	读取仪表自动关机的设置方式 Address:R:OPOWEROFF Automatic Poweroff Items List: "Never", "30 Minutes", "1 hour", "2 hours"
59	W	OPOWEROFF	-	-	-	-	OK	设置仪表的自动关机的设置方式 Address:W:OPOWEROFF:[0/1/2...] Automatic Poweroff Items List: "Never", "30 Minutes", "1 hour", "2 hours"
60	R	OVERRANGEBEEP	-	-	-	-	OFF/ON	读取仪表的超量程报警状态 Address:R:OVERRANGEBEEP
61	W	OVERRANGEBEEP	-	-	-	-	OK	设置仪表的超量程报警状态 Address:W:OVERRANGEBEEP:[OFF/ON]
62	R	OLANG	-	-	-	-	0/1/2...	读取仪表的显示语言 Address:R:OLANG 返回: 语言列表序号:语言内部名称(英文表示):语言Id
63	W	OLANG	-	-	-	-	OK	设置仪表的显示语言(序号从0开始) Address:W:OLANG:[0/1/2...] Language List: "简体中文(Simplified Chinese)", "English", "Italiano(Italian)"
系统信息								
64	W	OBEEP	C0	C1	C2	-	OK	仪表通讯测试, 无实际操作, 返回OK, BEEP Address:W:OBEEP:[freq(Optional)]:[multiples(Optional)]:[count(Optional)]
65	R	VERSION	-	-	-	-	[Version][Modification Time]	读取仪表的软件版本信息 Address:R:VERSION:

66	R	BATV	-	-	-	-	[V1]:[V2]	读取仪表的电池电压 Address:R:BATV
67	R	OKEYVALUE	-	-	-	-	[KEY NAME]:[PRESS/DOWN]	读取仪表的按键触发值及按键状态类型 Address:R:OKEYVALUE
68	W	OCLSKEY	-	-	-	-	OK	清除按键状态 Address:W:OCLSKEY
69	W	OKEYVALUE	-	-	-	-	OK	发送模拟按键 Address:W:OKEYVALUE:[KEY]
70	W	OSHUTDOWN	-	-	-	-	-	关闭主机 Address:W:OSHUTDOWN
71	W	ORESTART	-	-	-	-	OK	重启主机 Address:W:ORESTART
72	W	OLOCKKEY	CO	-	-	-	OK	锁键盘或解锁键盘. Address:W:OLOCKKEY:[CO:TRUE,锁; FALSE,解锁.不区分大小写]
73	W	INITUPGRADE	-	-	-	-	OK	进入固件升级状态 Address:W:INITUPGRADE
74	W	RESFACTORY	CO	-	-	-	OK	恢复出厂设置(密码), 将系统设置参数恢复到初始值, 并清除掉所有任务和快照文件(校准数据不删除), DPC V02.02以后开始支持 Address:W:RESFACTORY:[密码(用户密码 或 厂家密码)]

自定义热阻库

74	R	CUSTRDCNT	-	-	-	-	[Count]	读取自定义铂电阻的数量 Address:R:PRTDCNT
75	R	CUSTRDPARAM	CO	-	-	-	[Param]...	读取指定序号的自定义热电阻的参数(序号从0开始) Address:R:CUSTRDPARAM:[Index] Address:F:CUSTRDPARAM:[RTD Alias]:[RTD Type(1或2)]:[E LRV]:[E URV]:[Temperature LRV]:[Temperature URV]:[R0]:[A]:[B]:[C]:[A4]:[B4] RTD Type 为1时, 表示自定义标准铂电阻, 如果只使用正温部分, A4、B4可忽略; 如果只使用负温部分, A、B、C可忽略; RTD Type为2时, 表示自定义工业热电阻, A4、B4可忽略;
76	W	DELCUSTRTD	CO	-	-	-	OK	删除指定序号的自定义铂电阻 Address:W:DELPRTD:[Index]
77	T	NEWCUSTRTD	-	-	-	-	[Param....]	创建自定义铂电阻 Address:T:NEWPRTD:[RTD Alias]:[RTD Type(1或2)]:[Temperature LRV]:[Temperature URV]:[R0]:[A]:[B]:[C]:[A4]:[B4] RTD Type 为1时, 表示自定义标准铂电阻, 如果只使用正温部分, A4、B4可设置为0; 如果只使用负温部分, A、B、C可设置为0; RTD Type为2时, 表示自定义工业热电阻, A4、B4不需要, 如果只使用正温度部分, C为零;

错误代码列表

1	1001	指令格式非法
2	1002	地址错误
3	1003	属性错误
4	1004	指令超长
5	1005	参数超长
6	1006	未在指令集中找到匹配指令
7	1011	当前状态不支持此指令
8	1012	参数格式非法
9	1013	参数超范围
10	1014	密码错误
11	1015	不支持此压力单位
12	1016	文件名已存在(指定的文件名与现有文件重名)
13	1021	已进入串口命令校准中.
14	1022	校准过程正在执行中
15	1023	校准过程没有完成



**使用事项:**

1. 假设仪表地址为1（见仪表的“系统设置”-》“串口设置”中的地址），默认串口通讯波特率为9600, 8, 1, N。
2. 如使用串口工具通讯时，一定要勾选“发送新行”；如使用程序代码发送，一定要在指令后添加“\0”或“\n”字符；

发送的格式示例:

- (1) 读取版本: 001:R:OVER
- (2) 读取当前测量值: 001:R:MVAL