IntelliTrol 1.7.0

11/04/2019

Modbus Commands

Command	Description
0x01	READ OUTPUT STATUS
0x02	READ INPUT STATUS
0x03	READ MULTIPLE REGISTERS
0x05	FORCE SINGLE BIT
0x06	WRITE SINGLE REGISTER
0x10	WRITE MULTIPLE REGISTERS
0x41	WRITE SINGLE VEHICLE
0x42	READ SINGLE VEHICLE
0x43	READ VIP LOG
0x44	WRITE PASSWORD
0x45	WRITE COMPANY ID
0x46	WRITE MULTIPLE VEHICLES
0x47	READ MULTIPLE VEHICLES
0x48	BACKUP FUNCTIONS
0x49	READ TRL LOG
0x4A	CRC MULTIPLE VEHICLES
0x4B	WRITE BYPASS KEYS
0x4C	READ BYPASS KEYS
0x4D	WRITE FEATURES PASSWORD
0x4E	READ EE BLOCK
0x4F	WRITE EE BLOCK
0x50	REPORT COMPARTMENT VOLUME
0x51	READ TIM SCULLY AREA
0x52	WRITE TIM SCULLY AREA
0x53	READ BUILDER INFO
0x54	WRITE BUILDER INFO
0x55	READ THIRD PARTY
0x56	WRITE THIRD PARTY
0x57	READ BUILDER AREA
0x58	WRITE BUILDER AREA
0x59	INSERT VEHICLE
0x5A	REMOVE VEHICLE
0x5B	READ NUM PROBES
0x5C	USE UPDATED ADC TABLE

0x5D	GET CURRENT ADC TABLE

Modbus Error codes

Value	Description
0x00	OK
0x01	EXC ILL FUNC
0x02	EXC ILL ADDR
0x03	EXC ILL DATA
0x04	EXC FAULT
0x05	EXC ACK
0x06	EXC BUSY
0x07	EXC NAK
0x08	EXC MEM PAR ERR
0x09	EXC TIM CMD ERR
0x0A	EXC TIM FAMILY ERR
0x0B	EXC TIM NOT VALID ERR
0x0C	EXC NUMBER COMPARTMENTS ERR
0x0D	SPI FAMILY ERR
0x0E	SPI WRITE ERR
0x0F	SPI READ ERR
0x10	EXC TIM MEM AREA ERR
0x11	WRITE TO SCRATCHPAD ERR
0x12	VERIFY SCRATCHPAD ERR
0x13	COPY SCRATCHPAD ERR
0x14	EXC TIM ENTRY NOT VALID ERR
0x15	READ SERIAL ERROR
0x16	MALLOC ERROR
0x17	I2C ERROR
0x18	READ CLOCK ERROR
0x19	READ ONLY VALUE
0x80	NO RESPONSE

Modbus Subcommands

0x05: FORCE SINGLE BIT		
Value	Description	Force bits
0x0000	Forced Shutdown	0000 / FF00
0x0002	Recover (clear Shutdown)	FF00
0x0003	Erase Truck ID list	FF00
0x0004	Erase Event Log	FF00
0x0006	System ("hardware") reset	FF00
0x0008	Force Overfill Bypass	0000
0x0009	Force Ground Bypass	0000 / FF00
0x000A	Enable Ground checking	0000 / FF00
0x000F	Enable Deadman Switch checking	0000
0x0012	Erase Bypass Key list	FF00
0x0013	Re-Format/Init all EEPROM	FF00
0x0015	Force VIP/Truck-ID Bypass	0000
0x0016	Enable VIP checking	0000

0x4E: Read special EEPROM block / 0x4F: Write special EEPROM block	
Value	Description
0x00	PARM
0x01	DSTAMP
0x02	DIA5
0x03	VOLT
0x04	SET1

0x53: READ BUILDER INFO / 0x54: WRITE BUILDER INFO		
Value	Description	Read / Write
0x01	CARRIER NAME	Read
0x02	CARRIER ADDRESS	Read
0x03	CONTRACT NUMBER	Read
0x04	OPPERATING SERVICE	Read
0x05	DRIVER ID	Read
0x06	ALLOWABLE VOL COMPARTMENT 1	Read
0x07	ALLOWABLE VOLUME COMPARTMENT 2	Read

0x08	ALLOWABLE VOLUME COMPARTMENT 3	Read
0x09	ALLOWABLE VOLUME COMPARTMENT 4	Read
0x0A	ALLOWABLE VOLUME COMPARTMENT 5	Read
0x0B	ALLOWABLE VOLUME COMPARTMENT 6	Read
0x0C	ALLOWABLE VOLUME COMPARTMENT 7	Read
0x0D	ALLOWABLE VOLUME COMPARTMENT 8	Read
0x0E	ALLOWABLE VOLUME COMPARTMENT 9	Read
0x0F	ALLOWABLE VOLUME COMPARTMENT 10	Read
0x10	ALLOWABLE VOLUME COMPARTMENT 11	Read
0x11	ALLOWABLE VOLUME COMPARTMENT 12	Read
0x12	ALLOWABLE VOLUME COMPARTMENT 13	Read
0x13	ALLOWABLE VOLUME COMPARTMENT 14	Read
0x14	ALLOWABLE VOLUME COMPARTMENT 15	Read
0x15	ALLOWABLE VOLUME COMPARTMENT 16	Read
0x16	VAP TIGHT CERTIFICATE TYPE	Read
0x17	VAP TIGHT CERTIFICATE DATE	Read
0x18	VAP TIGHT CERTIFICATE NUMBER	Read
0x19	SAFE PASS CERTIFICATE TYPE	Read
0x1A	SAFE PASS CERTIFICATE DATE	Read
0x1B	SAFE PASS CERTIFICATE NUMBER	Read
0x1C	CERTIFICATE 3 TYPE	Read
0x1D	CERTIFICATE 3 DATE	Read
0x1E	CERTIFICATE 3 NUMBER	Read
0x1F	CERTIFICATE 4 TYPE	Read
0x20	CERTIFICATE 4 DATE	Read
0x21	CERTIFICATE 4 NUMBER	Read
0x22	CERTIFICATE 5 TYPE	Read
0x23	CERTIFICATE 5 DATE	Read

0x24	CERTIFICATE 5 NUMBER	Read
0x25	TABLE VALID	Read
0x26	TABLE REVISION	Read
0x27	ALTERNATE TIM ID VALID	Read
0x28	ALTERNATE TIM ID	Read
0x29	NUMBER OF COMPARTMENTS	Read
0x2A	COMPARTMENT VOLUME UNITS	Read
0x2B	TRAILER ID NUMBER	Read
0x2C	COMPARTMENT CONFIG	Read
0x2D	VAPOR INTERLOCK TYPE	Read
0x2E	COMPARTMENT 1 TYPES ALLOWED	Read
0x2F	COMPARTMENT 2 TYPES ALLOWED	Read
0x30	COMPARTMENT 3 TYPES ALLOWED	Read
0x31	COMPARTMENT 4 TYPES ALLOWED	Read
0x32	COMPARTMENT 5 TYPES ALLOWED	Read
0x33	COMPARTMENT 6 TYPES ALLOWED	Read
0x34	COMPARTMENT 7 TYPES ALLOWED	Read
0x35	COMPARTMENT 8 TYPES ALLOWED	Read
0x36	COMPARTMENT 9 TYPES ALLOWED	Read
0x37	COMPARTMENT 10 TYPES ALLOWED	Read
0x38	COMPARTMENT 11 TYPES ALLOWED	Read
0x39	COMPARTMENT 12 TYPES ALLOWED	Read
0x3A	COMPARTMENT 13 TYPES ALLOWED	Read
0x3B	COMPARTMENT 14 TYPES ALLOWED	Read
0x3C	COMPARTMENT 15 TYPES ALLOWED	Read
0x3D	COMPARTMENT 16 TYPES ALLOWED	Read

0x3E	MAX LOADING TEMPERATURE	Read
0x3F	TEMPERATURE UNITS	Read
0x40	COMPARTMENT 1 TYPE LOADED	Read / Write
0x41	COMPARTMENT 1 BATCH ID LOADED	Read / Write
0x42	COMPARTMENT 1 VOLUME LOADED	Read / Write
0x43	COMPARTMENT 2 TYPE LOADED	Read / Write
0x44	COMPARTMENT 2 BATCH ID LOADED	Read / Write
0x45	COMPARTMENT 2 VOLUME LOADED	Read / Write
0x46	COMPARTMENT 3 TYPE LOADED	Read / Write
0x47	COMPARTMENT 3 BATCH ID LOADED	Read / Write
0x48	COMPARTMENT 3 VOLUME LOADED	Read / Write
0x49	COMPARTMENT 4 TYPE LOADED	Read / Write
0x4A	COMPARTMENT 4 BATCH ID LOADED	Read / Write
0x4B	COMPARTMENT 4 VOLUME LOADED	Read / Write
0x4C	COMPARTMENT 5 TYPE LOADED	Read / Write
0x4D	COMPARTMENT 5 BATCH ID LOADED	Read / Write
0x4E	COMPARTMENT 5 VOLUME LOADED	Read / Write
0x4F	COMPARTMENT 6 TYPE LOADED	Read / Write
0x50	COMPARTMENT 6 BATCH ID LOADED	Read / Write
0x51	COMPARTMENT 6 VOLUME LOADED	Read / Write
0x52	COMPARTMENT 7 TYPE LOADED	Read / Write
0x53	COMPARTMENT 7 BATCH ID LOADED	Read / Write
0x54	COMPARTMENT 7 VOLUME LOADED	Read / Write
0x55	COMPARTMENT 8 TYPE LOADED	Read / Write
0x56	COMPARTMENT 8 BATCH ID LOADED	Read / Write
0x57	COMPARTMENT 8 VOLUME LOADED	Read / Write

0x58	COMPARTMENT 9 TYPE LOADED	Read / Write
0x59	COMPARTMENT 9 BATCH ID LOADED	Read / Write
0x5A	COMPARTMENT 9 VOLUME LOADED	Read / Write
0x5B	COMPARTMENT 10 TYPE LOADED	Read / Write
0x5C	COMPARTMENT 10 BATCH ID LOADED	Read / Write
0x5D	COMPARTMENT 10 VOLUME LOADED	Read / Write
0x5E	COMPARTMENT 11 TYPE LOADED	Read / Write
0x5F	COMPARTMENT 11 BATCH ID LOADED	Read / Write
0x60	COMPARTMENT 11 VOLUME LOADED	Read / Write
0x61	COMPARTMENT 12 TYPE LOADED	Read / Write
0x62	COMPARTMENT 12 BATCH ID LOADED	Read / Write
0x63	COMPARTMENT 12 VOLUME LOADED	Read / Write
0x64	COMPARTMENT 13 TYPE LOADED	Read / Write
0x65	COMPARTMENT 13 BATCH ID LOADED	Read / Write
0x66	COMPARTMENT 13 VOLUME LOADED	Read / Write
0x67	COMPARTMENT 14 TYPE LOADED	Read / Write
0x68	COMPARTMENT 14 BATCH ID LOADED	Read / Write
0x69	COMPARTMENT 14 VOLUME LOADED	Read / Write
0x6A	COMPARTMENT 15 TYPE LOADED	Read / Write
0x6B	COMPARTMENT 15 BATCH ID LOADED	Read / Write
0x6C	COMPARTMENT 15 VOLUME LOADED	Read / Write
0x6D	COMPARTMENT 16 TYPE LOADED	Read / Write
0x6E	COMPARTMENT 16 BATCH ID LOADED	Read / Write
0x6F	COMPARTMENT 16 VOLUME LOADED	Read / Write
0x70	TERMINAL NAME	Read / Write
0x71	TERMINAL ADDRESS	Read / Write
0x72	TERMINAL GANTRY NUMBER	Read / Write

0x73	FAULT LOG 1	Read
0x74	FAULT LOG 2	Read
0x75	FAULT LOG 3	Read
0x76	FAULT LOG 4	Read
0x77	FAULT LOG 5	Read
0x78	SERVICE CENTER NAME	Read
0x79	SERVICE CENTER ADDRESS	Read
0x7A	BUILDER NAME	Read
0x7B	BUILDER ADDRESS	Read
0x7C	TRUCK SERIAL NUMBER	Read
0x7D	TRUCK VIN	Read
0x7E	TRUCK BUILD DATE	Read
0x7F	TRUCK WEIGHT UNITS	Read
0x80	TRUCK GROSS VEHICLE WEIGHT	Read
0x81	INTELLICHECK TYPE	Read
0x82	OVERFILL SENSOR TYPE	Read
0x83	RETAINED SENSOR TYPE	Read
0x84	COMPARTMENT 1 BUILD VOLUME	Read
0x85	COMPARTMENT 2 BUILD VOLUME	Read
0x86	COMPARTMENT 3 BUILD VOLUME	Read
0x87	COMPARTMENT 4 BUILD VOLUME	Read
0x88	COMPARTMENT 5 BUILD VOLUME	Read
0x89	COMPARTMENT 6 BUILD VOLUME	Read
0x8A	COMPARTMENT 7 BUILD VOLUME	Read
0x8B	COMPARTMENT 8 BUILD VOLUME	Read
0x8C	COMPARTMENT 9 BUILD VOLUME	Read
0x8D	COMPARTMENT 10 BUILD VOLUME	Read
0x8E	COMPARTMENT 11 BUILD VOLUME	Read
0x8F	COMPARTMENT 12 BUILD VOLUME	Read

0x90	COMPARTMENT 13 BUILD VOLUME	Read
0x91	COMPARTMENT 14 BUILD VOLUME	Read
0x92	COMPARTMENT 15 BUILD VOLUME	Read
0x93	COMPARTMENT 16 BUILD VOLUME	Read
0x94	SCULLY SENSORS	Read
0x95	TANK MODEL NUMBER	Read
0x96	MAX WORKING PRESSURE	Read
0x97	ALLOWABLE WORKING PRESSURE	Read
0x98	PRESSURE UNITS	Read
0x99	BULKHEADS	Read
0x9A	TANK PROFILE	Read
0x9B	OVERFILL SENSOR 1 LENGTH	Read
0x9C	OVERFILL SENSOR 2 LENGTH	Read
0x9D	OVERFILL SENSOR 3 LENGTH	Read
0x9E	OVERFILL SENSOR 4 LENGTH	Read
0x9F	OVERFILL SENSOR 5 LENGTH	Read
0xA0	OVERFILL SENSOR 6 LENGTH	Read
0xA1	OVERFILL SENSOR 7 LENGTH	Read
0xA2	OVERFILL SENSOR 8 LENGTH	Read
0xA3	OVERFILL SENSOR 9 LENGTH	Read
0xA4	OVERFILL SENSOR 10 LENGTH	Read
0xA5	OVERFILL SENSOR 11 LENGTH	Read
0xA6	OVERFILL SENSOR 12 LENGTH	Read
0xA7	OVERFILL SENSOR 13 LENGTH	Read
0xA8	OVERFILL SENSOR 14 LENGTH	Read
0xA9	OVERFILL SENSOR 15 LENGTH	Read
0xAA	OVERFILL SENSOR 16 LENGTH	Read
0xAB	OVERFILL SENSOR 17 LENGTH	Read
0xAC	OVERFILL SENSOR 18 LENGTH	Read
0xAD	OVERFILL SENSOR 19 LENGTH	Read
0xAE	OVERFILL SENSOR 20 LENGTH	Read
0xAF	OVERFILL SENSOR 21 LENGTH	Read
0xB0	OVERFILL SENSOR 22 LENGTH	Read
0xB1	OVERFILL SENSOR 23 LENGTH	Read
0xB2	OVERFILL SENSOR 24 LENGTH	Read

Modbus Register Subcommands

Value	Description	Read / Write
0x03: Read 16-bit Holding Registers / 0x06: Write ModBus Register / 0x10: Write Multiple ModBus Registers		
0x0000	VIP Year	Read
0x0001	VIP Month	Read
0x0002	VIP Day	Read
0x0003	VIP Hour	Read
0x0004	VIP Minute	Read
0x0005	Shell version	Read
0x0006	VIP Serial Number	Read
0x0007	Latest Log pointer	Read
0x0008	VIP TAS Delay	Read / Write
0x0009	VIP Bypass Time-Out	Read / Write
0x000A	VIP Terminal number	Read / Write
0x000B	VIP ModBus Turnaround Delay	Read / Write
0x000C	Shell Checksum/CRC	Read
0x000E	Read the VIP Mode Control	Read / Write
0x000F	Kernel version	Read
0x0012	Scully type/model	Read
0x0020	Unit Serial Number (1/4)	Read
0x0021	Unit Serial Number (2/4)	Read
0x0022	Unit Serial Number (3/4)	Read
0x0023	Unit Serial Number (4/4)	Read
0x0024	Hardware Revision Level	Read
0x0025	System Configuration "A"	Read
0x0026	System Configuration "B"	Read
0x0027	System Configuration "C"	Read
0x0028	System Configuration "D"	Read
0x0029	RAM size (in KB)	Read
0x002A	FLASHRAM size (in KB)	Read
0x002B	EEPROM size (in KB)	Read
0x002C	Max ModBus message size	Read
0x002D	Number of 5 wire probes	Read
0x002E	Enable Modbus Features	Read
0x0030	Reference volt	Read
0x0031	Raw Power Supply (13 V)	Read
0x0032	Probe Bias Voltage	Read

0x0033	5-Wire Optic Pulse	Read
0x0038	Channel 0 Noise Voltage	Read
0x0039	Channel 1 Noise Voltage	Read
0x003A	Channel 2 Noise Voltage	Read
0x003B	Channel 3 Noise Voltage	Read
0x003C	Channel 4 Noise Voltage	Read
0x003D	Channel 5 Noise Voltage	Read
0x003E	Channel 6 Noise Voltage	Read
0x003F	Channel 7 Noise Voltage	Read
0x0040	Channel 0 10-Volt Rail	Read
0x0041	Channel 1 10-Volt Rail	Read
0x0042	Channel 2 10-Volt Rail	Read
0x0043	Channel 3 10-Volt Rail	Read
0x0044	Channel 4 10-Volt Rail	Read
0x0045	Channel 5 10-Volt Rail	Read
0x0046	Channel 6 10-Volt Rail	Read
0x047	Channel 7 10-Volt Rail	Read
0x0048	Channel 0 20-Volt Rail	Read
0x0049	Channel 1 20-Volt Rail	Read
0x004A	Channel 2 20-Volt Rail	Read
0x004B	Channel 3 20-Volt Rail	Read
0x004C	Channel 4 20-Volt Rail	Read
0x004D	Channel 5 20-Volt Rail	Read
0x004E	Channel 6 20-Volt Rail	Read
0x004F	Channel 7 20-Volt Rail	Read
0x0050	Channel 0 Current Voltage	Read
0x0051	Channel 1 Current Voltage	Read
0x0052	Channel 2 Current Voltage	Read
0x0053	Channel 3 Current Voltage	Read
0x0054	Channel 4 Current Voltage	Read
0x0055	Channel 5 Current Voltage	Read
0x0056	Channel 6 Current Voltage	Read
0x0057	Channel 7 Current Voltage	Read
0x0060	Read Clock Status	Read
0x0061	Relay Status	Read
0x0062	EEPROM status	Read
0x0064	"Acquire" state	Read
0x0065	"Probe-Try" state	Read
0x0066	Optic 5-wire state	Read

0x0067	Optic/Thermal 2-wire state	Read
0x0068	VIP status (inc DateStamp)	Read
0x0069	Service "A" flags	Read
0x006A	Service "B" flags	Read
0x006B	VIP status (fuel_type_fails)	Read
0x006C	VIP status (badvipdscode)	Read
0x006D	Ground status	Read
0x006E	VIP status (badvipflag)	Read
0x006F	VIP status (CERTIFICATE_ds_fails)	Read
0x0070	Shorts test active	Read / Write
0x0071	Debug Pulse on Code	Read / Write
0x0072	Debug Pulse on Code	Read / Write
0x0073	Debug Pulse on Code	Read / Write
0x0074	Debug Pulse on Code	Read / Write
0x0075	Debug Pulse on Failed Code	Read / Write
0x0076	Debug Pulse on Failed Code	Read / Write
0x0077	Debug Pulse on Failed Code	Read / Write
0x0078	Debug Pulse on Failed Code	Read / Write
0x0079	Software Feature Enable Code	Read / Write
0x007A	Software Feature Enable Code	Read / Write
0x007B	TIM read enable	Read / Write
0x007C	Resistive Ground reference value	Read / Write
0x007E	Enable Ground Display	Read / Write
0x007F	5-Wire Compartment Count Display Time	Read / Write
0x0080	Active Deadman Enabled	Read / Write
0x0081	Active Deadman Max open time	Read / Write
0x0082	Active Deadman Max close time	Read / Write
0x0083	Active Deadman Warning time	Read / Write
0x0084	Software Feature Enable Unload Terminal	Read / Write
0x0085	Supertim max unload time	Read / Write
0x0086	Supertim Certificate date enable mask	Read / Write
0x0087	Software Feature Enable compartment count check	Read / Write
0x0088	Supertim fuel type check mask	Read / Write
0x0089	Software Feature Enable auto write fuel type flag	Read / Write

0x008A	Supertim default fuel type msb and middle byte	Read / Write
0x008B	Supertim default fuel type lsb	Read / Write
0x00A0	EEPROM base address, hi	Read
0x00A1	EEPROM base address, lo	Read
0x00A2	Home block size	Read
0x00A3	Home block offset	Read
0x00A4	Boot block size	Read
0x00A5	Boot block offset	Read
0x00A6	Crash block size	Read
0x00A7	Crash block offset	Read
0x00A8	System block size	Read
0x00A9	System block offset	Read
0x00AA	Event log block size	Read
0x00AB	Event log block offset	Read
0x00AC	Bypass key block size	Read
0x00AD	Bypass key block offset	Read
0x00AE	Truck ID block size	Read
0x00AF	Truck ID block offset	Read
0x00E0	Soft COMM_ID ground errs	Read
0x00E1	Hard COMM_ID ground errs	Read
0x0100	Date/Time (Unix format) (High-order)	Read / Write
0x0101	Date/Time (Unix format) (Low-order)	Read / Write
0x0102	Current Event Elapsed Time (High-order)	Read
0x0103	Current Event Elapsed Time (Low-order)	Read
0x0104	Status "A" flags	Read
0x0105	Status "B" flags	Read
0x0106	Status "O" flags	Read
0x0107	Status "P" flags	Read
0x0108	Main Intellitrol state	Read
0x0109	Truck [Type] state	Read
0x010A	Truck Serial Number 1/3	Read
0x010B	Truck Serial Number 2/3	Read
0x010C	Truck Serial Number 3/3	Read
0x010D	Probes 1 & 2 State	Read

0x010E	Probes 3 & 4 State	Read
0x010F	Probes 5 & 6 State	Read
0x0110	Probes 7 & 8 State	Read
0x0111	Probes 9 & 10 State	Read
0x0112	Probes 11 & 12 State	Read
0x0113	Probes 13 & 14 State	Read
0x0114	Probes 15 & 16 State	Read
0x0115	Bypass State	Read
0x0116	Bypass Serial Number	Read
0x0117	Bypass Serial Number	Read
0x0118	Bypass Serial Number	Read
0x0119	Bypass Time (elapsed)	Read
0x011A	Non-permissive reasons	Read
0x011B	Latest Log pointer	Read
0x011C	Optic 2 wire Threshold	Read / Write
0x011D	Hysteresis	Read / Write
0x011E	Thermistor Threshold	Read / Write
0x0120	Number of truck compartments	Read
0x0121	Stop logging dome out events	Read / Write
0x0122	TIM info logged	Read
0x0123	TIM size	Read
0x0124	S TIM code	Read
0x0125	log data state	Read
0x0126	compare volts	Read