



Marine &amp; Offshore

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**TYPE APPROVAL CERTIFICATE***This certificate is issued to***Schneider Electric Power Drives GmbH**  
VIENNA - AUSTRIA*for the type of product***FREQUENCY CONVERTERS (Power 50kW and over)**  
APM Marine  
(Altivar Process Modular)**Requirements:**Bureau Veritas Rules for the Classification of Steel Ships  
EC Code: 31*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.***This certificate will expire on: 23 Mar 2026**For Bureau Veritas Marine & Offshore,  
At BV HAMBURG, on 23 Mar 2021,  
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## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

The Altivar Process Modular Marine series are modular, low voltage, adjustable speed basic drive modules and auxiliaries for integration in a complete single power drive system assembled by trained and registered drive integration partners of Schneider Electric Power Drives GmbH.

The low harmonic/regenerative drive modules are 3-level active infeed converters capable of four quadrant operation.

The drive modules can be either equipped with ATV600 or ATV900 control units. The ATV900 control units enable a 180% overload torque, provide enhanced control functions, additional integrated I/O's and communication interfaces. Both control units have two redundant digital inputs used to trigger a IEC 61800-5-2 safe-torque-off safety sub-function.

Both versions can be set to a 'heavy duty' mode, allowing for a 150%/60sec transient current in a 10min period with the motor power one rating less than the nominal power.

Firmware versions ATV600: NERA V2.5 / ATV900: FORTIS V.2.2.

#### 1.1 Standard single drive power modules 400V

Rated system voltage ULN:

3-phase 400V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)                        |
|------------------|-----------------------------|---|
| ATVxA0C11Q4      | ILN*: 198A                  | IdN**: 211A / IdM***: :232A / 253A / PdN****: 110kW |
| ATVxA0C13Q4      | ILN: 233A                   | IdN: 250A / IdM: :275A / 300A / PdN: 132kW          |
| ATVxA0C16Q4      | ILN: 278A                   | IdN: 302A / IdM: :332A / 362A / PdN: 160kW          |
| ATVxA0C20Q4      | ILN: 352A                   | IdN: 370A / IdM: :407A / 444A / PdN: 200kW          |
| ATVxA0C25Q4      | ILN: 432A                   | IdN: 477A / IdM: :525A / 572A / PdN: 250kW          |
| ATVxA0C31Q4      | ILN: 538A                   | IdN: 590A / IdM: :649A / 708A / PdN: 315kW          |
| ATVxA0C35Q4      | ILN: 611A                   | IdN: 660A / IdM: :726A / 792A / PdN: 355kW          |
| ATVxA0C40Q4      | ILN: 681A                   | IdN: 730A / IdM: :803A / 876A / PdN: 400kW          |
| ATVxA0C45Q4      | ILN: 764A                   | IdN: 830A / IdM: :913A / 996A / PdN: 450kW          |
| ATVxA0C50Q4      | ILN: 846A                   | IdN: 900A / IdM: :990A / 1080A / PdN: 500kW         |
| ATVxA0C56Q4      | ILN: 948A                   | IdN: 1020A / IdM: :1122A / 1224A / PdN: 560kW       |
| ATVxA0C63Q4      | ILN: 1058A                  | IdN: 1140A / IdM: :1254A / 1368A / PdN: 630kW       |
| ATVxA0C71Q4      | ILN: 1192A                  | IdN: 1260A / IdM: :1386A / 1512A / PdN: 710kW       |
| ATVxA0C80Q4      | ILN: 1335A                  | IdN: 1420A / IdM: :1562A / 1704A / PdN: 800kW       |

#### 1.2 Standard single drive power modules 440V

Rated system voltage ULN:

3-phase 440V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)                  |
|------------------|-----------------------------|---|
| ATVxA0C11R4      | ILN: 183A                   | IdN: 211A / IdM: :232A / 253A / PdN: 110kW    |
| ATVxA0C13R4      | ILN: 214A                   | IdN: 250A / IdM: :275A / 300A / PdN: 132kW    |
| ATVxA0C16R4      | ILN: 255A                   | IdN: 302A / IdM: :332A / 362A / PdN: 160kW    |
| ATVxA0C20R4      | ILN: 325A                   | IdN: 370A / IdM: :407A / 444A / PdN: 200kW    |
| ATVxA0C25R4      | ILN: 396A                   | IdN: 477A / IdM: :525A / 572A / PdN: 250kW    |
| ATVxA0C31R4      | ILN: 493A                   | IdN: 590A / IdM: :649A / 708A / PdN: 315kW    |
| ATVxA0C35R4      | ILN: 559A                   | IdN: 660A / IdM: :726A / 792A / PdN: 355kW    |
| ATVxA0C40R4      | ILN: 623A                   | IdN: 730A / IdM: :803A / 876A / PdN: 400kW    |
| ATVxA0C45R4      | ILN: 697A                   | IdN: 830A / IdM: :913A / 996A / PdN: 450kW    |
| ATVxA0C50R4      | ILN: 771A                   | IdN: 900A / IdM: :990A / 1080A / PdN: 500kW   |
| ATVxA0C56R4      | ILN: 865A                   | IdN: 1020A / IdM: :1122A / 1224A / PdN: 560kW |
| ATVxA0C63R4      | ILN: 965A                   | IdN: 1140A / IdM: :1254A / 1368A / PdN: 630kW |
| ATVxA0C71R4      | ILN: 1087A                  | IdN: 1260A / IdM: :1386A / 1512A / PdN: 710kW |
| ATVxA0C80R4      | ILN: 1216A                  | IdN: 1420A / IdM: :1562A / 1704A / PdN: 800kW |



1.3 Standard single drive power modules 480VRated system voltage U<sub>LN</sub>:

3-phase 480V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)  |
|------------------|-----------------------------|---|
| ATVxA0C11T4      | ILN: 168A                   | I <sub>dN</sub> : 211A / I <sub>dM</sub> : :232A / 253A / P <sub>dN</sub> : 150HP     |
| ATVxA0C13T4      | ILN: 218A                   | I <sub>dN</sub> : 250A / I <sub>dM</sub> : :275A / 300A / P <sub>dN</sub> : 200HP     |
| ATVxA0C16T4      | ILN: 268A                   | I <sub>dN</sub> : 302A / I <sub>dM</sub> : :332A / 362A / P <sub>dN</sub> : 250HP     |
| ATVxA0C20T4      | ILN: 328A                   | I <sub>dN</sub> : 370A / I <sub>dM</sub> : :407A / 444A / P <sub>dN</sub> : 300HP     |
| ATVxA0C25T4      | ILN: 427A                   | I <sub>dN</sub> : 477A / I <sub>dM</sub> : :525A / 572A / P <sub>dN</sub> : 400HP     |
| ATVxA0C31T4      | ILN: 528A                   | I <sub>dN</sub> : 590A / I <sub>dM</sub> : :649A / 708A / P <sub>dN</sub> : 500HP     |
| ATVxA0C35T4      | ILN: 586A                   | I <sub>dN</sub> : 660A / I <sub>dM</sub> : :726A / 792A / P <sub>dN</sub> : 550HP     |
| ATVxA0C40T4      | ILN: 634A                   | I <sub>dN</sub> : 730A / I <sub>dM</sub> : :803A / 876A / P <sub>dN</sub> : 600HP     |
| ATVxA0C45T4      | ILN: 685A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 650HP     |
| ATVxA0C50T4      | ILN: 736A                   | I <sub>dN</sub> : 900A / I <sub>dM</sub> : :990A / 1080A / P <sub>dN</sub> : 700HP    |
| ATVxA0C56T4      | ILN: 842A                   | I <sub>dN</sub> : 1020A / I <sub>dM</sub> : :1122A / 1224A / P <sub>dN</sub> : 800HP  |
| ATVxA0C63T4      | ILN: 939A                   | I <sub>dN</sub> : 1140A / I <sub>dM</sub> : :1254A / 1368A / P <sub>dN</sub> : 900HP  |
| ATVxA0C71T4      | ILN: 1044A                  | I <sub>dN</sub> : 1260A / I <sub>dM</sub> : :1386A / 1512A / P <sub>dN</sub> : 1000HP |
| ATVxA0C80T4      | ILN: 1146A                  | I <sub>dN</sub> : 1420A / I <sub>dM</sub> : :1562A / 1704A / P <sub>dN</sub> : 1100HP |

1.4 Standard single drive power modules 500VRated system voltage U<sub>LN</sub>:

3-phase 500V (-10%~+15%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)   |
|------------------|-----------------------------|--|
| ATVxA0C11N6      | ILN: 110A                   | I <sub>dN</sub> : 125A / I <sub>dM</sub> : :138A / 150A / P <sub>dN</sub> : 75kW     |
| ATVxA0C13N6      | ILN: 129A                   | I <sub>dN</sub> : 145A / I <sub>dM</sub> : :160A / 174A / P <sub>dN</sub> : 90kW     |
| ATVxA0C16N6      | ILN: 154A                   | I <sub>dN</sub> : 175A / I <sub>dM</sub> : :193A / 210A / P <sub>dN</sub> : 110kW    |
| ATVxA0C20N6      | ILN: 183A                   | I <sub>dN</sub> : 215A / I <sub>dM</sub> : :237A / 258A / P <sub>dN</sub> : 132kW    |
| ATVxA0C25N6      | ILN: 225A                   | I <sub>dN</sub> : 275A / I <sub>dM</sub> : :303A / 330A / P <sub>dN</sub> : 160kW    |
| ATVxA0C31N6      | ILN: 303A                   | I <sub>dN</sub> : 340A / I <sub>dM</sub> : :374A / 408A / P <sub>dN</sub> : 220kW    |
| ATVxA0C40N6      | ILN: 380A                   | I <sub>dN</sub> : 425A / I <sub>dM</sub> : :468A / 510A / P <sub>dN</sub> : 280kW    |
| ATVxA0C50N6      | ILN: 484A                   | I <sub>dN</sub> : 520A / I <sub>dM</sub> : :572A / 624A / P <sub>dN</sub> : 355kW    |
| ATVxA0C63N6      | ILN: 607A                   | I <sub>dN</sub> : 650A / I <sub>dM</sub> : :715A / 780A / P <sub>dN</sub> : 450kW    |
| ATVxA0C80N6      | ILN: 756A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 560kW    |
| ATVxA0M10N6      | ILN: 954A                   | I <sub>dN</sub> : 1030A / I <sub>dM</sub> : :1133A / 1236A / P <sub>dN</sub> : 710kW |
| ATVxA0M12N6      | ILN: 1070A                  | I <sub>dN</sub> : 1230A / I <sub>dM</sub> : :1353A / 1476A / P <sub>dN</sub> : 800kW |

1.5 Standard single drive power modules 600VRated system voltage U<sub>LN</sub>:

3-phase 600V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)  |
|------------------|-----------------------------|---|
| ATVxA0C11T6      | ILN: 112A                   | I <sub>dN</sub> : 125A / I <sub>dM</sub> : :138A / 150A / P <sub>dN</sub> : 125HP     |
| ATVxA0C13T6      | ILN: 131A                   | I <sub>dN</sub> : 145A / I <sub>dM</sub> : :160A / 174A / P <sub>dN</sub> : 150HP     |
| ATVxA0C16T6      | ILN: 152A                   | I <sub>dN</sub> : 175A / I <sub>dM</sub> : :193A / 210A / P <sub>dN</sub> : 175HP     |
| ATVxA0C20T6      | ILN: 172A                   | I <sub>dN</sub> : 215A / I <sub>dM</sub> : :237A / 258A / P <sub>dN</sub> : 200HP     |
| ATVxA0C25T6      | ILN: 218A                   | I <sub>dN</sub> : 275A / I <sub>dM</sub> : :303A / 330A / P <sub>dN</sub> : 250HP     |
| ATVxA0C31T6      | ILN: 298A                   | I <sub>dN</sub> : 340A / I <sub>dM</sub> : :374A / 408A / P <sub>dN</sub> : 350HP     |
| ATVxA0C40T6      | ILN: 379A                   | I <sub>dN</sub> : 425A / I <sub>dM</sub> : :468A / 510A / P <sub>dN</sub> : 450HP     |
| ATVxA0C50T6      | ILN: 464A                   | I <sub>dN</sub> : 520A / I <sub>dM</sub> : :572A / 624A / P <sub>dN</sub> : 550HP     |
| ATVxA0C63T6      | ILN: 544A                   | I <sub>dN</sub> : 650A / I <sub>dM</sub> : :715A / 780A / P <sub>dN</sub> : 650HP     |
| ATVxA0C80T6      | ILN: 670A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 800HP     |
| ATVxA0M10T6      | ILN: 833A                   | I <sub>dN</sub> : 1030A / I <sub>dM</sub> : :1133A / 1236A / P <sub>dN</sub> : 1000HP |
| ATVxA0M12T6      | ILN: 994A                   | I <sub>dN</sub> : 1230A / I <sub>dM</sub> : :1353A / 1476A / P <sub>dN</sub> : 1200HP |



1.6 Standard single drive power modules 690V

Rated system voltage ULN:

3-phase 690V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)                   |
|------------------|-----------------------------|--|
| ATVxA0C11Q6      | ILN: 118A                   | IdN: 125A / IdM: :138A / 150A / PdN: 110kW     |
| ATVxA0C13Q6      | ILN: 138A                   | IdN: 145A / IdM: :160A / 174A / PdN: 132kW     |
| ATVxA0C16Q6      | ILN: 163A                   | IdN: 175A / IdM: :193A / 210A / PdN: 160kW     |
| ATVxA0C20Q6      | ILN: 200A                   | IdN: 215A / IdM: :237A / 258A / PdN: 200kW     |
| ATVxA0C25Q6      | ILN: 255A                   | IdN: 275A / IdM: :303A / 330A / PdN: 250kW     |
| ATVxA0C31Q6      | ILN: 316A                   | IdN: 340A / IdM: :374A / 408A / PdN: 315kW     |
| ATVxA0C40Q6      | ILN: 394A                   | IdN: 425A / IdM: :468A / 510A / PdN: 400kW     |
| ATVxA0C50Q6      | ILN: 495A                   | IdN: 520A / IdM: :572A / 624A / PdN: 500kW     |
| ATVxA0C63Q6      | ILN: 615A                   | IdN: 650A / IdM: :715A / 780A / PdN: 630kW     |
| ATVxA0C80Q6      | ILN: 776A                   | IdN: 830A / IdM: :913A / 996A / PdN: 800kW     |
| ATVxA0M10Q6      | ILN: 969A                   | IdN: 1030A / IdM: :1133A / 1236A / PdN: 1000kW |
| ATVxA0M12Q6      | ILN: 1161A                  | IdN: 1230A / IdM: :1353A / 1476A / PdN: 1200kW |

1.7 Low harmonic / regenerative single drive power modules 400V

Rated system voltage ULN:

3-phase 400V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)                  |
|------------------|-----------------------------|---|
| ATVxB0C11Q4      | ILN: 175A                   | IdN: 211A / IdM: :232A / 253A / PdN: 110kW    |
| ATVxB0C13Q4      | ILN: 208A                   | IdN: 250A / IdM: :275A / 300A / PdN: 132kW    |
| ATVxB0C16Q4      | ILN: 252A                   | IdN: 302A / IdM: :332A / 362A / PdN: 160kW    |
| ATVxB0C20Q4      | ILN: 313A                   | IdN: 370A / IdM: :407A / 444A / PdN: 200kW    |
| ATVxB0C25Q4      | ILN: 389A                   | IdN: 477A / IdM: :525A / 572A / PdN: 250kW    |
| ATVxB0C31Q4      | ILN: 491A                   | IdN: 590A / IdM: :649A / 708A / PdN: 315kW    |
| ATVxB0C35Q4      | ILN: 553A                   | IdN: 660A / IdM: :726A / 792A / PdN: 355kW    |
| ATVxB0C40Q4      | ILN: 620A                   | IdN: 730A / IdM: :803A / 876A / PdN: 400kW    |
| ATVxB0C45Q4      | ILN: 697A                   | IdN: 830A / IdM: :913A / 996A / PdN: 450kW    |
| ATVxB0C50Q4      | ILN: 775A                   | IdN: 900A / IdM: :990A / 1080A / PdN: 500kW   |
| ATVxB0C56Q4      | ILN: 868A                   | IdN: 1020A / IdM: :1122A / 1224A / PdN: 560kW |
| ATVxB0C63Q4      | ILN: 971A                   | IdN: 1140A / IdM: :1254A / 1368 / PdN: 630kW  |
| ATVxB0C71Q4      | ILN: 1094A                  | IdN: 1260A / IdM: :1386 / 1512A / PdN: 710kW  |
| ATVxB0C80Q4      | ILN: 1227A                  | IdN: 1420A / IdM: :1562A / 1704A / PdN: 800kW |

1.8 Low harmonic / regenerative single drive power modules 440V

Rated system voltage ULN:

3-phase 440V (-15%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)                  |
|------------------|-----------------------------|---|
| ATVxB0C11R4      | ILN: 159A                   | IdN: 211A / IdM: :232A / 253A / PdN: 110kW    |
| ATVxB0C13R4      | ILN: 190A                   | IdN: 250A / IdM: :275A / 300A / PdN: 132kW    |
| ATVxB0C16R4      | ILN: 229A                   | IdN: 302A / IdM: :332A / 362A / PdN: 160kW    |
| ATVxB0C20R4      | ILN: 285A                   | IdN: 370A / IdM: :407A / 444A / PdN: 200kW    |
| ATVxB0C25R4      | ILN: 354A                   | IdN: 477A / IdM: :525A / 572A / PdN: 250kW    |
| ATVxB0C31R4      | ILN: 446A                   | IdN: 590A / IdM: :649A / 708A / PdN: 315kW    |
| ATVxB0C35R4      | ILN: 503A                   | IdN: 660A / IdM: :726A / 792A / PdN: 355kW    |
| ATVxB0C40R4      | ILN: 563A                   | IdN: 730A / IdM: :803A / 876A / PdN: 400kW    |
| ATVxB0C45R4      | ILN: 634A                   | IdN: 830A / IdM: :913A / 996A / PdN: 450kW    |
| ATVxB0C50R4      | ILN: 704A                   | IdN: 900A / IdM: :990A / 1080A / PdN: 500kW   |
| ATVxB0C56R4      | ILN: 789A                   | IdN: 1020A / IdM: :1122A / 1224A / PdN: 560kW |
| ATVxB0C63R4      | ILN: 883A                   | IdN: 1140A / IdM: :1254 / 1368A / PdN: 630kW  |
| ATVxB0C71R4      | ILN: 995A                   | IdN: 1260A / IdM: :1386A / 1512A / PdN: 710kW |
| ATVxB0C80R4      | ILN: 1115A                  | IdN: 1420A / IdM: :1562A / 1704A / PdN: 800kW |



1.9 Low harmonic / regenerative single drive power modules 480V

Rated system voltage ULN: 3-phase 480V (-10%~+10% with braking unit +5%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)  |
|------------------|-----------------------------|---|
| ATVxB0C11T4      | ILN: 148A                   | I <sub>dN</sub> : 211A / I <sub>dM</sub> : :232A / 253A / P <sub>dN</sub> : 150HP     |
| ATVxB0C13T4      | ILN: 197A                   | I <sub>dN</sub> : 250A / I <sub>dM</sub> : :275A / 300A / P <sub>dN</sub> : 200HP     |
| ATVxB0C16T4      | ILN: 245A                   | I <sub>dN</sub> : 302A / I <sub>dM</sub> : :332A / 362A / P <sub>dN</sub> : 250HP     |
| ATVxB0C20T4      | ILN: 292A                   | I <sub>dN</sub> : 370A / I <sub>dM</sub> : :407A / 444A / P <sub>dN</sub> : 300HP     |
| ATVxB0C25T4      | ILN: 387A                   | I <sub>dN</sub> : 477A / I <sub>dM</sub> : :525A / 572A / P <sub>dN</sub> : 400HP     |
| ATVxB0C31T4      | ILN: 484A                   | I <sub>dN</sub> : 590A / I <sub>dM</sub> : :649A / 708A / P <sub>dN</sub> : 500HP     |
| ATVxB0C35T4      | ILN: 533A                   | I <sub>dN</sub> : 660A / I <sub>dM</sub> : :726A / 792A / P <sub>dN</sub> : 550HP     |
| ATVxB0C40T4      | ILN: 578A                   | I <sub>dN</sub> : 730A / I <sub>dM</sub> : :803A / 876A / P <sub>dN</sub> : 600HP     |
| ATVxB0C45T4      | ILN: 626A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 650HP     |
| ATVxB0C50T4      | ILN: 674A                   | I <sub>dN</sub> : 900A / I <sub>dM</sub> : :990A / 1080A / P <sub>dN</sub> : 700HP    |
| ATVxB0C56T4      | ILN: 771A                   | I <sub>dN</sub> : 1020A / I <sub>dM</sub> : :1122A / 1224A / P <sub>dN</sub> : 800HP  |
| ATVxB0C63T4      | ILN: 862A                   | I <sub>dN</sub> : 1140A / I <sub>dM</sub> : :1254A / 1368A / P <sub>dN</sub> : 900HP  |
| ATVxB0C71T4      | ILN: 958A                   | I <sub>dN</sub> : 1260A / I <sub>dM</sub> : :1386A / 1512A / P <sub>dN</sub> : 1000HP |
| ATVxB0C80T4      | ILN: 1049A                  | I <sub>dN</sub> : 1420A / I <sub>dM</sub> : :1562A / 1704A / P <sub>dN</sub> : 1100HP |

1.10 Low harmonic / regenerative single drive power modules 500V

Rated system voltage ULN: 3-phase 500V (-10%~+15%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)   |
|------------------|-----------------------------|--|
| ATVxB0C11N6      | ILN: 98A                    | I <sub>dN</sub> : 125A / I <sub>dM</sub> : :138A / 150A / P <sub>dN</sub> : 75kW     |
| ATVxB0C13N6      | ILN: 117A                   | I <sub>dN</sub> : 145A / I <sub>dM</sub> : :160A / 174A / P <sub>dN</sub> : 90kW     |
| ATVxB0C16N6      | ILN: 141A                   | I <sub>dN</sub> : 175A / I <sub>dM</sub> : :193A / 210A / P <sub>dN</sub> : 110kW    |
| ATVxB0C20N6      | ILN: 169A                   | I <sub>dN</sub> : 215A / I <sub>dM</sub> : :237A / 258A / P <sub>dN</sub> : 132kW    |
| ATVxB0C25N6      | ILN: 204A                   | I <sub>dN</sub> : 275A / I <sub>dM</sub> : :303A / 330A / P <sub>dN</sub> : 160kW    |
| ATVxB0C31N6      | ILN: 278A                   | I <sub>dN</sub> : 340A / I <sub>dM</sub> : :374A / 408A / P <sub>dN</sub> : 220kW    |
| ATVxB0C40N6      | ILN: 352A                   | I <sub>dN</sub> : 425A / I <sub>dM</sub> : :468A / 510A / P <sub>dN</sub> : 280kW    |
| ATVxB0C50N6      | ILN: 446A                   | I <sub>dN</sub> : 520A / I <sub>dM</sub> : :572A / 624A / P <sub>dN</sub> : 355kW    |
| ATVxB0C63N6      | ILN: 562A                   | I <sub>dN</sub> : 650A / I <sub>dM</sub> : :715A / 780A / P <sub>dN</sub> : 450kW    |
| ATVxB0C80N6      | ILN: 701A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 560kW    |
| ATVxB0M10N6      | ILN: 884A                   | I <sub>dN</sub> : 1030A / I <sub>dM</sub> : :1133A / 1236A / P <sub>dN</sub> : 710kW |
| ATVxB0M12N6      | ILN: 991A                   | I <sub>dN</sub> : 1230A / I <sub>dM</sub> : :1353A / 1476A / P <sub>dN</sub> : 800kW |

1.11 Low harmonic / regenerative single drive power modules 600V

Rated system voltage ULN: 3-phase 600V (-10%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)  |
|------------------|-----------------------------|---|
| ATVxB0C11T6      | ILN: 102A                   | I <sub>dN</sub> : 125A / I <sub>dM</sub> : :138A / 150A / P <sub>dN</sub> : 125HP     |
| ATVxB0C13T6      | ILN: 121A                   | I <sub>dN</sub> : 145A / I <sub>dM</sub> : :160A / 174A / P <sub>dN</sub> : 150HP     |
| ATVxB0C16T6      | ILN: 142A                   | I <sub>dN</sub> : 175A / I <sub>dM</sub> : :193A / 210A / P <sub>dN</sub> : 175HP     |
| ATVxB0C20T6      | ILN: 161A                   | I <sub>dN</sub> : 215A / I <sub>dM</sub> : :237A / 258A / P <sub>dN</sub> : 200HP     |
| ATVxB0C25T6      | ILN: 199A                   | I <sub>dN</sub> : 275A / I <sub>dM</sub> : :303A / 330A / P <sub>dN</sub> : 250HP     |
| ATVxB0C31T6      | ILN: 277A                   | I <sub>dN</sub> : 340A / I <sub>dM</sub> : :374A / 408A / P <sub>dN</sub> : 350HP     |
| ATVxB0C40T6      | ILN: 355A                   | I <sub>dN</sub> : 425A / I <sub>dM</sub> : :468A / 510A / P <sub>dN</sub> : 450HP     |
| ATVxB0C50T6      | ILN: 434A                   | I <sub>dN</sub> : 520A / I <sub>dM</sub> : :572A / 624A / P <sub>dN</sub> : 550HP     |
| ATVxB0C63T6      | ILN: 511A                   | I <sub>dN</sub> : 650A / I <sub>dM</sub> : :715A / 780A / P <sub>dN</sub> : 650HP     |
| ATVxB0C80T6      | ILN: 628A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 800HP     |
| ATVxB0M10T6      | ILN: 785A                   | I <sub>dN</sub> : 1030A / I <sub>dM</sub> : :1133A / 1236A / P <sub>dN</sub> : 1000HP |
| ATVxB0M12T6      | ILN: 937A                   | I <sub>dN</sub> : 1230A / I <sub>dM</sub> : :1353A / 1476A / P <sub>dN</sub> : 1200HP |



1.12 Low harmonic / regenerative single drive power modules 690VRated system voltage U<sub>LN</sub>: 3-phase 690V (-10%~+10%)

| Type Designation | Input ratings (normal duty) | Output ratings (normal duty)  |
|------------------|-----------------------------|---|
| ATVxB0C11Q6      | ILN: 102A                   | I <sub>dN</sub> : 125A / I <sub>dM</sub> : :138A / 150A / P <sub>dN</sub> : 110kW     |
| ATVxB0C13Q6      | ILN: 122A                   | I <sub>dN</sub> : 145A / I <sub>dM</sub> : :160A / 174A / P <sub>dN</sub> : 132kW     |
| ATVxB0C16Q6      | ILN: 148A                   | I <sub>dN</sub> : 175A / I <sub>dM</sub> : :193A / 210A / P <sub>dN</sub> : 160kW     |
| ATVxB0C20Q6      | ILN: 183A                   | I <sub>dN</sub> : 215A / I <sub>dM</sub> : :237A / 258A / P <sub>dN</sub> : 200kW     |
| ATVxB0C25Q6      | ILN: 228A                   | I <sub>dN</sub> : 275A / I <sub>dM</sub> : :303A / 330A / P <sub>dN</sub> : 250kW     |
| ATVxB0C31Q6      | ILN: 287A                   | I <sub>dN</sub> : 340A / I <sub>dM</sub> : :374A / 408A / P <sub>dN</sub> : 315kW     |
| ATVxB0C40Q6      | ILN: 363A                   | I <sub>dN</sub> : 425A / I <sub>dM</sub> : :468A / 510A / P <sub>dN</sub> : 400kW     |
| ATVxB0C50Q6      | ILN: 453A                   | I <sub>dN</sub> : 520A / I <sub>dM</sub> : :572A / 624A / P <sub>dN</sub> : 500kW     |
| ATVxB0C63Q6      | ILN: 568A                   | I <sub>dN</sub> : 650A / I <sub>dM</sub> : :715A / 780A / P <sub>dN</sub> : 630kW     |
| ATVxB0C80Q6      | ILN: 718A                   | I <sub>dN</sub> : 830A / I <sub>dM</sub> : :913A / 996A / P <sub>dN</sub> : 800kW     |
| ATVxB0M10Q6      | ILN: 898A                   | I <sub>dN</sub> : 1030A / I <sub>dM</sub> : :1133A / 1236A / P <sub>dN</sub> : 1000kW |
| ATVxB0M12Q6      | ILN: 1078A                  | I <sub>dN</sub> : 1230A / I <sub>dM</sub> : :1353A / 1476A / P <sub>dN</sub> : 1200kW |

\* ILN: Line side rated a.c. current at 2.5kHz pulse frequency, output frequency &lt;125Hz and 40°C ambient temperature

\*\* I<sub>dN</sub> Rated continuous current at 2.5kHz pulse frequency, output frequency <125Hz and 40°C ambient temperature\*\*\* P<sub>dN</sub> Continuous output ratingCommon ratings all drive modulesRated system frequency f<sub>LN</sub>:

50/60Hz

Maximum a.c. system symmetrical short circuit I<sub>SCM</sub>:

50kA

\*\*\*\*Overload capability I<sub>dM</sub>:

110%/60sec per 10min with type ATV600 control unit

120%/60sec per 10min with type ATV900 control unit

Output frequency with ATV600 control unit:

0.1~500Hz

Output frequency with ATV900 control unit:

0.1~599Hz

Module degree of protection:

IP00

Pollution degree:

2

1.13 Braking units MODBUO 380V~480V

Braking voltage: 780VDC

Max. DC link voltage:

820VDC

| Type Designation | Braking power           | Max rms current / phase output* | Braking resistor   |
|------------------|-------------------------|---------------------------------|--|
| C16x4APM         | 198kW / 116.16kW / 75kW | 85A / 62A / 69A                 | Min. 3x 6.7Ω / Max. 3x 8.2Ω  |
| C31x4APM         | 375kW / 220kW / 130kW   | 161A / 115A / 125A              | Min. 3x 3.35Ω / Max. 3x 4.1Ω   |
| C50x4APM         | 600kW / 352kW / 225kW   | 247A / 176A / 198A              | Min. 3x 2.23Ω / Max. 3x 2.7Ω   |
| C63x4APM         | 750kW / 440kW / 260kW   | 161A / 115A / 125A              | Min. 6x 3.35Ω / Max. 6x 4.1Ω   |
| C80x4APM         | 945kW / 554.4kW / 355kW | 247A / 176A / 198A              | Min. 6x 2.68Ω or 3x 2.23Ω + 3x 3.35Ω<br>Max. 6x 3.35Ω or 3x 2.7Ω + 3x 4.1Ω |

1.14 Braking units MODBUO 500V~690V

Braking voltage: 1130VDC

Max. DC link voltage:

1250VDC

| Type Designation | Braking power             | Max rms current / phase output* | Braking resistor   |
|------------------|---------------------------|---------------------------------|--|
| C20x6APM         | 240kW / 140.8kW / 85kW    | 74A / 54A / 58A                 | Min. 3x 11Ω / Max. 3x 13.75Ω   |
| C40x6APM         | 472.5kW / 277.2kW / 165kW | 142A / 102A / 110A              | Min. 3x 5.5Ω / Max. 3x 6.88Ω   |
| C63x6APM         | 750kW / 440kW / 285kW     | 216A / 154A / 175A              | Min. 3x 3.67Ω / Max. 3x 4.4Ω   |
| C80x6APM         | 945kW / 554.4kW / 330kW   | 142A / 102A / 110A              | Min. 6x 5.5Ω / Max. 6x 6.88Ω   |
| M10x4APM         | 1200kW / 704kW / 450kW    | 216A / 154A / 175A              | Min. 6x 4.4Ω or 3x 3.67Ω + 3x 5.5Ω<br>Max. 6x 5.5Ω or 3x 4.4Ω + 3x 6.88Ω |
| M12x6APM         | 1500kW / 785kW / 550kW    | 204A / 146A / 172A              | Min. 6x 3.67Ω / Max. 6x 4.4Ω   |

\* at a 50% load cycle (120sec/240sec)



**2. DOCUMENTS AND DRAWINGS:**

## Catalogue:

- Variable speed drives - Altivar Process for Cabinet Integration DIA2ED2180301EN V3.0 dated 09/2019

## Manuals:

- Altivar Process Modular Standard - Integration Manual PHA2451702.05 dated 11/2019
- Altivar Process Modular Low Harmonic/Regen-Integration Manual PHA2452602.03 dated 11/2019
- Altivar Process Modular Optional Braking Unit-Integration Manual MFR77831.02 dated 11/2019
- Altivar Process Variable Speed Drives ATV6xx Embedded Safety Function Manuals EAV64334 dated 08/2019
- Altivar Process Variable Speed Drives ATV9xx Embedded Safety Function Manual NHA80947 dated 08/2019

## Software Quality System documents:

- Project Management Plan - Project Quality Plan for Software KALA ST6JB83D Rev 01 dated 10/10/2019
- Manufacturing Change Notification - Update FORTIS Firmware MCN-KALA-EE-194102 Rev 01 dated 10/10/2019
- Manufacturing Change Notification - Update NERA Firmware MCN-KALA-EE-194101 Rev 01 dated 10/20/2019

**3. TEST REPORTS:**

## Schneider Electric Power Drives GmbH:

- C3730 dated 10.07.2019; C3812 dated 09.10.2019; C4174 dated 03.12.2020 ; C3731 dated 10.07.2019; C2518 dated 07.03.2018; C2487 dated 06.03.2018; C2325 dated 2018-03-22; C2812 dated 19.6.2018; C2814 dated 18.6.2018; C1777 dated 09.10.2017; C2230 dated 26.01.2018; C2231 dated 26.01.2018; C3879 dated 09.01.2020; C3880 dated 09.01.2020; C3650 dated 25.03.2019; C3651 dated 25.03.2019; C3652 dated 26.03.2019; C3590-V2 dated 09.01.2019; C3602-V2 dated 07.02.2019; C3320-V4 dated 04.10.2018; C3214 dated 31.08.2018; C3166-V2 dated 17.08.2018; C3167 dated 17.08.2018; C3881 dated 23.01.2020; C3882 dated 23.01.2020; C3849\_UL\_CSA\_tests\_APM\_wave3\_V2 dated 2019-11-20; C3321 dated 04.10.2018; C3655 dated 28.03.2019; C3191 dated 23.8.2018; C2631 dated 05.04.2018; C2648 dated 10.04.2018; C2649 dated 10.04.2018; C3670-V2 dated 28.10.2019; C3632 dated 20.02.2019; C3677 dated 18.03.2019; C3676 dated 18.03.2019; C3691-V02 dated 04.11.2019; C3658 dated 01.04.2019; C3683 dated 23.04.2019

## tgm Staatliche Versuchsanstalt:

- TGM -VA EE 38661 EMC dated 08.12.2020; TGM -VA EE 38499 EMC dated 06.08.2020; TGM -VA EE 37333 EMC dated 27.10.2017; TGM - VA EE 37435 EMC dated 15.12.2017; TGM - VA EE 38006 EMC dated 10.04.2019; TGM - VA EE 37768 EMC dated 05.09.2018; TGM - VA EE 37768a EMC dated 05.09.2018; TGM - VA EE 37725 EMC dated 07.08.2018; TGM - VA EE 37725a EMC dated 07.08.2018; TGM- VA EE 38007 EMC dated 10.04.2019; TGM VA EE 38082 EMC dated 10.06.2019

## AIT-Austrian Institute of Technology

- 2.00.80530.1.0-06 dated 12.01.2021; 2.00.80515.1.0 dated 26.09.2019; SGP-09636-002-01 dated 17.01.2018

## SOPEMEA:

- 1E32446M1 dated 26/07/2019; 1E32446M1-2 dated 13/12/2019

**4. APPLICATION / LIMITATION:**

- 4.1 - Bureau Veritas Rules for the Classification of Steel Ships
- 4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - Bureau Veritas Environmental Category, **EC Code: 31**
- 4.4 - To meet EMC requirements for installation in General Power Distribution Zones, a suitably rated EMC/RFI three-phase filter is to be used. Schaffner FN3359HV filters were used during testing.
- 4.5 - Upstream protection devices are to be selected in accordance with manufacturers guidelines taking into account minimum/maximum three-phase prospective short-circuit currents at the drive connection point.
- 4.6 - Integration of the modules into a power drive system including cabinets, busbar systems, air ducts, fans and terminal kits is to be done by trained and registered integration partners of Schneider Electric Power Drives. Specific requirements for marine applications as outlined in the integration manuals have to be considered and include installation with vibration dampers.
- 4.7 - Derating curves in dependance of temperature, pulse and output frequency to be considered.
- 4.8 - Suppliers using the modules in safety related applications shall comply with the latest version of the equipment manuals, the embedded safety function manuals and shall follow the implementation conditions and restrictions as found in the latest report to the functional safety certificate.
- 4.9 - Only hardware and firmware successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by the certificate.
- 4.10 - Drawings and documents relating to each application are to be submitted to the Society's examination prior fitting on board.
- 4.11 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 7.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above products are to be supplied by **Schneider Electric Power Drives GmbH** in compliance with the type and requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - For information, **Schneider Electric Power Drives GmbH** has declared to Bureau Veritas the following production site:

**Schneider (Wuxi) Pro-face Co., Ltd.**  
**No 20 Hanjiang Road - National Hi-Tech Industrial Development Zone**  
**Wuxi, Jiangsu**  
**214001 Wuxi - P.R. CHINA**

**6. MARKING OF PRODUCT:**

- Maker's name or trade mark
- Serial number of the units
- Equipment type number or model identification under which it was type-tested
- Ⓔ or Ⓕ conformity marking, as relevant.

**7. OTHERS:**

7.1 - It is **Schneider Electric Power Drives GmbH's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

\*\*\* END OF CERTIFICATE \*\*\*