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

AMS-måler KAIFA Type: MA105H2E 1-fase

| Byte     | Hex  | Dec  | Asc  | Forklaring og     | Verdier    |     | Bytes  |
|----------|------|------|------|-------------------|------------|-----|--------|
|          |      | kode | kode | OBIS-enheter      | veruier    |     | Dycci  |
| ****     | nouc | nouc | nouc | ODID CHRCCCI      |            |     |        |
|          | 7e   | 126  |      | 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     |            |     | byte   |
| 6        | 10   | 16   |      | Control           |            |     | byte   |
| 7        | 5a   | 90   |      | HCS - Header Chec | ck Seq.    | 2   | byte   |
| 8        | 87   | 135  |      |                   |            |     |        |
| 9        | e6   | 230  |      | LLC - Dest. LSAP  |            |     | byte   |
| 10       | e7   | 231  |      | LLC - Source LSAI | ?          |     | byte   |
| 11       | 0.0  | 0    |      | LLC Quality       |            |     | byte   |
| 12       | 0f   | 15   |      | LLC - Information | 1          | 5   | byte   |
| 13       | 40   | 64   |      |                   |            |     |        |
| 14       | 0.0  | 0    |      |                   |            |     |        |
| 15       | 00   | 0    |      |                   |            |     |        |
| 16       | 00   | 0    |      |                   |            |     |        |
| 17       |      |      |      | String follow (CO | DSEM Date_ | Tim | e)     |
| 18<br>19 | 0c   | 12   |      | Num. of bytes in  | string is  |     |        |
| 20       | e5   | 229  |      | Year              | 2021       |     | byte   |
| 21       | 01   | 229  |      | Month             | 1          | -   | byte   |
| 22       | 1c   | 28   |      | Date              | 28         |     | byte   |
| 22       | 04   | 4    |      | Day number        | 4          | +   | byte   |
| 2.4      | 04   | 14   |      | Time              | 14         | 1   | byte   |
| 25       | 3b   | 59   |      | Minute            | 59         |     | byte   |
| 26       | 2a   | 42   |      | Second            | 42         | 1   | byte   |
| 27       | ff   | 255  |      | Hundr.0xff if not |            |     | byte   |
| 28       | 80   | 128  |      | Dev.0x8000 if not | spec.      | 2   | byte   |
| 29       | 00   | 0    |      | DEVIOROUGE II NO  | . upcc:    | _   | Dy cc. |
| 30       | 00   | 0    |      | Clock Status      |            | 1   | byte   |
| 31       | 02   | 2    |      | Start OBIS-part   |            |     | byte   |
| 32       | 01   | 1    |      | Num. of OBIS-unit | s is 1     | 1   | byte   |
| 33       | 0.6  | 6    |      | Start OBIS-unit 1 |            | 1   | byte   |
| 34       | 00   | ō    |      | Activ Power       | 4001 W     |     | bytes  |
| 35       | 00   | 0    |      |                   |            | Ė   | .,     |
| 36       | 0f   | 15   |      |                   |            | -   |        |
| 37       | al   | 161  |      |                   |            |     |        |
| 38       | 88   | 136  |      | FCS - Frame Check | Seq.       | 2   | bytes  |
| 39       | 50   | 80   |      |                   |            |     | -      |
|          | 7e   | 126  |      | Flag field - stor |            | 1   | byte   |

| Liste                                  | 2 -                        | - 10                 | seku        | nd                                     |                         |     |               |
|--|----------------------------|----------------------|-------------|--|-------------------------|-----|---------------|
| Byte<br>nr                             | Hex<br>kode                | Dec<br>kode          | Asc<br>kode | Forklaring og<br>OBIS-enheter          | Verdier                 | _   | Bytes         |
|  |                            |                      |             |  |                         | 1   | h t           |
| -1                                     | 7e<br>a0                   | 126<br>160           |             | Flag field - star<br>Frame format      | t                       | 2   | byte<br>bytes |
| 2                                      | 65                         | 101                  |             | Bytes in telegram<br>Destination adres | n: 101 (11 b            | it) |               |
| 3                                      | 01<br>02                   | 1<br>2               |             | Destination adres                      | ss                      | 2   | byte          |
| 5                                      | 01                         | 1                    |             | Source adress                          |                         | 1   | byte          |
| 6                                      | 10<br>f0                   | 16<br>240            |             | Control                                | k Seq.                  | 1 2 | byte          |
| 8                                      | 50<br>e6                   | 80                   |             |  | k Seq.                  | _   | byte          |
| 9                                      |                            | 230                  |             | LLC - Dest. LSAP                       |                         | 1   | bytes         |
| 10                                     | e7                         | 231                  |             | LLC - Source LSAI<br>LLC Quality       | ?                       | 1   | byte<br>byte  |
| 12                                     | 0 f                        | 15                   |             | LLC - Information                      | 1                       | 5   | bytes         |
| 13                                     | 40                         | 64                   |             |  |                         |     |               |
| 15                                     | 0.0                        | 0                    |             |  |                         |     |               |
| 16<br>17                               | 00                         | 9                    |             | 01                                     | anu n-i- m'             |     |               |
| 18                                     | 0g                         | 12                   |             | String follow (CO<br>Num. of bytes in  | string is 1             | me) |               |
| 19                                     | 07                         |                      |             | Year                                   | string is 1             | 2   | bytes         |
| 20                                     | e5<br>01                   | 229                  |             | Month                                  | 1                       | 1   | byte          |
| 22                                     | 1c<br>04                   | 28                   |             | Date                                   | 28                      | 1   | byte          |
| 2.4                                    | 04<br>0e                   | 4<br>14              |             | Day number                             | 4<br>14                 | 1   | byte          |
| 25                                     | 3b                         | 59                   |             | Minute                                 | 59                      | 1   | byte<br>byte  |
| 26                                     | 28                         | 40                   |             | Second                                 | 42                      | 1   | byte          |
| 27                                     | ff<br>80                   | 255<br>128           |             | Hundr.0xff if not<br>Dev.0x8000 if not | spec.                   | 1 2 | byte          |
| 29                                     | 0.0                        | 0                    |             |  | . spec.                 |     | bytes         |
| 30                                     | 00                         | 0                    |             | Clock Status                           |                         | 1   | byte          |
| 32                                     | 0.9                        | 9                    |             | Start OBIS-part<br>Num. of OBIS-unit   | s is 9                  |     |               |
| 33                                     | 09                         | 9                    |             | Start OBIS-unit 1                      |                         |     |               |
| 34                                     | 4h                         | 7<br>75              | v           | Antall etterfølg<br>OBIS-version       | gende tegn e<br>KFM 001 | r 7 |               |
| 36                                     | 46                         | 70                   | F           | OBIS-VELBION                           | KFH_001                 |     |               |
| 37                                     | 4d<br>5f                   | 77<br>95             | M           |  |                         |     |               |
| 38<br>39                               | 30                         | 95<br>48             | -           |  |                         |     |               |
| 40                                     | 30                         | 48                   | 0           |  |                         |     |               |
| 41                                     | 31                         | 49                   | 1           | Start OBIS-unit 2                      |                         |     |               |
| 43                                     | 10                         | 16                   |             | Num.of bytes 16<br>Meter ID            |                         |     |               |
| 44                                     | xx                         | ddd                  | a           | Meter ID                               |                         |     |               |
| 45                                     | XX                         | ddd                  | a           |  |                         | _   |               |
| 47                                     | xx                         | ddd                  | a           |  |                         |     |               |
| 48                                     | xx                         | ddd<br>ddd           | a           |  |                         |     |               |
| 49                                     | xx                         | ddd                  | a           |  |                         |     |               |
| 51                                     | xx                         | ddd                  | a           |  |                         |     |               |
| 52<br>53                               | xx                         | ddd<br>ddd           | a           |  |                         |     |               |
| 54                                     | XX                         | ddd                  | a           |  |                         |     |               |
| 55<br>56                               | xx                         | ddd<br>ddd           | a           |  |                         |     |               |
| 57                                     | xx                         | ddd                  | a<br>a      |  |                         |     |               |
| 57<br>58                               | xx                         | ddd                  | a           |  |                         |     |               |
| 59<br>60                               | 0.9                        | ddd                  | a           | Start OBIS-unit 3                      |                         | _   |               |
| 61                                     | 08                         | 8                    |             | Num of bytes 8                         |                         |     |               |
| 62<br>63                               | 4d<br>41                   | 77<br>65             | M<br>A      | Meter-type                             | MA105H2E                |     |               |
| 64                                     | 31                         | 49                   | A 1         |  |                         | _   |               |
| 65                                     | 30                         | 48                   | ō           |  |                         |     |               |
| 66<br>67                               | 35<br>48                   | 53<br>72             | 5<br>H      |  |                         |     |               |
| 68                                     | 32<br>45                   | 50                   | 2           |  |                         |     |               |
| 69                                     | 45                         | 69                   | E           | a                                      |                         |     |               |
| 70<br>71                               | 06                         | 6<br>0               | -           | Start OBIS-unit 4<br>Aktiv eff. pos    | 4004 W                  | 4   | bytes         |
| 72                                     | 00                         | 0<br>15              |             |  |                         | Ė   | .,            |
| 73<br>74                               | 0f<br>a4                   | 15                   |             |  |                         |     |               |
| 75                                     | 06                         | 164                  |             | Start OBIS-unit 5                      | 5                       |     |               |
| 76<br>77                               | 00                         | 0                    |             | Aktiv eff. neg                         | 0 W                     | 4   | bytes         |
| 77                                     | 00                         | 0                    | -           |  |                         | _   |               |
| 79                                     | 0.0                        | 0                    |             |  |                         | E   |               |
| 80                                     | 06                         | 6                    |             | Start OBIS-unit 6<br>Reaktiv eff. pos  | 0 VAr                   | _   | harter:       |
| 82                                     | 00                         | 0                    |             | Reaktiv eff. pos                       | 0 VAr                   | 4   | bytes         |
| 83                                     | 00                         | 0                    |             |  |                         |     |               |
| 84<br>85                               | 00                         | 0<br>6               |             | Start OBIS-unit 7                      |                         |     |               |
| 86                                     | 0.0                        | 0                    |             | Reaktiv eff. neg                       | 151 VAr                 | 4   | bytes         |
| 87                                     | 00                         | 0                    |             |  |                         |     |               |
| 88<br>89                               | 61                         | 97                   | -           |  |                         | -   |               |
| 90                                     | 06                         | 6                    |             | Start OBIS-unit 8                      |                         |     | _             |
| 91                                     | 00                         | 0                    |             | Strøm                                  | 17191 mA                | 4   | bytes         |
|  | 4.3                        | 67                   |             |  |                         | _   |               |
| 93                                     | 27                         | 39                   |             |  |                         |     |               |
| 93                                     | 06                         | 6<br>0               |             | Start OBIS-unit S<br>Spenning          | 2338 Vx10               | 4   | bytes         |
| 93                                     | 0.0                        |                      |             |  | 2330 VAIO               | -   | J, 168        |
| 93<br>94<br>95<br>96<br>97             | 00                         | 0                    |             |  |                         |     |               |
| 93<br>94<br>95<br>96<br>97<br>98       | 00<br>00                   | 9                    |             |  |                         |     |               |
| 93<br>94<br>95<br>96<br>97<br>98<br>99 | 00<br>00<br>09<br>22<br>99 | 0<br>9<br>34<br>153  |             | FCS - Frame Check                      | Seq.                    | 2   | bytes         |
| 93<br>94<br>95<br>96<br>97<br>98       | 00<br>00<br>09             | 9<br>34<br>153<br>93 |             | FCS - Frame Check                      | Seq.                    | 2   | bytes         |

| Byte<br>nr | e 3 -<br>Hex<br>kode | Dec        | ime<br>Asc<br>kode | Forklaring og<br>OBIS-enheter                  | Verdier              | Byte             |
|------------|----------------------|------------|--------------------|--|----------------------|------------------|
|            | 7e                   |            | nouc               | Flag field - start                             |                      | 1 byte           |
| 1          | a0                   | 160        |                    | Frame format                                   | F (11 1/1)           | 2 byte           |
| 2<br>3     | 87<br>01             | 135        |                    | Bytes in telegram: 13<br>Destination adress    | 5 (11 bit)           | 2 byte           |
| 4<br>5     | 02<br>01             | 2          |                    | Source adress                                  |                      | 1 byte           |
| 6          | 10<br>9e             | 16         |                    | Control<br>HCS - Header Check Se               | a a                  | 1 byte           |
| 8          | 6d                   | 109        |                    |  | ų.                   | ,                |
| 9<br>10    | e6<br>e7             | 230<br>231 |                    | LLC - Dest. LSAP<br>LLC - Source LSAP          |                      | 1 byte           |
| 11         | 00<br>0f             | 0<br>15    |                    | LLC Quality<br>LLC - Information               |                      | 1 byte<br>5 byte |
| 13         | 40                   | 64         |                    | BBC - INTOTHRACTOR                             |                      | 3 Dyce           |
| 14<br>15   | 00                   | 0          |                    |  |                      |                  |
| 16<br>17   | 00                   | 9          |                    | String follow (COSEM                           | Date Time)           |                  |
| 18         | 0c<br>07             | 12         |                    | Num. of bytes in stri                          | ng is 12             |                  |
| 2.0        | e5                   | 229        |                    | Year   | 2021                 | 2 byte           |
| 21         | 01<br>1c             | 28         |                    | Month<br>Date                                  | 1 28                 | 1 byte           |
| 23         | 04<br>0f             | 4<br>15    |                    | Day number<br>Time                             | 4                    | 1 byte           |
| 25         | 0.0                  | 0          |                    | Minute   | 59                   | 1 byte           |
| 26<br>27   | 0a<br>ff             | 10<br>255  |                    | Second<br>Hundr.0xff if not spe                | 42<br>.c.            | 1 byte           |
| 28<br>29   | 80                   | 128        |                    | Hundr.0xff if not spe<br>Dev.0x8000 if not spe | c.                   | 2 byte           |
| 30         | 0.0                  | 0          |                    | Clock Status                                   |                      | 1 byte           |
| 31         | 02<br>0e             | 2<br>14    |                    | Start OBIS-part<br>Num. of OBIS-units is       | 14                   |                  |
| 33         | 09                   | 9          |                    | Start OBIS-unit 1                              |                      |                  |
| 35         | 4b                   | 75         | K                  | Antall etterfølgende<br>OBIS-version           | tegn er 7<br>KFM_001 |                  |
| 36<br>37   | 46<br>4d             | 70<br>77   | F                  |  |                      |                  |
| 38         | 5f                   | 95         | 0                  |  |                      |                  |
| 40         | 30                   | 48         | 0                  |  |                      |                  |
| 41         | 31<br>09             | 49<br>9    | 1                  | Start OBIS-unit 2                              |                      |                  |
| 43         | 10                   | 16<br>ddd  |                    | Num.of bytes 16<br>Meter ID                    |                      |                  |
| 45         | xx                   | ddd        | a<br>a             | nergi in                                       |                      |                  |
| 46<br>47   | xx<br>xx             | ddd<br>ddd | a<br>a             |  |                      |                  |
| 48         | XX                   | ddd        | a                  |  |                      |                  |
| 50         | xx                   | ddd<br>ddd | a<br>a             |  |                      |                  |
| 51<br>52   | XX                   | ddd<br>ddd | a                  |  |                      |                  |
| 53<br>54   | xx                   | ddd        | a                  |  |                      |                  |
| 55         | xx                   | ddd        | a                  |  |                      |                  |
| 56<br>57   | XX<br>XX             | ddd<br>ddd | a<br>a             |  |                      |                  |
| 58<br>59   | xx<br>xx             | ddd        | a                  |  |                      |                  |
| 60         | 09                   | 9          | d                  | Start OBIS-unit 3                              |                      |                  |
| 61<br>62   | 08<br>4d             | 8<br>77    | M                  | Num.of bytes 8<br>Meter-type                   | MA105H2E             |                  |
| 63         | 41                   | 65         | A<br>1             |  |                      |                  |
| 65         | 30                   | 48         | 0                  |  |                      |                  |
| 66<br>67   | 35<br>48             | 53<br>72   | 5<br>H             |  |                      |                  |
| 68         | 32<br>45             | 50         | 2<br>E             |  |                      |                  |
| 7.0        | 06                   | 6          | - 5                | Start OBIS-unit 4<br>Aktiv eff. pos            |                      |                  |
| 71         | 00                   | 0          |                    | Aktiv eff. pos                                 | 4478 W               | 4 byte           |
| 73         | 11<br>7e             | 17<br>126  |                    |  |                      |                  |
| 75         | 06                   | 6          |                    | Start OBIS-unit 5                              |                      |                  |
| 76<br>77   | 00                   | 0          | L                  | Aktiv eff. neg                                 | 0 W                  | 4 byte           |
| 78<br>79   | 00                   | 0          |                    | -  |                      |                  |
| 80         | 06                   | 6          |                    | Start OBIS-unit 6                              | ,                    | 4 1              |
| 81<br>82   | 00                   | 0          | L                  | Reaktiv eff. pos                               | 0 VAr                | 4 byte           |
| 83         | 00                   | 0          |                    |  |                      |                  |
| 85         | 06                   | 6          |                    | Start OBIS-unit 7                              | 4.5                  |                  |
| 86<br>87   | 00                   | 0          | L                  | Reaktiv eff. neg                               | 97 VAr               | 4 byte           |
| 88         | 00<br>61             | 97         |                    | -  |                      |                  |
| 90         | 06                   | 6          |                    | Start OBIS-unit 8                              | 10000                | 4 1              |
| 91<br>92   | 00                   | 0          | H                  | Strøm  | 19233 mA             | 4 byte           |
| 93<br>94   | 4b<br>21             | 75<br>33   |                    |  |                      |                  |
| 95<br>96   | 06                   | 6          |                    | Start OBIS-unit 9                              | 2335 Vx10            | A L              |
| 97         | 0.0                  | 0          |                    | Spenning                                       | 2337 VX10            | 4 byte           |
| 98<br>99   | 09<br>1f             | 9<br>31    |                    |  |                      |                  |
| 100        | 09<br>0c             | 9          |                    | Start OBIS-enhet 10,<br>Antall etterfølgende   | tidstempling e       | energi           |
| 102        | 07                   | 7          |                    | År etteriølgende                               | 2021                 | 2 byte           |
| 103<br>104 | e5<br>01             | 229<br>1   |                    | Måned  | 1                    | 1 byt            |
| 105<br>106 | 1c                   | 28         |                    | Dato<br>Dag nr                                 | 28                   | 1 byt<br>1 byt   |
| 107        | 0f                   | 15         |                    | Time   | 15                   | 1 byt            |
| 108<br>109 | 00<br>0a             | 0<br>10    | L                  | Minutt<br>Sekund                               | 0<br>10              | 1 byt<br>1 byt   |
| 110<br>111 | ff<br>80             | 255<br>128 |                    |  |                      |                  |
| 112        | 00                   | 0          |                    |  |                      |                  |
| 113<br>114 | 00                   | 6          |                    | Start OBIS-enhet 11                            |                      |                  |
| 115        | 01                   | 1<br>211   |                    | Aktiv energi pos                               | 30619318 Wh          | 4 byte           |
| 116<br>117 | d3<br>36             | 54         |                    |  |                      |                  |
| 118<br>119 | b6<br>06             | 182<br>6   |                    | Start OBIS-enhet 12                            |                      |                  |
| 120        | 0.0                  | 0          |                    | Aktiv energi neg                               | 0 Wh                 | 4 byte           |
| 122        | 00                   | 0          | E                  |  |                      |                  |
| 123<br>124 | 00                   | 0          |                    | Start OBIS-enhet 13                            |                      |                  |
| 125        | 0.0                  | 0          |                    | Start OBIS-enhet 13<br>Reaktiv "energi" pos    | 13693 VArh           | 4 byte           |
| 126<br>127 | 00<br>35             | 0<br>53    |                    |  |                      |                  |
| 128<br>129 | 7d<br>06             | 125<br>6   |                    | Start OBIS-enhet 14                            |                      |                  |
| 130        | 0.0                  | 0          |                    | Reaktiv "energi" neg                           | 2483394 VArh         | 4 byte           |
| 131        | 25<br>e4             | 37<br>228  |                    |  |                      |                  |
| 132        |                      | 194        |                    |  |                      |                  |
| 132<br>133 | C2                   |            | _                  | PCS - Frama Chash a-                           |                      | 2 h              |
| 132        | c2<br>c2<br>d6<br>7e | 194        |                    | FCS - Frame Check Seq<br>Flag field - stop     |                      | 2 byte           |