



400 V Three-Phase
2.2 kW to 500 kW

U1000 Matrix Converter

The new YASKAWA U1000 Matrix Converter is an energy-saving inverter without DC-bus. Regenerative braking energy is fed back into the power grid, while sinusoidal input current reduces losses and allows a power grid-friendly operation. The new YASKAWA Matrix Converter is significantly compact than usual regeneration solutions and the first choice for innovative, energy-efficient drive solutions with or without power regeneration.

Advantages

- ▶ **Integrated power regeneration**
No heating dissipation in braking resistors, less cooling is required for the switch cabinet; this saves energy and reduces costs
- ▶ **Power grid-friendly and with minimized losses**
Sinusoidal input current reduces losses in transformers and lines and lowers the potential for interfering with other components
- ▶ **Energy-saving**
Braking energy recovery provides energy to other consumers and reduces the total energy consumption
- ▶ **Compact**
More compact than traditional solutions with energy recovery, thanks to compact design and the absence of external components like reactors
- ▶ **Ready-to-use in an instant**
Reduced installation time thanks to wiring and auto-tuning function
- ▶ **Reliable Operation**
Designed for 10 years of maintenance-free operation

Applications



Hoists,
Cranes



Lifts



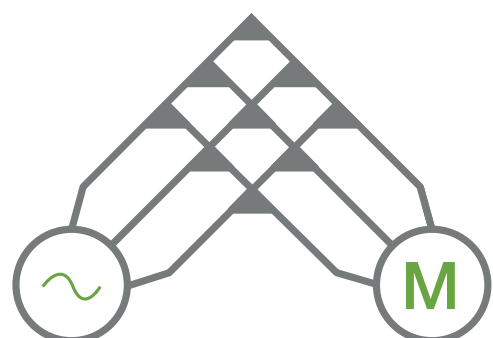
Escalators



HVAC



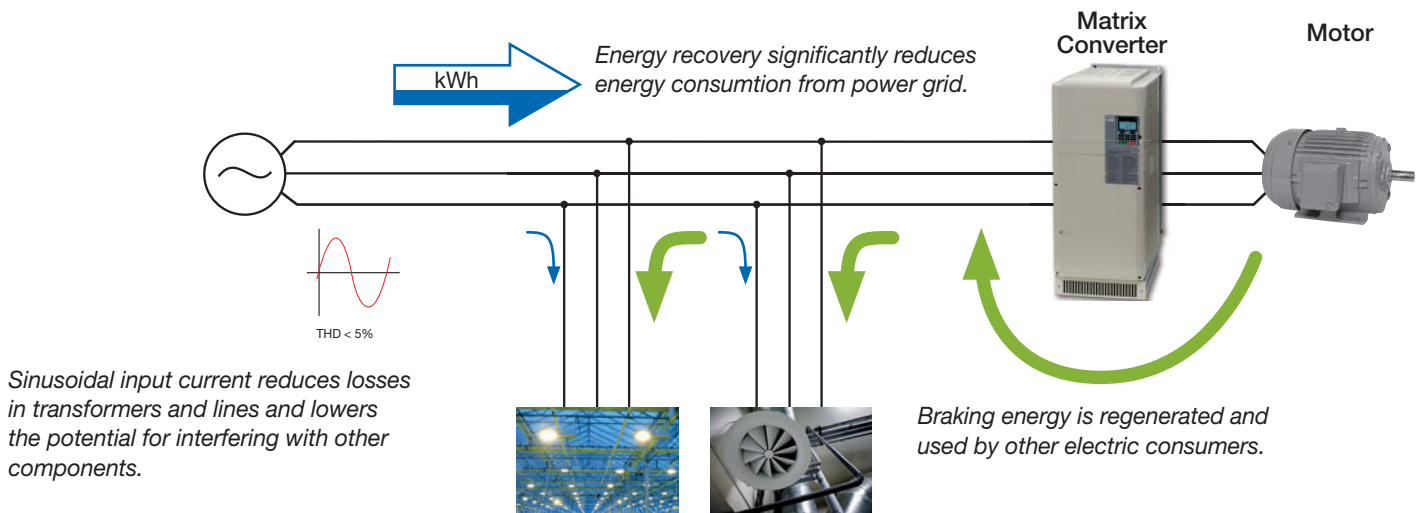
Centrifugal
separators





Matrix saves energy

Connecting the Matrix Converter is as easy as connecting usual inverters. Recovered braking energy can be used e. g. for illumination or ventilation. This reduces the total energy costs of the system, protects the environment and allows a fast return of investments for the Matrix Converter.



Specifications

Voltage	Three-Phase 380~480 Vac, -15/+10%;
Range	2.2 ~ 500 kW (ND) / 450 kW (HD)
Output frequency	0...400 Hz
Overload	150% / 1 MIN (HD), 120% / 1 MIN (ND)
Harmonics at Input	THD < 5%
EMC-Filter	integrated
Ambient Temperature	-10 ~ +50 °C, to +60 °C with derating

Control	Vector control for asynchronous- and PM motors, with or without encoder
Inputs	8 Digital, 3 analogue (current/voltage), 1 pulse input
Outputs	4 relays, 2 analogue (current/voltage), 1 pulse output
Functional Safety	STO (Safe Torque Off) SIL3; replaces e.g. motor contactors for emergency stop
Efficiency	> 96%

International Standards



Safety Standards



RoHS Directive

RoHS Directive stands for the EU directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment