Delta VFD-CP2000

HMI Factory Setting:

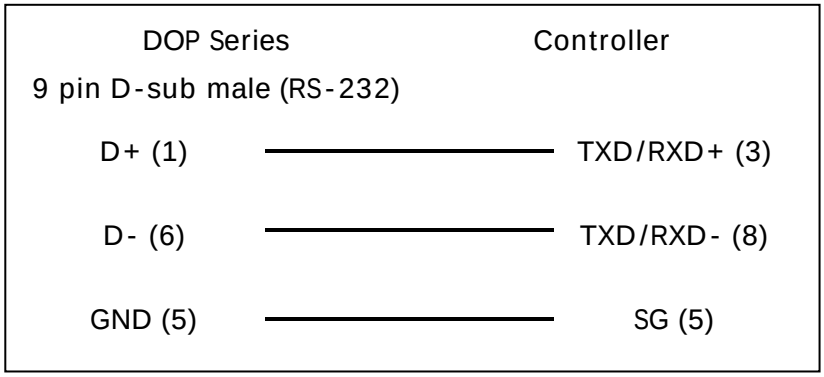
Baud rate: 38400, 8, None, 1

Controller Station Number: 10

Control Area / Status Area: AV0:85/AV20:85

Connection

a. RS-485 (DOP-B,W Series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n) Property No.(p)			
Analog Value	**AV**n:p	**AV**0:0 – **AV**68:255	Word	2, 3, 4
Binary Value	**BV**n:p	**BV**0:0– **BV**31:255	Word	2, 3, 4
Device Value	**DEVICE**n:p	**DEVICE**0:0 – **DEVICE**255:255	Word	2, 3, 4

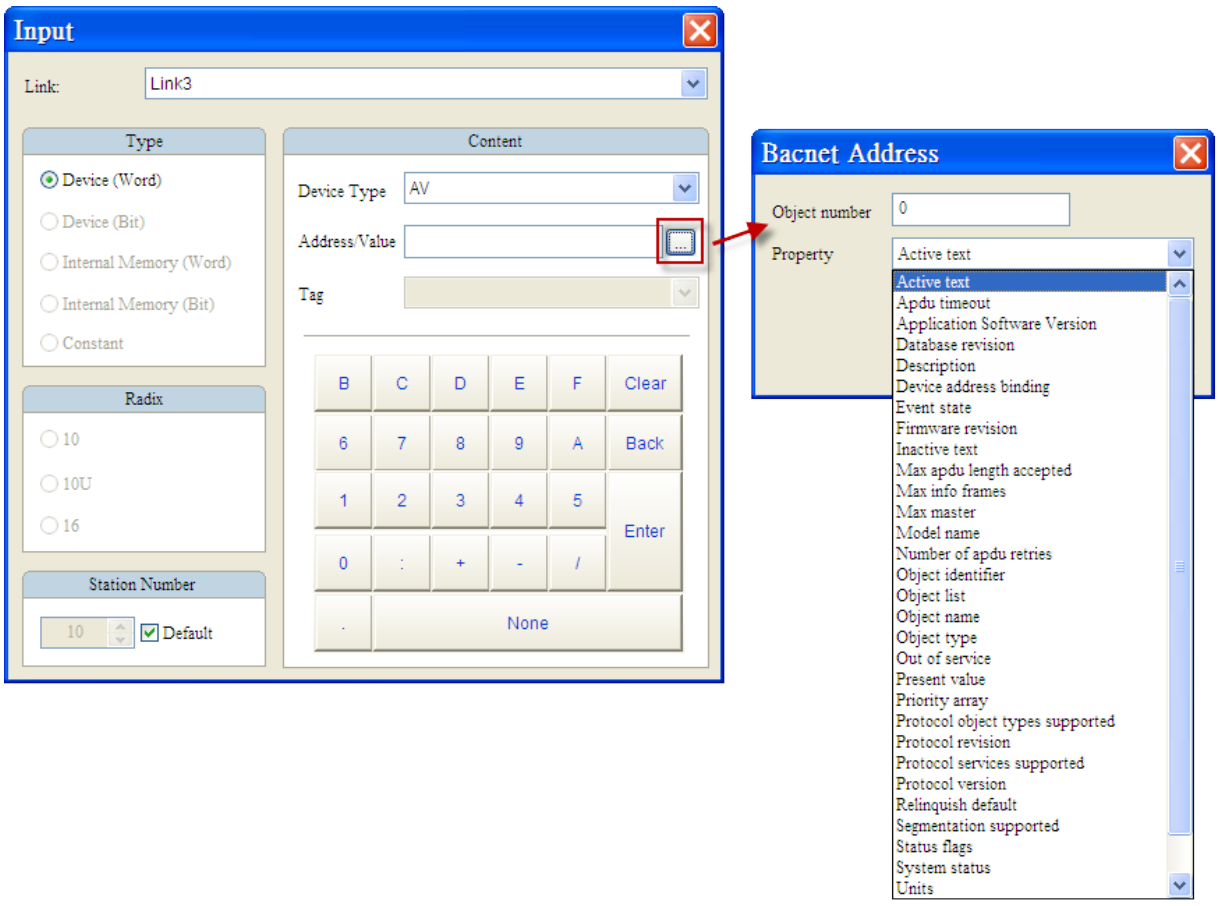
b. Contacts

Type	Format	Read/Write Range	Note
	Word No.(n) ; Property No.(p) ; Bit No.(b)		
Analog Value	**AV**n:p/b	**AV**0:0/0 – **AV**68:255/15	2, 3, 4
Binary Value	**BV**n:p	**BV**0:0/0– **BV**31:255/15	2, 3, 4
Device Value	**DEVICE**n:p/b	**DEVICE**0:0/0 – **DEVICE**255:255/15	2, 3, 4

NOTE

1) The station number of HMI must be between 0 to 127.

2) When input address, user can select by Property name instead of manually input Property ID. Properties of Object, please reference Note 3.



3) Property Table of Object

Object Name	Property Name	Property ID	Data type
AV	Description	28	Character String
AV	Device address binding	30	Signed Integer
AV	Event state	36	Enumerated
AV	Object identifier	75	BACnetObjectIdentifier
AV	Object name	77	Character String
AV	Object type	79	Enumerated
AV	Out of service	81	Boolean
AV	Present value	85	Real
AV	Priority array	87	Bit String
AV	Relinquish default	104	Enumerated
AV	Status flags	111	Bit String
AV	Units	117	Enumerated
BV	Active text	4	Character String

BV	Description	28	Character String
BV	Event state	36	Enumerated
BV	Inactive text	46	Character String
BV	Object identifier	75	BACnetObjectIdentifier
BV	Object name	77	Character String
BV	Object type	79	Enumerated
BV	Out of service	81	Boolean
BV	Present value	85	Enumerated
BV	Priority array	87	Null
BV	Relinquish default	104	Enumerated
BV	Status flags	111	Bit String
DEVICE	APDU timeout	11	Unsigned Integer
DEVICE	Application software version	12	Character String
DEVICE	Description	28	Character String
DEVICE	Device address binding	30	Signed Integer
DEVICE	Firmware revision	44	Character String
DEVICE	Max APDU length accepted	62	Unsigned Integer
DEVICE	Max info frames	63	Unsigned Integer
DEVICE	Max master	64	Unsigned Integer
DEVICE	Model name	70	Character String
DEVICE	Number of APDU retries	73	Unsigned Integer
DEVICE	Object identifier	75	BACnetObjectIdentifier
DEVICE	Object name	77	Character String
DEVICE	Object type	79	Enumerated
DEVICE	Protocol object types supported	96	Bit String
DEVICE	Protocol services supported	97	Bit String
DEVICE	Protocol version	98	Unsigned Integer
DEVICE	Segmentation supported	107	Enumerated
DEVICE	System status	112	Enumerated
DEVICE	Vendor identifier	120	Unsigned Integer
DEVICE	Vendor name	121	Character String
DEVICE	Protocol revision	139	Unsigned Integer
DEVICE	Database revision	155	Unsigned Integer

***a. Property “Present value” of Object AV0~AV26 and BV0~BV15 are writeable, AV27~AV68 and BV16~BV31 are read only.**

***b. Property “Object identifier” and “Object name” of DEVICE are writeable.**

4) Object Table of CP2000

Analog Value Object

In Core, we have AV0~AV26 supporting readable and writable Present Value property.

Object Number	R/W	Object Name	Object Description	Unit
AV0	RW	Reserved	Reserved	UNITS_NO_UNITS
AV1	RW	FreqRefValue	Frequency Reference Value	UNITS_HERTZ
AV2	RW	Reserved	Reserved	UNITS_NO_UNITS
AV3	RW	Reserved	Reserved	UNITS_NO_UNITS
AV4	RW	Reserved	Reserved	UNITS_NO_UNITS
AV5	RW	Reserved	Reserved	UNITS_NO_UNITS
AV6	RW	Reserved	Reserved	UNITS_NO_UNITS
AV7	RW	Reserved	Reserved	UNITS_NO_UNITS
AV8	RW	Reserved	Reserved	UNITS_NO_UNITS
AV9	RW	Reserved	Reserved	UNITS_NO_UNITS
AV10	RW	Reserved	Reserved	UNITS_NO_UNITS
AV11	RW	(P9-11 map set)	AV11 will modify data which is P9-11 mapping to	Depends
AV12	RW	(P9-12 map set)	AV12 will modify data which is P9-12 mapping to	Depends
AV13	RW	(P9-13 map set)	AV13 will modify data which is P9-13 mapping to	Depends
AV14	RW	(P9-14 map set)	AV14 will modify data which is P9-14 mapping to	Depends
AV15	RW	(P9-15 map set)	AV15 will modify data which is P9-15 mapping to	Depends
AV16	RW	(P9-16 map set)	AV16 will modify data which is P9-16 mapping to	Depends
AV17	RW	(P9-17 map set)	AV17 will modify data which is P9-17 mapping to	Depends
AV18	RW	(P9-18 map set)	AV18 will modify data which is P9-18 mapping to	Depends
AV19	RW	(P9-19 map set)	AV19 will modify data which is P9-19 mapping to	Depends
AV20	RW	(P9-20 map set)	AV20 will modify data which is P9-20 mapping to	Depends
AV21	RW	(P9-21 map set)	AV21 will modify data which is P9-21 mapping to	Depends
AV22	RW	(P9-22 map set)	AV22 will modify data which is P9-22 mapping to	Depends

AV23	RW	(P9-23 map set)	AV23 will modify data which is P9-23 mapping to	Depends
AV24	RW	(P9-24 map set)	AV24 will modify data which is P9-24 mapping to	Depends
AV25	RW	(P9-25 map set)	AV25 will modify data which is P9-25 mapping to	Depends
AV26	RW	(P9-26 map set)	AV26 will modify data which is P9-26 mapping to	Depends

Status (Read only) Analog Value Object

AV27~AV68 with read only Present value property.

Object Number	R/W	Object Name	Object Description	Unit
AV27	R	Reserved	Reserved	UNITS_NO_UNITS
AV28	R	Reserved	Reserved	UNITS_NO_UNITS
AV29	R	Reserved	Reserved	UNITS_NO_UNITS
AV30	R	Reserved	Reserved	UNITS_NO_UNITS
AV31	R	Output frequency	Display output frequency(Hz)	UNITS_HERTZ
AV32	R	Reserved	Reserved	UNITS_NO_UNITS
AV33	R	Reserved	Reserved	UNITS_NO_UNITS
AV34	R	Reserved	Reserved	UNITS_NO_UNITS
AV35	R	Output torque(%)	Display output torque(%)	UNITS_PERCENT
AV36	R	Reserved	Reserved	UNITS_NO_UNITS
AV37	R	Reserved	Reserved	UNITS_NO_UNITS
AV38	R	Reserved	Reserved	UNITS_NO_UNITS
AV39	R	Status word	Display status word,made from BV16~BV31	UNITS_NO_UNITS
AV40	R	Reserved	Reserved	UNITS_NO_UNITS
AV41	R	Driver type code	Driver type code	UNITS_NO_UNITS
AV42	R	Warn code	Warn code	UNITS_NO_UNITS
AV43	R	Error code	Error code	UNITS_NO_UNITS
AV44	R	Output current	Display output current(Amp)	UNITS_AMPERES
AV45	R	DC-bus voltage	Display DC-BUS voltage(Volt)	UNITS_VOLTS
AV46	R	Output Voltage	Display output voltage of U, V, W(Volt)	UNITS_VOLTS
AV47	R	Count Value	Display counter value of TRG terminal	UNITS_NO_UNITS
AV48	R	Power Angle	Display output power angle of U, V,	UNITS_POWER_FACT

			W	OR
AV49	R	Output Power	Display actual output power of U, V, W(kw)	UNITS_KILOWATTS
AV50	R	IGBT temperature	Display the IGBT temperature	UNITS_DEGREES_CELSIUS
AV51	R	Temperature of driver	Display the temperature of capacitance	UNITS_DEGREES_CELSIUS
AV52	R	Real carry frequency	Display real carrier frequency of the drive(KHz)	UNITS_KILOHERTZ
AV53	R	PID feedback value	Display PID feedback value(%)	UNITS_PERCENT
AV54	R	Overload rate	Display overload condition(%)	UNITS_PERCENT
AV55	R	Ground fail detect level	Display GND fail detect level(%)	UNITS_PERCENT
AV56	R	DC bus ripple	Display DCbus voltage ripples(Volt)	UNITS_VOLTS
AV57	R	Fan Speed	Fan speed of the drive(%)	UNITS_PERCENT
AV58	R	Output speed(rpm)	Output speed(rpm)	UNITS_REVOLUTIONS_PER_MINUTE
AV59	R	KW per Hour	KW per Hour	UNITS_KILOWATTS
AV60	R	Multi-speed switch	Real multi-speed switch	UNITS_NO_UNITS
AV61	R	AVI input value	0~10V corresponds to 0~100%	UNITS_PERCENT
AV62	R	ACI input value	4~20mA/0~10V corresponds to 0~100%	UNITS_PERCENT
AV63	R	AUI input value	-10V~10V corresponds to -100~100%	UNITS_PERCENT
AV64	R	Digital input status	Refer to P2-12	UNITS_NO_UNITS
AV65	R	Digital output status	Refer to P2-18	UNITS_NO_UNITS
AV66	R	CPU pin status of DI	Corresponding CPU pin status of digital input	UNITS_NO_UNITS
AV67	R	CPU pin status of DO	Corresponding CPU pin status of digital output	UNITS_NO_UNITS
AV68	R	PLC D1043 value	PLC D1043 value	UNITS_NO_UNITS

Writable Binary Value Object

In Core, we have BV0~BV15 supporting readable and writable Present Value property

Object Number	R/W	Object Name	Object Description

BV0	RW	ACTIVE CMD	(0)FreqCmd=0;(1)FreqCmd=FreqRefValue
BV1	RW	FWD/REV CMD	(0)Forward; (1)Reverse
BV2	RW	Reserved	Reserved
BV3	RW	HALT CMD	(0)None;(1)RampDown to 0Hz.
BV4	RW	LOCK CMD	(0)None;(1)OutputFreq stays at current freqency
BV5	RW	Reserved	Reserved
BV6	RW	QSTOP CMD	(0)None;(1)Force driver quick stop
BV7	RW	ServoPower CMD	(0)PowerOff(free run to stop);(1)PowerOn
BV8	RW	Reserved	Reserved
BV9	RW	Reserved	Reserved
BV10	RW	Reserved	Reserved
BV11	RW	Reserved	Reserved
BV12	RW	Reserved	Reserved
BV13	RW	Reserved	Reserved
BV14	RW	Reserved	Reserved
BV15	RW	RESET	RESET:(0)Do nothing;(1)Reset fault

Status (Read only) Binary Value Object

BV16~BV31 with read only Present Value property

Object Number	R/W	Object Name	Object Description
BV16	R	ARRIVE STATE	(0)Not yet;(1)Arrive (OutputFreq=FreqCmd)
BV17	R	FWD/REV STATE	(0)Forward;(1)Reverse
BV18	R	WARN STATE	(0)No Warn;(1)Occur Warn
BV19	R	ERROR STATE	(0)No Error;(1)Occur Error
BV20	R	Reserved	Reserved
BV21	R	Reserved	Reserved
BV22	R	QSTOP STATE	(0)No QSTOP;(1)Occur QSTOP
BV23	R	SerovPower STATE	(0)PowerOff(free run to stop);(1)PowerOn
BV24	R	Reserved	Reserved
BV25	R	Reserved	Reserved
BV26	R	Reserved	Reserved
BV27	R	Reserved	Reserved
BV28	R	Reserved	Reserved
BV29	R	Reserved	Reserved
BV30	R	Reserved	Reserved
BV31	R	Reserved	Reserved

Device Object

DEVICE10 is default value in device object, you can re-define it in CP2000.