MODBUS-RTU PROTOCOL SPECIFICATION (V3.7.3)

General note:
The Modbus RTU protocol specification is also valid for all non-MID certified meters:

- DSZ16D = DSZ16DE
- DSZ16DZ = DSZ16DZE
- WSZ16D = WSZ16DE
- WSZ16DZ = WSZ16DZE

1. Transmission Characteristics
1.1 Bit Transmission
1.1.1 Transmission Order: LSB
1.1.2 Feature Bits: Data Bits - 8 bits, Stop Bits - 0 or 1 optional, Parity Bit - 0 or 1 optional;
1.1.3 Baud Rate: Optional
1.2 Byte Transmission
1.2.1 Byte Transmission Order for a Single Register: (2 bytes)
The data or address is transmitted from high bit to low bit.
1.2.2 Transmission Order for Multiple Registers: (n*2 bytes, n > 1)
The register addresses are transmitted from low bit to high bit

2. Instruction Format
2.1 Read holding register (Function Code **0x03**)
2.1.1 Master

Meter address	Function code **03H**	start address Hi	start address Lo	Number of registers high	Number of registers count low	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

E.g. To read manufacturing code (assuming meter address is '0xCC'), the sending frame would be: 'CC 03 FC 02 00 02 45 86'

2.1.2 Slave (correct)

Meter address	Function code **03H**	number of bytes	Register #1 high	Register #1 low	Register #2 high	Register #2 low	... ...	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte		1 byte	1 byte

E.g. If sales manufacturer code is 0000000D (assuming meter address is '0xCC'), the correct response frame would be: 'CC 03 04 00 00 00 0D 27 3A'.

2.1.3 Slave (incorrect)

Address field	Function code **83H**	Error code	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte

2.2 Read input register (Function code **0x04**)
2.2.1 Master

Meter address	Function code **04H**	start address high	start address low	number of registers high	number of registers low	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

E.g. to read total import active energy and total export active power (assuming meter address is 0xCC), the sending frame would be:
'CC 04 00 48 00 04 61 C2'

2.2.2 Slave (correct)

Meter address	Function code **04H**	number of bytes	Register #1 high	Register #1 low	Register #2 high	Register #2 low	... ...	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte		1 byte	1 byte

E.g. If total import active energy of the meter is 4.61KWh and total export active energy is 3.68kWh (assuming meter address is 0xCC), the correct response frame would be: 'CC 04 08 00 00 01 CD 00 00 01 70 CF D7'.

2.2.3 Slave (incorrect)

Address field	Function code **84H**	Error code	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte

2.3 write single register

2.3.1 master (Function code **0x10**) (**ONLY** for: DSZ16xx & WSZ16xx meters)

Meter address	Function code **10H**	start address high	start address low	number of registers high	number of registers low	Byte count	Value	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte = N	N* 2 Bytes	1 byte	1 byte

E.g. send mater of 'CC 10 00 14 00 02 04 00 00 00 2A B5 20' to change meter address 0xCC to 0x2A.

2.3.2 master (Function code **0x06**)

Meter address	Function code **06H**	start address high	start address low	value high	value low	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

E.g. to change meter address from 0xcc to 0x2A, the sending frame would be 'CC 06 00 15 00 2A 58 0C.'

2.3.3 slave (correct)

Meter address	Function code **06H**	start address high	start address low	value high	value low	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte
Meter address	Function code **10H**	start address high	start address low	number of registers high	number of registers low	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

E.g for (06H). If meter address is correctly changed to 0x2A, the correct response frame would be:'2A 06 00 14 00 2A 4E 0A'.

2.3.4 slave (incorrect)

Address field	Function code **86H**	Error code	CRC calibration code low	CRC calibration code high
1 byte	1 byte	1 byte	1 byte	1 byte

2.4 Error code

error	Description	Remark
1	illegal function code	The function code is not recognized or not supported
2	illegal data address	The register address data is not within the specified range or the register address is an odd number
3	illegal data value	The data value is not within the specified range
4	Data Calibration error	Calibration error

3 Coding sheet

3.1 Input register (read: 0x04)

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30001	Voltage of L1-N	V	int/float	XXXXXXXX	4	0000	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30003	Voltage of L2-N	V	int/float	XXXXXXXX	4	0002	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30005	Voltage of L3-N	V	int/float	XXXXXXXX	4	0004	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30007	Current of L1	A	int/float	XXXXXXXX	4	0006	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30009	Current of L2	A	int/float	XXXXXXXX	4	0008	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30011	Current of L3	A	int/float	XXXXXXXX	4	000A	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30013	Active power of L1	W	int/float	XXXXXXXX	4	000C	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30015	Active power of L2	W	int/float	XXXXXXXX	4	000E	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30017	Active power of L3	W	int/float	XXXXXXXX	4	0010	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30019	Apparent power of L1	VA	int/float	XXXXXXXX	4	0012	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30021	Apparent power of L2	VA	int/float	XXXXXXXX	4	0014	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30023	Apparent power of L3	VA	int/float	XXXXXXXX	4	0016	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30025	Reactive power of L1	Var	int/float	XXXXXXXX	4	0018	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30027	Reactive power of L2	Var	int/float	XXXXXXXX	4	001A	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30029	Reactive power of L3	Var	int/float	XXXXXXXX	4	001C	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30031	Power factor of L1		int/float	00000XXX	4	001E	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30033	Power factor of L2		int/float	00000XXX	4	0020	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30035	Power factor of L3		int/float	00000XXX	4	0022	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30037	Cosφ of L1		int/float	00000XXX	4	0024	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30039	Cosφ of L2		int/float	00000XXX	4	0026	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30041	Cosφ of L3		int/float	00000XXX	4	0028	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30053	Total active power	W	int/float	XXXXXXXX	4	0034	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30055	Total apparent power	VA	int/float	XXXXXXXX	4	0036	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30057	Total reactive power	Var	int/float	XXXXXXXX	4	0038	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30063	Total power factor		int/float	00000XXX	4	003E	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30065	Total cosφ		int/float	00000XXX	4	0040	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30071	Frequency	Hz	int/float	000000XX	4	0046	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30073	Total import active energy	kWh	int/float	XXXXXXXX	4	0048	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30075	Total export active energy	kWh	int/float	XXXXXXXX	4	004A	read	DSZ15DZMOD DSZ16DZ DSZ16WDZ WSZ16DZ
30081	Neutral current	A	int/float	XXXXXXXX	4	0050	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30083	Total positive reactive energy	kVarh	int/float	XXXXXXXX	4	0052	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30085	Total negative reactive energy	kVarh	int/float	XXXXXXXX	4	0054	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30087	Voltage of L1-L2	V	int/float	XXXXXXXX	4	0056	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30089	Voltage of L2-L3	V	int/float	XXXXXXXX	4	0058	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30091	Voltage of L3-L1	V	int/float	XXXXXXXX	4	005A	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30097	Resettable Total import active energy	kWh	int/float	XXXXXXXX	4	0060	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30099	Resettable Total export active energy	kWh	int/float	XXXXXXXX	4	0062	read	DSZ15DZMOD DSZ16DZ DSZ16WDZ WSZ16DZ
30101	Tarif 1 import active energy	kWh	int/float	XXXXXXXX	4	0064	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30103	Tarif 1 Resettable import active energy	kWh	int/float	XXXXXXXX	4	0066	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30105	Tarif 1 export active energy	kWh	int/float	XXXXXXXX	4	0068	read	DSZ16DZ DSZ16WDZ WSZ16DZ
30107	Tarif 1 Resettable export active energy	kWh	int/float	XXXXXXXX	4	006A	read	DSZ16DZ DSZ16WDZ WSZ16DZ
30109	Tarif 2 import active energy	kWh	int/float	XXXXXXXX	4	006C	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30111	Tarif 2 Resettable import active energy	kWh	int/float	XXXXXXXX	4	006E	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
30113	Tarif 2 export active energy	kWh	int/float	XXXXXXXX	4	0070	read	DSZ16DZ DSZ16WDZ WSZ16DZ
30115	Tarif 2 Resettable export active energy	kWh	int/float	XXXXXXXX	4	0072	read	DSZ16DZ DSZ16WDZ WSZ16DZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30117	Tarif 3 import active energy	kWh	int/float	XXXXXXXX	4	0074	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30119	Tarif 3 Resettable import active energy	kWh	int/float	XXXXXXXX	4	0076	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30121	Tarif 3 export active energy	kWh	int/float	XXXXXXXX	4	0078	read	DSZ16DZ DSZ16WDZ
30123	Tarif 3 Resettable export active energy	kWh	int/float	XXXXXXXX	4	007A	read	DSZ16DZ DSZ16WDZ
30133	Tarif 4 import active energy	kWh	int/float	XXXXXXXX	4	0084	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30135	Tarif 4 Resettable import active energy	kWh	int/float	XXXXXXXX	4	0086	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30137	Tarif 4 export active energy	kWh	int/float	XXXXXXXX	4	0088	read	DSZ16DZ DSZ16WDZ
30139	Tarif 4 Resettable export active energy	kWh	int/float	XXXXXXXX	4	008A	read	DSZ16DZ DSZ16WDZ
30141	Total import active energy of L1	kWh	int/float	XXXXXXXX	4	008C	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30143	Total import active energy of L2	kWh	int/float	XXXXXXXX	4	008E	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30145	Total import active energy of L3	kWh	int/float	XXXXXXXX	4	0090	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
30147	Total export active energy of L1	kWh	int/float	XXXXXXXX	4	0092	read	DSZ16DZ DSZ16WDZ

Number	Description	Unit	Data type	Data format	Length (bytes)	Register address (Hex)	Read/Write	Support
30149	Total export active energy of L2	kWh	int/float	XXXXXXXX	4	0094	read	DSZ16DZ DSZ16WDZ
30151	Total export active energy of L3	kWh	int/float	XXXXXXXX	4	0096	read	DSZ16DZ DSZ16WDZ
30153	Selected Tariff 1 = Tariff1 2 = Tariff2 3 = Tariff3 (only DSZ16) 4 = Tariff4 (only DSZ16)		Int/float	XXXXXXXX	4	0098	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Remark:
1. All values except power and power factor, are unsigned and have 2 decimals after convert to decimal. Power is a signed number without decimal(represented in two's complement). Power factor is also a signed number with 3 decimals (represented in two's complement).
2. Due to the data being 4 bytes occupying 2 register addresses, the storage order is from high to low. For example, if import active energy is 123456.78kWh, then 1234 is stored in register 0x0048 and 5678 is stored in register 0x0049.
3. For one-way electricity meter, total import active energy represents total active energy. For bidirectional meter, it has both total import active energy and total export active energy.

3.2 Holding register (read: 0x03 | write 0x10)

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
40019	Communication parity and stop bits (default is 0). 0-1 bit, stop bit and no parity. 1-1 bit, stop bit and even parity 2-1 bit, stop bit and odd parity 3-2 bit, stop bit and no parity	int	0000000N	4	0012	read/write	DSZ15DZMOD (read only) DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40021	Communication address (1-247)	int	000000NN	4	0014	read/write	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
40029	"Communication rate feature word (default is 5, DSZ15DZMOD can only select 5 or 9) 0-300bps 1-600bps 2-1200bps 3-2400bps 4-4800bps 5-9600bps 6-14400bps 7-19200bps 8-38400bps 9-57600bps A-115200bps	int	0000000N	4	001C	read/write	DSZ15DZMOD (read only) DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40031	data format: 0—integer 1—float	int	0000000N	4	001E	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40087	S0 import active energy Pulse width in 2-99 ms	int	000000NN	4	0056	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40089	S0 export active energy Pulse width in 2-99 ms	int	000000NN	4	0058	read/write	DSZ16DZ DSZ16WDZ WSZ16DZ
40091	Tariff selection: 0=select over E2,E3,E4 1 = Tariff1 2 = Tariff2 3 = Tariff3 (only DSZ16) 4 = Tariff4 (only DSZ16) **NOTE:** - External control wiring takes priority over Modbus register settings. - When the tariff is selected via register control, external Tariff terminals must remain disconnected.	int	0000000N	4	005A	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
40093	Reset resettable Total import active energy. If 1 is written, set counter to 0	int	0000000N	4	005C	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40095	Reset resettable Total export active energy. If 1 is written, set counter to 0	int	0000000N	4	005E	read/write	DSZ16DZ DSZ16WDZ WSZ16DZ
40097	Reset resettable Tarif 1 import active energy. If 1 is written, set counter to 0	int	0000000N	4	0060	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40099	Reset resettable Tarif 1 export active energy. If 1 is written, set counter to 0	int	0000000N	4	0062	read/write	DSZ16DZ DSZ16WDZ WSZ16DZ
40101	Reset resettable Tarif 2 import active energy. If 1 is written, set counter to 0	int	0000000N	4	0064	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
40103	Reset resettable Tarif 2 export active energy. If 1 is written, set counter to 0	int	0000000N	4	0066	read/write	DSZ16DZ DSZ16WDZ WSZ16DZ
40105	Reset resettable Tarif 3 import active energy. If 1 is written, set counter to 0	int	0000000N	4	0068	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
40107	Reset resettable Tarif 3 export active energy. If 1 is written, set counter to 0	int	0000000N	4	006A	read/write	DSZ16DZ DSZ16WDZ
40109	Reset resettable Tarif 4 import active energy. If 1 is written, set counter to 0	int	0000000N	4	006C	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
40111	Reset resettable Tarif 4 export active energy. If 1 is written, set counter to 0	int	0000000N	4	006E	read/write	DSZ16DZ DSZ16WDZ
463761	S0 import active energy Pulse constant (default for D and DZ is 6 and default for WD and WDZ is 4) 0 - (NA) 1—0.01 imp/kWh 2—0.1 imp/kWh 3—1 imp/kWh 4—10 imp/kWh 5—100 imp/kWh 6—1000 imp/kWh 7—2000 imp/kWh 8—10000 imp/kWh	int	0000000N	4	F910	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
463763	S0 export active energy Pulse constant (default for DZ is 6 and default for WDZ is 4) 0 - (NA) 1—0.01 imp/kWh 2—0.1 imp/kWh 3—1 imp/kWh 4—10 imp/kWh 5—100 imp/kWh 6—1000 imp/kWh 7—2000 imp/kWh 8—10000 imp/kWh	int	0000000N	4	F912	read/write	DSZ16DZ DSZ16WDZ WSZ16DZ

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
463765	CT ratio (default is 1) 0 - (NA) 1-5:5 2-50:5 3-100:5 4-150:5 5-200:5 6-250:5 7-300:5 8-400:5 9-500:5 A-600:5 B-750:5 C-1000:5 D-1250:5 E-1500:5 F-5:1 10-50:1 11-100:1 12-150:1 13-200:1 14-250:1 15-300:1 16-400:1 17-500:1 18-600:1 19-750:1 1A-1000:1 1B-1250:1 1C-1500:1	int	0000000N	4	F914	read/write	DSZ16WD DSZ16WDZ
463767	Reverse Measure-ment direction (default = 0) 0 - off 1 - on	int	0000000N	4	F916	read/write	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ
464513	Serial number	BCD	NNNNNNNN	4	FC00	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
464515	manufacturing code	int	0000000D	4	FC02	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ

Number	Description	Data type	Data format	Length (bytes)	Register Address (Hex)	Read/Write	Support
464521	Sales Manufacturer 2-1	ASCII	0X45/4C/54/41	4	FC08	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
464523	Sales Manufacturer 2-2	ASCII	0X4B/4F/20/20	4	FC0A	read	DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
464525	Meter mode 0 - (NA) 1 - DSZ15DZMOD 2 - DSZ16D 3 - DSZ16DZ 4 - DSZ16WD 5 - DSZ16WDZ 6 - WSZ16D 7 – WSZ16DZ	int	000000NN	4	FC0C	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ
462527	Software version no.	int	00NNNNNN	4	FC0E	read	DSZ15DZMOD DSZ16D DSZ16DZ DSZ16WD DSZ16WDZ WSZ16D WSZ16DZ