AKT and AKT2G Comparison

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| **Topic** | **AKT** | **AKT2G** |
| Module Coverage |  |  |
| * Ethercat Coupler
 | AKT-ECT-000-000 | AKT2G-ECT-000-000 |
| * Digital Inputs
 | 4 channel (AKT-DN-004-000)4 channel high speed(AKT-DNH-004-000)8 channel (AKT-DN-008-000)8 channel high speed(AKT-DNH-008-000) | 8 channel (AKT2G- DN-008-0000)8 channel high speed (AKT2G- DNH-008-0000) |
| * Digital Outputs
 | 4 channel (AKT-DT-004-000)8 channel (AKT-DT-008-000)2 channel relay (AKT-DT-2RT-000) | 8 channel (AKT2G- DT-008-000) |
| * Thermocouple Input
 | 2 channel (AKT-AN-200-000)4 channel (AKT-AN-400-000) | 4 channel (AKT2G-AN-400-000) |
| * PT100 (RTD) Input for resistive sensors
 | None | 2 channel, 3-wire system(AKT2G-AN-240-000) |
| * Analog Inputs
 | 4 channel 0 – 10 vdc (AKT-AN-410-000)4 channel 0 – 20mA (AKT-AN-420-000)8 channel 0 – 10 vdc (AKT-AN-810-000)8 channel 0 – 20mA (AKT-AN-820-000) | 4 channel parameterizable - covering -10/0…+10 V, -20/0/+4…+20 mA, 16 bit (AKT2G-AN-430-000) |
| * Analog Output
 | 2 channel 0 – 20mA (AKT- AT-220-000)4 channel 0 – 10 vdc (AKT- AT-410-000)4 channel 0 – 20mA (AKT- AT-420-000)8 channel 0 – 10 vdc (AKT-AT-810-000)8 channel 0 – 20mA (AKT- AT-820-000) | 4 channel (0 to 10 v)(AKT2G-AT-410-000)4 channel, 2 wire system (-10 V…+10 v) (AKT2G-AT-425-000) |
| * 24 VDC Power Feed Terminal
 | without fuse (AKT-PS-024-000)with fuse (AKT-PSF-024-000) | with fuse (AKT2G-PSF-024-000) |
| * Stepper Slice w/ optional use encoder feedback
 | None | AKT2G-SM-L15-000AKT2G-SM-L50-000 |
| * Isolation Module
 | AKT-IM-000-000 | None |
| * Fan Cartridge (extends range of Stepper terminals)
 | None | (AKT-AC-FAN-001) |
| * Brake Chopper (extends power range of Stepper terminals)
 | None  | (AKT2G-BRC-000-000 |
| * Inc Enc Interface
 | None | 24 VDC input (AKT2G-ENC-180-000 )Differential Input RS422 (AKT2G-SM-190-000 ) |
| Safety Digital I/O  | None | 4 channel Digital Input model (AKT2G-SDI-004-000)4 channel Digital Output Module (AKT2G-SDO-004-000) |
| Up/Down Counter | None | 24 VDC, 100 Khz ([AKT2G-DN-002-000](https://webhelp.kollmorgen.com/kas/Content/AKT2G/AKT2G-DN-002-xxx.htm)) |
| End Module Required | Yes (AKT-EM-000-000) | Only to create physical barrier (AKT2G-EM-000-000) |
| **Topic** | **AKT** | **AKT2G** |
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| Performance (note KAS has a fastest update rate of 250 usec) | 256 digital I/Os in 470 µs1,000 digital I/Os in 1390 µs200 analog I/Os (16 bit) in 6670 µs256 | digital I/Os in 12 µs1,000 digital I/Os in 30 µs200 analog I/Os (16 bit) in 50 µs |
| Physical size | Same Size | Same Size |
| Ethernet directly to the Module(slice) | No, there is an additional Kbus connection inside the I/O block). Example:  | Yes (Ethercat Network), slightly faster transmission time between I/O point and PxMM. Example  |
| Coupler Sizing Sheet | [How Many Remote I/O AKT-ECT-000-000 Couplers are Required in an Application. | Kollmorgen](https://www.kollmorgen.com/en-us/developer-network/how-many-akt-ect-000-000-are-required-application/) | [Coupler Sizing - AKT2G Remote IO | Kollmorgen](https://www.kollmorgen.com/en-us/developer-network/sizing-akt2g-remote-io/) |
| IDE Implementation | Online: Module scanning availableOffline: Add slices through pull down selection. Slices are in a parent/child relationship to the ECAT coupler | Online: Module scanning availableOffline: Add slices through pull down selection from Ethercat Device Selector |
| How shown in IDE project tree | Subset to Coupler, slices on secondary bus | Slices directly on the Ethercat bus |
| Adding other slices | No  | Beckhoff E-bus slices can be added |

More detail:

[Remote Input/Output Terminals (kollmorgen.com)](https://webhelp.kollmorgen.com/kas/Content/12.KASComponents/Input%20Output.htm)