## AMS-telegram fra HAN-kontakt Versjon: V4

AMS-måler KAIFA Type: MA105H2E 1-fase

Byte	Hex	Dec	Asc	Forklaring og	Verdier	Byte
				OBIS-enheter		-
	7e			Flag field - star	rt	1 byte
1	a0	160		Frame format		2 byte:
2	27	39		Bytes in telegrar	n: 39 (11	bit)
3	01	1		Destination adres	ss	2 byte:
4	02	2				
5	01	1		Source adress		1 byte
6	10	16		Control		1 byte
7	5a	90		HCS - Header Chec	k Seq.	2 byte
8	87	135				
9	e6	230		LLC - Dest. LSAP		1 byte
10	e7	231		LLC - Source LSAI		1 byte
11	00	0		LLC Quality		1 byte
12	0f	15		Information		5 byte
13	40	64				
14	0.0	0				
15	0.0	0				
16	0.0	0				
17	09	9		String follow (CC		
18	0c	12		Num. of bytes in		
19	07	7		Year	2021	2 byte
20	e5	229				
21	01	1		Month	1	1 byte
22	1c	28		Date	28	1 byte
23	04	4		Day number	4	1 byte
24	0e	14		Time	14	1 byte
25	3b	59		Minute	59	1 byte
26	2a	42		Second	42	1 byte
27	ff	255		Hundr.0xff if not	spec.	1 byte
28	80	128		Dev.0x8000 if not	spec.	2 byte
29	00	0				L
30	00	0	_	Clock Status		1 byte
31	02	2		Start OBIS-part		1 byte
32	01	1	_	Num. of OBIS-unit		1 byte
33	06	6		Start OBIS-unit I		1 byte
34	00	0	_	Activ Power	4001 W	4 byte
35	00	0				
36	0f	15				
37	al	161				
38	88	136	_	FCS - Frame Check	seq.	2 byte
39	50	80		-1 41 11		
	7e	126	I	Flag field - stop	,	1 byte

List Byte nr				nd			
nr	Hex	- 10 Dec	Asc	Forklaring og	Verdier		Bytes
	kode	kode	kode	OBIS-enheter			
	7e	126		Flag field - star	t	1	byte
1 2	a0 65	160		Frame format	n: 101 (11 b	2 it)	bytes
3	01	101		Bytes in telegram Destination adres	1: 101 (11 E	it)	bytes
4 5	02	2					
5 6	01 10	1 16		Source adress Control		1	byte byte
7	f0	240		HCS - Header Chec	k Seq.	2	bytes
8	50	80				1	
10	e6	230		LLC - Dest. LSAP LLC - Source LSAP	,	1	bytes byte
11	0.0	0		LLC Quality		1	byte
12	0f 40	15		Information		5	bytes
13	40	64				_	
15	0.0	0					
16	00	9					
17	09			String follow (CO Num. of bytes in	SEM Date_Ti string is 1	me)	
1.0	0c 07	7		Year	2021	2	bytes
20	e5	229		War at h	1	1	had a
21		28		Month Date	28	1	byte byte
22	1c 04	4		Day number Time	4	1	byte
24	0e 3b	14		Time	14	1	byte
25	3b 28	59 40		Minute Second	59 42	1	byte byte
27	ff	255		Hundr. 0xff if not	spec.	1	byte
28	80	128		Dev.0x8000 if not	spec.	2	bytes
29 30	00	0		Clock Status		1	
31	02	2				-	byte
32	09	9		Start OBIS-part Num. of OBIS-unit Start OBIS-unit 1 Antall etterfølg	s is 9		
33	09 07	9		Start OBIS-unit 1	anda /	r 7	
35	4h	75	K	Antall etterfølg OBIS-version	ende tegn e KFM 001	r 7	
36	46	70	F	ODID VCIDION	1111_001		
37	4d	77 95	M				
38	5f 30	95 48	0				
40	30	48	0				
41	31	49	1				
42	09 10	9 16		Start OBIS-unit 2 Num.of bytes 16			
43	10	ddd	a	Num.of bytes 16 Meter ID			
45	xx	ddd	a				
46	xx	ddd	a				
47	xx	ddd ddd	a a				
49	XX	ddd	a				
50	xx	ddd	a				
51 52	XX	ddd	a a			_	
53	XX	ddd	a				
54	xx	ddd	a				
55 56	XX	ddd	a a			_	
5.7	XX	ddd	a				
58	xx	ddd	a				
59 60	09						
		ddd	a	Chart OBIC unit 7			
61	08	9		Start OBIS-unit 3 Num.of bytes 8			
61	08 4d	9 8	М	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61 62 63	08 4d 41	9 8 77 65	M	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61	08 4d	9 8	М	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61 62 63 64 65	08 4d 41 31 30 35	9 8 77 65 49 48	M A 1 0	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61 62 63 64 65 66	08 4d 41 31 30 35 48	9 8 77 65 49 48 53	M A 1 0 5 H	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61 62 63 64 65 66 67	08 4d 41 31 30 35 48 32	9 8 77 65 49 48 53 72	M A 1 0 5 H	Start OBIS-unit 3 Num.of bytes 8 Meter-type	MA105H2E		
61 62 63 64 65 66 67 68 69	08 4d 41 31 30 35 48 32 45 06	9 8 77 65 49 48 53 72 50 69	M A 1 0 5 H	Meter-type  Start OBIS-unit 4			
61 62 63 64 65 66 67 68 69 70	08 4d 41 31 30 35 48 32 45 06	9 8 77 65 49 48 53 72 50 69	M A 1 0 5 H	Meter-type	MA105H2E	4	bytes
61 62 63 64 65 66 67 68 69 70 71	08 4d 41 31 30 35 48 32 45 06 00	9 8 77 65 49 48 53 72 50 69 6	M A 1 0 5 H	Meter-type  Start OBIS-unit 4		4	bytes
61 62 63 64 65 66 67 68 69 70 71 72 73	08 4d 41 31 30 35 48 32 45 06 00 00 0f a4	9 8 77 65 49 48 53 72 50 69 6 0	M A 1 1 0 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos		4	bytes
61 62 63 64 65 66 67 68 69 70 71 72 73 74	08 4d 41 31 30 35 48 32 45 06 00 00 0f a4	9 8 77 65 49 48 53 72 50 69 6 0 0 15	M A 1 1 0 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos	4004 W		
61 62 63 64 65 66 67 68 69 70 71 72 73 74 75	08 4d 41 31 30 35 48 32 45 06 00 0f a4 06	9 8 77 65 49 48 53 72 50 69 6 0 0 15 164 6	M A 1 1 0 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos			bytes
611 622 633 644 655 666 677 71 72 73 74 75 76 77	08 4d 41 31 30 35 48 32 45 06 00 0f a4 06 00	9 8 77 65 49 48 53 72 50 69 6 0 0 15 164 6	M A 1 1 0 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos	4004 W		
611 622 633 644 655 666 677 707 717 727 737 747 757 767 777	08 4d 41 31 30 35 48 32 45 06 00 00 0f a4 06 00 00 00	9 8 77 65 49 48 53 72 50 69 6 0 15 164 6 0	M A 1 1 0 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg	4004 W		
611 622 633 644 655 666 677 71 722 733 744 755 767 777 788 799	08 4d 41 31 30 35 48 32 45 06 00 00 0f a4 06 00 00 00 00 00 00 00 00 00 00 00 00	99 88 777 655 499 488 533 722 500 0 0 0 0 155 164 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	M A 1 0 5 5 H 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg	4004 W	4	bytes
611 622 633 644 655 666 677 71 722 733 744 75 76 77 78	08 4d 41 31 30 35 48 32 45 06 00 00 0f a4 06 00 00 00	99 88 7777655 49948 533725 5000 000 155164 600 000 000 660 000	M A 1 0 5 5 H 2 E	Meter-type  Start OBIS-unit 4 Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg	4004 W	4	
611 622 633 644 655 666 677 71 722 733 744 755 767 778 80 81 82 83	08 4dd 41 31 30 35 48 32 45 06 00 00 00 00 00 00 00 00 00 00 00 00	99 88 7777 655 499 60 0 0 0 155 1644 66 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	M A 1 0 5 5 H 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg	4004 W	4	bytes
611 622 633 644 655 666 677 701 712 73 74 75 76 77 78 80 81 82 83 84	08 4dd 411 311 300 355 488 322 455 066 000 000 000 000 000 000 000 000 0	99 88 7777 655 499 488 533 722 500 0 0 155 1644 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos	4004 W	4	bytes
611 622 633 644 655 666 677 71 722 733 744 755 767 77 788 80 81 82 83 84 85	08 4dd 411 311 300 355 488 322 455 066 000 000 000 000 000 000 000 000 0	99 88 7777655 649498 4488533 72250 0000 0000 0000 0000 0000 0000 000	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos	0 W	4	bytes
611 622 633 644 655 666 677 71 722 73 74 75 76 77 78 80 81 82 83 84 85 86 87	08 4dd 411 301 355 488 322 455 066 000 000 000 000 000 000 000 000 0	9 9 8 8 8 7777 7655 69 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg	4004 W	4	bytes
611 622 633 644 655 666 677 70 71 72 73 74 75 76 77 78 80 81 82 83 84 85 86 87 88 88 88 88 88 88 88 88 88 88 88 88	088 4dd 411 311 300 355 488 066 000 001 000 000 000 000 000 000 000	9 9 8 8 8 777 77 76 55 65 69 69 66 60 00 00 00 00 00 00 00 00 00 00 00	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos	0 W	4	bytes
611 622 633 644 655 666 677 70 71 72 73 74 75 77 77 78 80 81 82 83 84 85 86 87 87 88 88 88 88 88 88 88 88 88 88 88	088 4d 4d1 311 310 303 355 666 000 000 000 000 000 000 000 000 0	9 9 8 8 8 777 77 77 76 55 69 9 6 6 6 6 6 0 0 0 0 0 0 0 0 0 0 0 0	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg  Start OBIS-unit 6 Reaktiv eff. pos  Start OBIS-unit 7 Reaktiv eff. pos	0 W 0 VAr	4	bytes
611 622 633 644 655 666 677 71 72 733 744 755 76 77 78 80 81 82 83 84 85 86 87 87 88 88 88 89 99 99 99 99 99 99 99 99 99	088 4dd 411 311 300 355 488 482 455 066 000 000 000 000 000 000 000 000 0	9 9 8 8 8 777 77 76 55 65 69 69 66 60 00 00 00 00 00 00 00 00 00 00 00	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos Start OBIS-unit 7 Reaktiv eff. neg Start OBIS-unit 7 Reaktiv eff. neg	0 W 0 VAr	4	bytes
611 622 633 644 655 666 677 700 71 72 73 744 75 76 77 78 80 81 82 83 84 85 88 88 89 90 90 91 92 92	088 4dd 411 311 320 355 455 060 000 000 000 000 000 000 000 000 0	9 9 8 8 7777 655 655 655 655 655 655 655 655 65	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg  Start OBIS-unit 6 Reaktiv eff. pos  Start OBIS-unit 7 Reaktiv eff. pos	0 W 0 VAr	4	bytes
611 622 633 644 655 666 677 707 788 799 808 818 828 838 845 858 899 909 919 929	088 4dd 411 311 320 325 324 55 32 32 32 32 32 32 32 32 32 32 32 32 32	9 9 8 8 7777 655 65 65 65 65 65 65 65 65 65 65 65 65	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos Start OBIS-unit 7 Reaktiv eff. neg Start OBIS-unit 7 Reaktiv eff. neg	0 W 0 VAr	4	bytes
611 622 633 644 655 666 677 700 71 72 73 744 75 76 77 78 80 81 82 83 84 85 88 88 89 90 90 91 92 92	088 484 4dd 411 311 320 325 488 322 48 96 000 000 000 000 000 000 000 000 000	9 9 8 8 7777 655 8 9 9 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos Start OBIS-unit a Aktiv eff. neg Start OBIS-unit a Reaktiv eff. pos Start OBIS-unit a Reaktiv eff. pos Start OBIS-unit a Start OBIS-unit a Start OBIS-unit a	0 W 0 VAr	4	bytes
611 622 633 644 655 666 677 777 773 775 766 777 778 801 818 828 838 844 859 909 919 929 939 944 956	08844d41331133003554884864864864864864864864864864864864864	9 9 8 8 7777 655 65 65 65 65 65 65 65 65 65 65 65 65	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg  Start OBIS-unit 6 Reaktiv eff. pos  Start OBIS-unit 7 Reaktiv eff. pos  Start OBIS-unit 6 Start OBIS-unit 7 Start OBIS-unit 7 Start OBIS-unit 8 Start OBIS-unit 8 Start OBIS-unit 8	0 W 0 VAr	4	bytes bytes
611 622 633 644 655 666 677 777 788 808 818 848 858 889 991 992 993 994 995 997	088 44d 411 311 300 305 488 322 455 066 000 000 000 000 000 000 000 000 0	99 887777 655 499488 498488 6690 000 000 000 000 000 000 000 000 00	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos Start OBIS-unit a Aktiv eff. neg Start OBIS-unit a Reaktiv eff. pos Start OBIS-unit a Reaktiv eff. pos Start OBIS-unit a Start OBIS-unit a Start OBIS-unit a	0 WAr 151 VAr 17191 mA	4	bytes
611 622 633 644 655 666 677 707 717 727 737 744 775 767 777 80 81 82 82 88 88 88 89 90 90 90 90 90 90 90 90 90 90 90 90 90	088 44d 413 311 320 455 455 455 455 455 455 455 455 455 45	9 9 8 8 777 2 8 8 777 2 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	M A A 1 1 0 0 5 5 H H 2 2 E	Start OBIS-unit a Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg  Start OBIS-unit 6 Reaktiv eff. pos  Start OBIS-unit 7 Reaktiv eff. pos  Start OBIS-unit 6 Start OBIS-unit 7 Start OBIS-unit 7 Start OBIS-unit 8 Start OBIS-unit 8 Start OBIS-unit 8	0 WAr 151 VAr 17191 mA	4	bytes bytes
611 622 633 644 655 666 677 777 788 808 818 848 858 889 991 992 993 994 995 997	088 44d 4131131313535458600000000000000000000000000000000000	99 887777 655 499488 498488 6690 000 000 000 000 000 000 000 000 00	MM AA A	Start OBIS-unit 4 Aktiv eff. pos Start OBIS-unit 5 Aktiv eff. neg Start OBIS-unit 6 Reaktiv eff. pos Start OBIS-unit 7 Reaktiv eff. neg Start OBIS-unit 8	0 WAr 151 VAr 17191 mA 2338 VX10	4 4 4	bytes bytes bytes
611 622 633 644 655 666 677 777 787 777 788 818 828 838 844 855 878 899 991 997 997 998 999	088 44d 411 311 311 320 325 325 325 325 325 325 325 325 325 325	9 9 8 8 777 77 6 5 5 6 9 9 9 9 9 9 9 9 3 4 4 1 5 3 3 9 3 9 3 3 4 3 9 3 9 3 9 3 9 3 9 3 9	M A A A A A A A A A A A A A A A A A A A	Start OBIS-unit a Aktiv eff. pos  Start OBIS-unit 5 Aktiv eff. neg  Start OBIS-unit 6 Reaktiv eff. pos  Start OBIS-unit 7 Reaktiv eff. pos  Start OBIS-unit 6 Start OBIS-unit 7 Start OBIS-unit 7 Start OBIS-unit 8 Start OBIS-unit 8 Start OBIS-unit 8	4004 W 0 W 0 VAr 151 VAr 17191 mA 2338 Vx10	4 4 4	bytes bytes

liste Syte nr	Hex kode	Dec	Asc	Forklaring og OBIS-enheter	Verdier	Byte
	7e	126		Flag field - start		1 byte
1 2	a0 87	160 135		Frame format Bytes in telegram: 13	5 (11 bit)	2 byte
3	01	1		Destination adress	(11 010)	2 byte
5	01	2 1		Source adress		1 byte
6 7	10 9e	16 158		Control HCS - Header Check Se	q.	1 byte 2 byte
8	6d e6	109 230		LLC - Dest. LSAP	1	
10	e7	231		LLC - Source LSAP		1 byte
11 12	00 0f	15		LLC Quality Information		1 byte 5 byte
13	40	64				,
14 15	00	0				
16 17	00	9		String follow (COSEM	Date Time)	
18	0c 07	12		Num. of bytes in stri Year	ng is 12 2021	2 byte
20	e5	229				
21	01 1c	1 28		Month Date	1 28	1 byte
23	04 0f	4 15		Day number Time	4 14	1 byte
25	0.0	0		Minute	59	1 byte
26 27	0a ff	10 255		Second Hundr.0xff if not spe	42 .c.	1 byte
28	80	128		Dev.0x8000 if not spe	c.	2 byte
30	0.0	0		Clock Status		1 byte
31 32	02 0e	2 14		Start OBIS-part Num. of OBIS-units is	14	
33	09	9		Start OBIS-unit 1		
35	4b	75	K	Antall etterfølgende OBIS-version	tegn er 7 KFM_001	
36 37	46 4d	70 77	F			
38	5f 30	95 48	0			
40	30	48	0			
41	31 09	49 9	1	Start OBIS-unit 2		
43	10 xx	16 ddd		Num.of bytes 16 Meter ID		
45	XX	ddd	a			
46 47	xx	ddd ddd	a			
48	xx	ddd	a			
50	xx	ddd	a			
51 52	xx	ddd ddd	a			
53 54	xx	ddd ddd	a			
55	XX	ddd	a			
56 57	XX	ddd	a			
58 59	XX XX	ddd	a			
60	09	9	a	Start OBIS-unit 3 Num.of bytes 8		
61	08 4d	77	M	Num.of bytes 8 Meter-type	MA105H2E	
63 64	41	65 49	A 1			
65	30	48	0			
66 67	35 48	53 72	5 H			
68	32 45	50 69	2 E			
70	06	6	-	Start OBIS-unit 4		
71 72	00	0		Aktiv eff. pos	4478 W	4 byte
73 74	11 7e	17 126				
75	06	6		Start OBIS-unit 5		
76 77	00	0		Aktiv eff. neg	0 W	4 byte
78 79	00	0				
80	06	6		Start OBIS-unit 6		
81 82	00	0		Reaktiv eff. pos	0 VAr	4 byte
83	00	0				
85	06	6		Start OBIS-unit 7	4.0	
86 87	00	0	E	Reaktiv eff. neg	97 VAr	4 byte
88 89	00 61	97	H			
90	06	6		Start OBIS-unit 8 Strøm	19233 mA	A L
92	0.0	0		D CT (OIII	19233 MA	4 byte
93 94	4b 21	75 33	F			
95 96	06	6		Start OBIS-unit 9 Spenning	2335 Vx10	4 byte
97	0.0	0			2555 VAIU	- Dyce
98 99	09 1f	9 31				
100	09	9 12		Start OBIS-enhet 10, Antall etterfølgende	tidstempling e	energi
102	0c 07	7		År	2021	2 byte
103 104	e5 01	1		Måned	1	1 byt
105 106	1c	28 4		Dato Dag nr	28 4	1 byt
107	0f	15		Time Minutt	15	1 byt
109	0a	10		Sekund	10	1 byt 1 byt
110 111	ff 80	128	<del>-</del>			
112	00	0				
	06	6		Start OBIS-enhet 11		
114	01 d3	1 211		Aktiv energi pos	30619318 Wh	4 byte
115	- 43	54				
115 116 117	36	182	$\vdash$	Start OBIS-enhet 12		
115 116 117 118 119	36 b6 06			Aktiv energi neg	0 Wh	4 byte
115 116 117 118 119 120	06 00	0				
115 116 117 118 119 120 121 122	b6 06 00 00	0				
115 116 117 118 119 120 121 122 123 124	06 00 00 00 00 00	0 0		Start OBIS-enhet 13		
115 116 117 118 119 120 121 122 123 124 125	b6 06 00 00 00 00 06	0 0 0 6		Start OBIS-enhet 13 Reaktiv "energi" pos	13693 VArh	4 byte
115 116 117 118 119 120 121 122 123 124 125 126 127	b6 06 00 00 00 00 06 00 00	0 0 0 6 0 0		Start OBIS-enhet 13 Reaktiv "energi" pos	13693 VArh	4 byte
115 116 117 118 119 120 121 122 123 124 125 126	b6 06 00 00 00 00 00 00	0 0 0 6 0 0			13693 VArh	4 byte
115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130	b6 06 00 00 00 00 06 00 00 35 7d 06	0 0 0 6 0 0 53 125 6			13693 VArh	4 byte
115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132	b6 06 00 00 00 00 06 00 00 35 7d 06 00 25	0 0 0 6 0 53 125 6 0 37				
115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130	b6 06 00 00 00 06 00 00 35 7d 06 00 25	0 0 0 6 0 53 125 6 0			2483394 VArh	