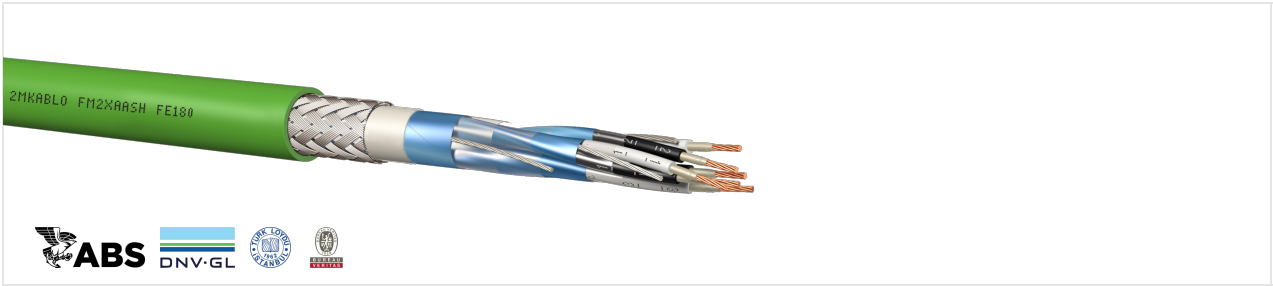


# FM2XAASH FE180



## Areas of Use

Used for communication and instrumentation purpose in electronic systems of marine vehicles. Screening layer protects the transmitting signal against electromagnetic interferences. Halogen-Free and Flame Retardant construction ensure non-corrosive and highly visible environment during a fire. Also, min.180 minutes of circuit integrity under fire conditions is achieved by its special design.

## Cable Construction

|                     |                                                                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------|
| Conductor           | Stranded Annealed Copper (IEC/EN 60228, Class 2) (tinned copper and/or Class 5 versions are available upon request) |
| Flame Barrier       | Mica Tape                                                                                                           |
| Insulation          | XLPE (IEC 60092-360)                                                                                                |
| Core Colors         | Pair: Black / White, Numbered Quad: Black / White / Red / Blue, Numbered                                            |
| 1. Separator        | PET Foil                                                                                                            |
| Individual Screen   | Al-PET Foil (with Tinned Copper Drain Wire)                                                                         |
| 2. Separator        | PET Foil                                                                                                            |
| Lay-up              | Shielded pairs / triples are stranded in layers                                                                     |
| Separator           | PET Foil                                                                                                            |
| 1. Overall Screen   | Al-PET Foil (with Tinned Copper Drain Wire)                                                                         |
| Inner Sheath        | HFFR                                                                                                                |
| 2. Overall Screen   | Galvanised Steel Wire Braid                                                                                         |
| Outer Sheath        | HFFR (IEC 60092-360 SHF1), RAL 6018 - Green                                                                         |
| Reference Standards | IEC 60092-376                                                                                                       |

## Technical Properties

|                             |                                             |
|-----------------------------|---------------------------------------------|
| Operating Voltage           | 150/250 (300) V                             |
| Test Voltage                | 1.5 kV (a.c) 3.6 kV (d.c)                   |
| Conductor Resistance        | IEC/EN 60228                                |
| Insulation Resistance       | >5000 M.Ωxkm                                |
| Temperature Range           | -40 °C.....+90 °C                           |
| Flame Retardancy            | IEC/EN 60332-1-2, IEC/EN 60332-3-22 (CAT A) |
| Fire Resistance             | IEC 60331-21                                |
| Smoke Density               | IEC/EN 61034-1+2                            |
| Amount of Halogen Acid Gas  | IEC/EN 60754-1                              |
| Corrosive Gases Measurement | IEC/EN 60754-2                              |
| Min. Bending Radius (Fixed) | 8 x Cable Diameter                          |

## Cross Section

| Configuration / Cross-Section<br>(mm/mm²) | Cable Diameter (mm) (± 5%) | Copper Weight (kg / km) | ~ Cable Weight (kg / km) |
|-------------------------------------------|----------------------------|-------------------------|--------------------------|
| 2x2x0.5                                   | 12.9                       | 29                      | 191                      |
| 2x2x0.5                                   | 12,9                       | 29                      | 191                      |
| 2x3x0.5                                   | 14.1                       | 38                      | 227                      |
| 2x3x0.5                                   | 14,1                       | 38                      | 227                      |
| 2x4x0.5                                   | 16.3                       | 48                      | 279                      |
| 2x4x0.5                                   | 16,3                       | 48                      | 279                      |
| 3x2x0.5                                   | 13.7                       | 42                      | 228                      |
| 3x2x0.5                                   | 13,7                       | 42                      | 228                      |
| 3x3x0.5                                   | 14.9                       | 56                      | 275                      |
| 3x3x0.5                                   | 14,9                       | 56                      | 275                      |
| 3x4x0.5                                   | 17.3                       | 70                      | 341                      |
| 3x4x0.5                                   | 17,3                       | 70                      | 341                      |
| 4x2x0.5                                   | 15.0                       | 54                      | 270                      |
| 4x2x0.5                                   | 15,0                       | 54                      | 270                      |
| 4x3x0.5                                   | 16.3                       | 73                      | 331                      |
| 4x3x0.5                                   | 16,3                       | 73                      | 331                      |
| 4x4x0.5                                   | 19.0                       | 92                      | 412                      |
| 4x4x0.5                                   | 19,0                       | 92                      | 412                      |
| 5x2x0.5                                   | 16.3                       | 67                      | 316                      |
| 5x2x0.5                                   | 16,3                       | 67                      | 316                      |
| 5x3x0.5                                   | 17.9                       | 91                      | 391                      |
| 5x3x0.5                                   | 17,9                       | 91                      | 391                      |
| 5x4x0.5                                   | 20.8                       | 115                     | 487                      |
| 5x4x0.5                                   | 20,8                       | 115                     | 487                      |
| 7x2x0.5                                   | 17.8                       | 93                      | 389                      |
| 7x2x0.5                                   | 17,8                       | 93                      | 389                      |
| 7x3x0.5                                   | 19.5                       | 126                     | 487                      |
| 7x3x0.5                                   | 19,5                       | 126                     | 487                      |
| 7x4x0.5                                   | 22.8                       | 159                     | 612                      |
| 7x4x0.5                                   | 22,8                       | 159                     | 612                      |
| 10x2x0.5                                  | 22.6                       | 131                     | 542                      |
| 10x2x0.5                                  | 22,6                       | 131                     | 542                      |
| 10x3x0.5                                  | 24.9                       | 179                     | 685                      |
| 10x3x0.5                                  | 24,9                       | 179                     | 685                      |
| 12x2x0.5                                  | 23.3                       | 157                     | 606                      |
| 12x2x0.5                                  | 23,3                       | 157                     | 606                      |
| 16x2x0.5                                  | 26.0                       | 208                     | 754                      |
| 16x2x0.5                                  | 26,0                       | 208                     | 754                      |
| 19x2x0.5                                  | 27.5                       | 246                     | 856                      |
| 19x2x0.5                                  | 27,5                       | 246                     | 856                      |
| 24x2x0.5                                  | 32.3                       | 310                     | 1079                     |
| 24x2x0.5                                  | 32,3                       | 310                     | 1079                     |
| 27x2x0.5                                  | 33.0                       | 348                     | 1167                     |
| 27x2x0.5                                  | 33,0                       | 348                     | 1167                     |
| 37x2x0.5                                  | 37.1                       | 476                     | 1503                     |

|           |      |     |      |
|-----------|------|-----|------|
| 37x2x0.5  | 37,1 | 476 | 1503 |
| 2x2x0.75  | 14.5 | 43  | 234  |
| 2x2x0.75  | 14,5 | 43  | 234  |
| 2x3x0.75  | 15.9 | 58  | 285  |
| 2x3x0.75  | 15,9 | 58  | 285  |
| 2x4x0.75  | 18.4 | 72  | 351  |
| 2x4x0.75  | 18,4 | 72  | 351  |
| 3x2x0.75  | 15.3 | 62  | 283  |
| 3x2x0.75  | 15,3 | 62  | 283  |
| 3x3x0.75  | 16.9 | 84  | 350  |
| 3x3x0.75  | 16,9 | 84  | 350  |
| 3x4x0.75  | 19.6 | 106 | 433  |
| 3x4x0.75  | 19,6 | 106 | 433  |
| 4x2x0.75  | 16.8 | 82  | 340  |
| 4x2x0.75  | 16,8 | 82  | 340  |
| 4x3x0.75  | 18.6 | 110 | 425  |
| 4x3x0.75  | 18,6 | 110 | 425  |
| 4x4x0.75  | 21.5 | 139 | 529  |
| 4x4x0.75  | 21,5 | 139 | 529  |
| 5x2x0.75  | 18.3 | 101 | 399  |
| 5x2x0.75  | 18,3 | 101 | 399  |
| 5x3x0.75  | 20.4 | 137 | 503  |
| 5x3x0.75  | 20,4 | 137 | 503  |
| 5x4x0.75  | 23.7 | 173 | 629  |
| 5x4x0.75  | 23,7 | 173 | 629  |
| 7x2x0.75  | 20.0 | 139 | 497  |
| 7x2x0.75  | 20,0 | 139 | 497  |
| 7x3x0.75  | 22.2 | 190 | 633  |
| 7x3x0.75  | 22,2 | 190 | 633  |
| 7x4x0.75  | 26.0 | 240 | 797  |
| 7x4x0.75  | 26,0 | 240 | 797  |
| 10x2x0.75 | 25.7 | 197 | 699  |
| 10x2x0.75 | 25,7 | 197 | 699  |
| 10x3x0.75 | 28.6 | 269 | 898  |
| 10x3x0.75 | 28,6 | 269 | 898  |
| 12x2x0.75 | 26.5 | 235 | 786  |
| 12x2x0.75 | 26,5 | 235 | 786  |
| 16x2x0.75 | 29.5 | 312 | 984  |
| 16x2x0.75 | 29,5 | 312 | 984  |
| 19x2x0.75 | 31.2 | 369 | 1123 |
| 19x2x0.75 | 31,2 | 369 | 1123 |
| 24x2x0.75 | 36.9 | 465 | 1419 |
| 24x2x0.75 | 36,9 | 465 | 1419 |
| 27x2x0.75 | 37.7 | 523 | 1542 |
| 27x2x0.75 | 37,7 | 523 | 1542 |
| 37x2x0.75 | 42.9 | 715 | 2084 |
|           |      |     |      |

|           |      |     |      |
|-----------|------|-----|------|
| 37x2x0.75 | 42,9 | 715 | 2084 |
| 2x2x1     | 15.0 | 61  | 263  |
| 2x2x1     | 15,0 | 61  | 263  |
| 2x3x1     | 16.7 | 80  | 324  |
| 2x3x1     | 16,7 | 80  | 324  |
| 2x4x1     | 19.3 | 100 | 398  |
| 2x4x1     | 19,3 | 100 | 398  |
| 3x2x1     | 16.0 | 87  | 323  |
| 3x2x1     | 16,0 | 87  | 323  |
| 3x3x1     | 17.8 | 117 | 402  |
| 3x3x1     | 17,8 | 117 | 402  |
| 3x4x1     | 20.6 | 146 | 498  |
| 3x4x1     | 20,6 | 146 | 498  |
| 4x2x1     | 17.5 | 114 | 390  |
| 4x2x1     | 17,5 | 114 | 390  |
| 4x3x1     | 19.5 | 153 | 490  |
| 4x3x1     | 19,5 | 153 | 490  |
| 4x4x1     | 22.6 | 192 | 611  |
| 4x4x1     | 22,6 | 192 | 611  |
| 5x2x1     | 19.2 | 141 | 461  |
| 5x2x1     | 19,2 | 141 | 461  |
| 5x3x1     | 21.4 | 189 | 584  |
| 5x3x1     | 21,4 | 189 | 584  |
| 5x4x1     | 24.9 | 238 | 730  |
| 5x4x1     | 24,9 | 238 | 730  |
| 7x2x1     | 20.9 | 194 | 577  |
| 7x2x1     | 20,9 | 194 | 577  |
| 7x3x1     | 23.5 | 262 | 741  |
| 7x3x1     | 23,5 | 262 | 741  |
| 7x4x1     | 27.3 | 330 | 932  |
| 7x4x1     | 27,3 | 330 | 932  |
| 10x2x1    | 26.8 | 274 | 815  |
| 10x2x1    | 26,8 | 274 | 815  |
| 10x3x1    | 30.2 | 372 | 1049 |
| 10x3x1    | 30,2 | 372 | 1049 |
| 12x2x1    | 27.7 | 328 | 920  |
| 12x2x1    | 27,7 | 328 | 920  |
| 16x2x1    | 30.9 | 435 | 1158 |
| 16x2x1    | 30,9 | 435 | 1158 |
| 19x2x1    | 32.7 | 515 | 1332 |
| 19x2x1    | 32,7 | 515 | 1332 |
| 24x2x1    | 38.6 | 648 | 1672 |
| 24x2x1    | 38,6 | 648 | 1672 |
| 27x2x1    | 39.5 | 728 | 1823 |
| 27x2x1    | 39,5 | 728 | 1823 |
| 37x2x1    | 44.9 | 996 | 2477 |
|           |      |     |      |

|          |      |      |      |
|----------|------|------|------|
| 37x2x1   | 44,9 | 996  | 2477 |
| 2x2x1.5  | 17.0 | 79   | 324  |
| 2x2x1.5  | 17,0 | 79   | 324  |
| 2x3x1.5  | 18.7 | 107  | 400  |
| 2x3x1.5  | 18,7 | 107  | 400  |
| 2x4x1.5  | 21.7 | 136  | 498  |
| 2x4x1.5  | 21,7 | 136  | 498  |
| 3x2x1.5  | 18.0 | 114  | 398  |
| 3x2x1.5  | 18,0 | 114  | 398  |
| 3x3x1.5  | 20.0 | 157  | 503  |
| 3x3x1.5  | 20,0 | 157  | 503  |
| 3x4x1.5  | 23.1 | 200  | 628  |
| 3x4x1.5  | 23,1 | 200  | 628  |
| 4x2x1.5  | 19.9 | 150  | 485  |
| 4x2x1.5  | 19,9 | 150  | 485  |
| 4x3x1.5  | 22.0 | 207  | 618  |
| 4x3x1.5  | 22,0 | 207  | 618  |
| 4x4x1.5  | 25.5 | 264  | 779  |
| 4x4x1.5  | 25,5 | 264  | 779  |
| 5x2x1.5  | 21.8 | 186  | 575  |
| 5x2x1.5  | 21,8 | 186  | 575  |
| 5x3x1.5  | 24.2 | 257  | 739  |
| 5x3x1.5  | 24,2 | 257  | 739  |
| 5x4x1.5  | 28.1 | 328  | 933  |
| 5x4x1.5  | 28,1 | 328  | 933  |
| 7x2x1.5  | 23.8 | 257  | 727  |
| 7x2x1.5  | 23,8 | 257  | 727  |
| 7x3x1.5  | 26.5 | 357  | 945  |
| 7x3x1.5  | 26,5 | 357  | 945  |
| 7x4x1.5  | 30.9 | 457  | 1201 |
| 7x4x1.5  | 30,9 | 457  | 1201 |
| 10x2x1.5 | 30.7 | 364  | 1032 |
| 10x2x1.5 | 30,7 | 364  | 1032 |
| 10x3x1.5 | 34.2 | 507  | 1350 |
| 10x3x1.5 | 34,2 | 507  | 1350 |
| 12x2x1.5 | 31.7 | 436  | 1167 |
| 12x2x1.5 | 31,7 | 436  | 1167 |
| 16x2x1.5 | 35.5 | 579  | 1479 |
| 16x2x1.5 | 35,5 | 579  | 1479 |
| 19x2x1.5 | 37.5 | 686  | 1696 |
| 19x2x1.5 | 37,5 | 686  | 1696 |
| 24x2x1.5 | 44.8 | 864  | 2239 |
| 24x2x1.5 | 44,8 | 864  | 2239 |
| 27x2x1.5 | 45.8 | 971  | 2439 |
| 27x2x1.5 | 45,8 | 971  | 2439 |
| 37x2x1.5 | 51.6 | 1329 | 3183 |
|          |      |      |      |

|          |      |      |      |
|----------|------|------|------|
| 37x2x1.5 | 51,6 | 1329 | 3183 |
| 2x2x2.5  | 18.5 | 117  | 395  |
| 2x2x2.5  | 18,5 | 117  | 395  |
| 2x3x2.5  | 20.5 | 163  | 498  |
| 2x3x2.5  | 20,5 | 163  | 498  |
| 2x4x2.5  | 23.8 | 209  | 623  |
| 2x4x2.5  | 23,8 | 209  | 623  |
| 3x2x2.5  | 19.7 | 171  | 494  |
| 3x2x2.5  | 19,7 | 171  | 494  |
| 3x3x2.5  | 21.9 | 240  | 636  |
| 3x3x2.5  | 21,9 | 240  | 636  |
| 3x4x2.5  | 25.4 | 309  | 802  |
| 3x4x2.5  | 25,4 | 309  | 802  |
| 4x2x2.5  | 21.7 | 226  | 609  |
| 4x2x2.5  | 21,7 | 226  | 609  |
| 4x3x2.5  | 24.2 | 317  | 791  |
| 4x3x2.5  | 24,2 | 317  | 791  |
| 4x4x2.5  | 28.1 | 409  | 1002 |
| 4x4x2.5  | 28,1 | 409  | 1002 |
| 5x2x2.5  | 23.8 | 280  | 727  |
| 5x2x2.5  | 23,8 | 280  | 727  |
| 5x3x2.5  | 26.6 | 395  | 951  |
| 5x3x2.5  | 26,6 | 395  | 951  |
| 5x4x2.5  | 31.0 | 509  | 1207 |
| 5x4x2.5  | 31,0 | 509  | 1207 |
| 7x2x2.5  | 26.1 | 389  | 928  |
| 7x2x2.5  | 26,1 | 389  | 928  |
| 7x3x2.5  | 29.2 | 549  | 1229 |
| 7x3x2.5  | 29,2 | 549  | 1229 |
| 7x4x2.5  | 34.1 | 710  | 1574 |
| 7x4x2.5  | 34,1 | 710  | 1574 |
| 10x2x2.5 | 33.7 | 552  | 1327 |
| 10x2x2.5 | 33,7 | 552  | 1327 |
| 10x3x2.5 | 37.9 | 781  | 1760 |
| 10x3x2.5 | 37,9 | 781  | 1760 |
| 12x2x2.5 | 35.0 | 660  | 1514 |
| 12x2x2.5 | 35,0 | 660  | 1514 |
| 16x2x2.5 | 39.0 | 877  | 1920 |
| 16x2x2.5 | 39,0 | 877  | 1920 |
| 19x2x2.5 | 41.8 | 1040 | 2303 |
| 19x2x2.5 | 41,8 | 1040 | 2303 |
| 24x2x2.5 | 49.4 | 1312 | 2911 |
| 24x2x2.5 | 49,4 | 1312 | 2911 |
| 27x2x2.5 | 50.6 | 1475 | 3185 |
| 27x2x2.5 | 50,6 | 1475 | 3185 |
| 37x2x2.5 | 57.0 | 2018 | 4181 |
|          |      |      |      |

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