

# CUBE

## A Guide to Murrelektronik's Distributed Fieldbus Family



- 
- Integrated Power-T
- Built in Ethernet switch
- IP67 Rating
- LED Diagnostics: System and Branch
- Fully Potted
- MURR ELEKTRONIK  
6-719710-0000000  
Gube671 8N-P



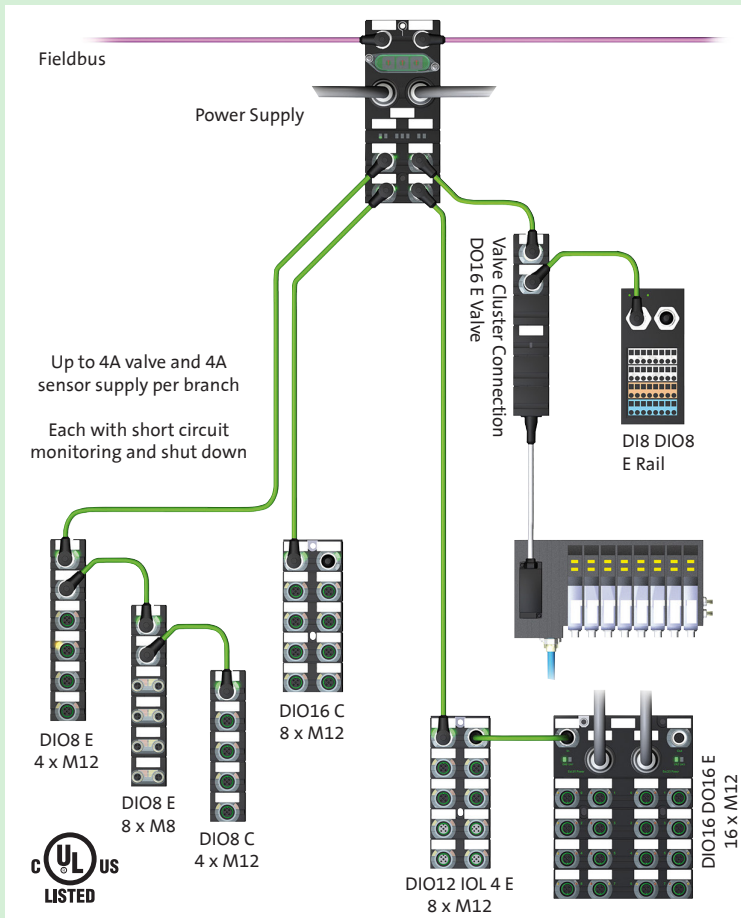
## Function Module

## | FEATURES

- 
- Backplane connection:  
communication & power  
for module expansion
- LED System Status
- Integrated  
Ethernet Switch
- Din rail mounting
- Removable spring  
clamp terminals



### Cube67 Conversion



## CUBE67+

Cube67+ is an IP67 rated, fully distributed I/O system with proven reliability in industrial applications. It can connect up to 32 I/O modules within a 60m range.

Cube67+ supports multiple protocols including Ethernet/IP, EtherCAT, ProfiBus and ProfiNet. Bus nodes have an integrated Power-T as well as communication switch connections, giving you the ability to daisy chain multiple devices together with other items on the bus network.

Cube67+ has advanced diagnostic functions including pin level LED diagnostics and, with the Ethernet/IP bus node, a built in web browser function is available for both diagnostics and system overview without the need of a PLC.

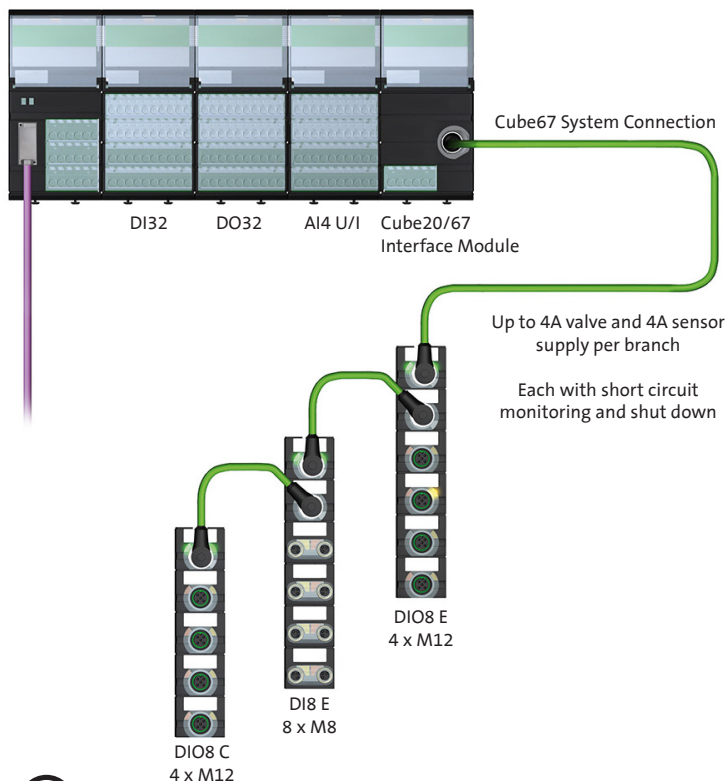
Absolute flexibility in system design is achieved with Cube67+. Blending modules between IP67 rated applications and IP20 cabinet solutions allows the user and installer to achieve installation and maintenance in the most efficient ways.

EtherNet/IP

EtherCAT

PROFI<sup>®</sup>  
NET

PROFI<sup>®</sup>  
BUS



## CUBE20

Cube20 is an IP20 rated in-cabinet I/O system designed for ease of installation with a high I/O density in a single space. It can connect up to 15 I/O modules, which gives you up to 488 I/O connections within 90cm.

Cube20 was designed to minimize assembly time, so one part number for one I/O module is all that is necessary when ordering. The I/O modules are connected to each other with a built in ribbon cable for backplane communication and power. Easy to plan, easy to install, easy to adapt.

Cube 20 also has the ability to connect Cube67 modules through a Cube20/Cube67 transition module. This provides an easier solution for your complex installations and access to over 100 additional I/O modules.

Available modules include:

- Digital In and Digital Out
- Analog In and Analog Out
- RTD and Thermocouple
- Cube 20/67 Interface

EtherNet/IP

PROFI<sup>®</sup>  
BUS

PROFI<sup>®</sup>  
NET



# | SYSTEM FEATURES AND BENEFITS

## Machine Option Management

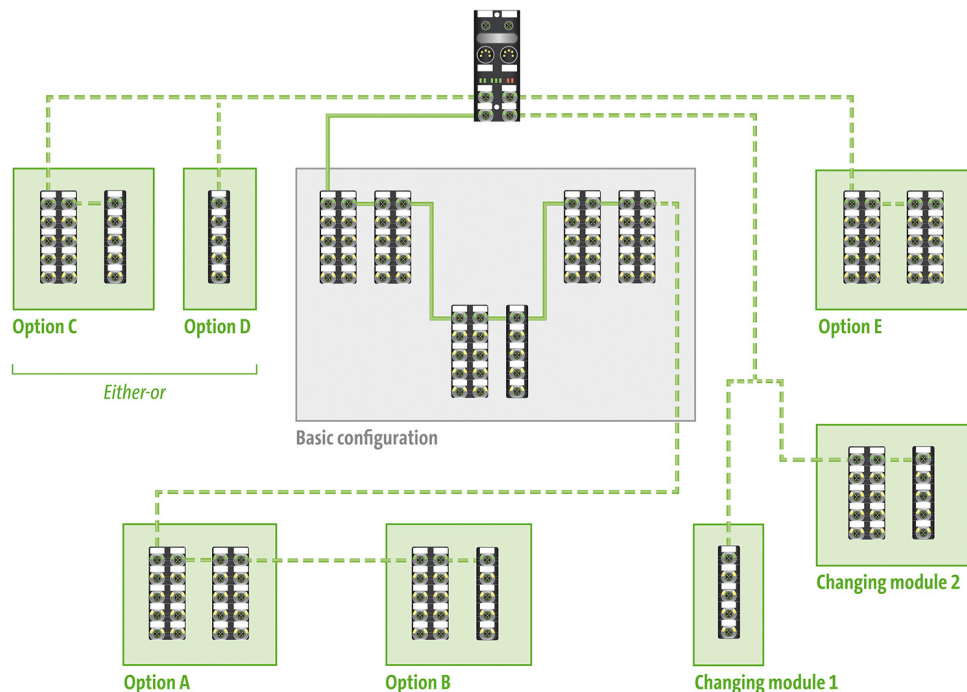
makes it possible to turn different Cube modules on or off while they are running via the controls. This creates the foundation for modular machine configurations, easy tool changes, the possibility to expand the system and optional machine add-on I/Os for sequential commissioning.

**MOM reduces project planning and documentation efforts.**

EtherNet/IP

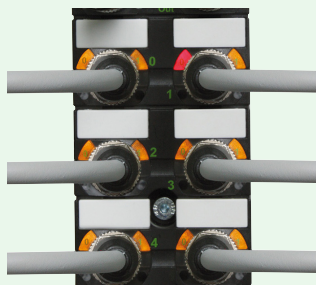
PROFI<sup>®</sup>  
NET

PROFI<sup>®</sup>  
BUS



## | DIAGNOSTICS

Detailed diagnostics that are shown directly on the device with pin-specific LEDs and sent to the controls make it easy to find and fix errors. This gets the system up and running faster and reduces downtime.



## | SAFETY

Safety technology solutions are possible with Cube. M12 outputs and the connections to valve clusters can now be used in machines up to category 3 and Performance Level d (acc. to DIN EN ISO 13849). This makes integrating safety technology easy.



## | MULTIFUNCTIONAL I/Os

Depending on your needs, the ports can be configured as inputs, diagnostic inputs or outputs. This makes it possible to connect many different components onto one module making your system flexible and eliminating the need to order many different modules.



## | ONE CABLE TECHNOLOGY

Cube67 only needs one system cable. It supplies both power and signal. Pre-assembled cordsets reduce errors. Installations with Cube67 need only half as much space and can be done in half the time.



## | PLUG AND PLAY

Quick & simple plug connections replace elaborate wiring

- Avoid wiring errors
- Shorten start up time
- Quickly change out cables
- Port Diagnostics



## | VALVE MODULES

There are over 70 different modules for connecting valve manifolds from all major manufacturers. These not only provide flexibility, but also allow you to react quickly to customer requests.



# CUBE20

	Protocol	I/O	Art. Number
Bus Nodes	ProfiBus		56001
	Ethernet/IP	DI8	56005
	ProfiNet		56006

	I/O	Art. Number
Digital Inputs	DI32	56112
	DI32 NPN/PNP	56121

	I/O	Art. Number
Analog Inputs	AI4 U/I	56200
	AI4 RTD	56230
	AI4 TH	56240

	I/O	Art. Number
Digital Inputs/Outputs	DI16 DO16	56168

	I/O	Art. Number
Digital Outputs	DO16 2A	56117
	DO32	56118
	DO16 2A K3	56127

# CUBE67

	Protocol	Art. Number
Cube67+ Bus Nodes	Profibus	56521
	Ethernet/IP	56525
	Profinet	56526
	EtherCat	56527
Cube67 Bus Nodes	CANOpen	56504
	DeviceNet	56507

## System Connection

Cube20/67 Interface Module

Art. Number 56140

	I/O	Description	Art. Number
Fixed Digital Inputs	DI16	8 x M12 C	56602
	DI8	4 x M12 C	56612
	DI8	8 x M8 C	56622
	DI16 PNP	8 x M12 E	56603
	DI16 NPN	8 x M12 E	56606
	DI8 PNP	4 x M12 E	56613
	DI8 NPN	4 x M12 E	56616
	DI8 PNP	8 x M8 E	56623
	DI8 NPN	8 x M8 E	56626

	I/O	Description	Art. No.
Configurable Digital Inputs	DIO16	8 x M12 C	56600
	DIO8	4 x M12 C	56610
	DIO8	8 x M8 C	56620
	DIO16	8 x M12 1.6A C	56640
	DIO8	4 x M12 1A E	56631
	DIO16	8 x M12 E	56601
	DIO8	4 x M12 E	56611
	DIO16/DO16	16 x M12 1.6/2A E	56641
	DIO32	16 x M12 .5A	56642
	DIO8	8 x M8 E	56621
	DIO8	Cable E	56661
	DIO16	Cable E	56662

AI = Analog Input  
AO = Analog Output

DI = Digital Input  
DO = Digital Output  
DIO = Configurable Ports

C = Compact Modules  
E = Expansion Modules  
  
(I) = Current  
(U) = Voltage

	I/O	Description	Art. No.
Digital Inputs/Outputs	DIO8 DI8	TB Box E	56681
	DIO8 DI8	TB Box E	5668100
	DIO8 DI8	TB Rail E	56691
	DIO8	M16 .5A E	56663
	DIO8	Cable M12 ID E	5666500
	DIO8	Cable .5m E	56661
	DIO8	Cable 2m E	5666100
	DIO16	Cable .5m E	56662
	DIO16	Cable 1.5m E	5666200
	DI16/DO16	Cable .5m E	56671

	Description	I/O	Art. Number	Description	I/O	Art. Number
Digital Outputs for Valve Manifolds	Valve module with .5m cable with flying leads	DO8	56655	M12 Modlight	DO7	5665503
		DO16	56651	MAC Valves	DO16	5665116
		DO32	56656	MAC Valves	DO32	5665609
	Bosch HF03	DO32	5665602	Metal Work HDM	DO16	5665106
	Bosch HF02/03-LG, HF04 (Sub D-25)	DO32	5665606	Norgren V20,V22	DO16	5665110
	Bosch HF02/03-LG (Sub D-44)	DO32	5665617	Norgren V20,V22C	DO16	5665115
	Festo CPA	DO24	5665605	Norgren V20, 22B	DO16	5665112
	Festo CPA-SC	DO32	5665615	Norgren VM10	DO16	5665111
	Festo CPV	DO8	5665500	Norgren VM10	DO24	5665600
	Festo CPV (Sub D-9)	DO8	5665501	Norgren VM10	DO32	5665603
	Festo CPV	DO16	5665100	Numatics Generation 2000	DO22	5665618
	Festo CPV (Sub D-15)	DO16	5665102	Parker Series V	DO16	5665101
	Festo CPV (Sub D-26)	DO16	5665103	SMC Series SV	DO32	5665604
	Festo MPA	DO8	5665502	SMC Series SV,VQ, SY (Sub D-25)	DO23	5665113
	Festo MPA	DO16	5665118	SMC Series VQC (M27)	DO16	5665114
	Festo MPA	DO24	5665601	SMC Series VQC (M27)	DO24	5665607
Expansion Modules (E)	Festo MPA-L	DO32	5665616	SMC Series VQC (Sub D-25)	DO24	5665614
	Festo MPA-L (SubD-25)	DO32	5665619	Vesta (Sub D-25)	DO24	5665611
	Festo VTSA	DO16	5665105	Vesta (Sub D-37)	DO32	5665610
	Festo VTSA	DO20	5665613			

	I/O	Description	Art. No.
Safety Outputs	DO8	Valve K3 C	5665003
	DO16	Valve K3 C	56650
	DO6/DO6	6xM12 K3 C	56605

	I/O	Description	Art. No.
Cube67 Function Modules	Logic	4 x M12 E	56771
	CNT2	4 x M12 C	56750
	DIO4 RS485	3 x M12 E	56760
	Encoder	4 x M12 E	56753

	I/O	Description	Art. No.
Cube67+ Function Modules	DIO12 IOL4	8 x M12 E	56766
	DIO4 RS232/485	4 x M12 E	56761

	I/O	Description	Art. No.
Analog Inputs		4 x M12 (I) C	56730
		4 x M12 (U) C	56700
		4 x M12 RTD C	56740
	AI4	4 x M12 TH C	56748
		4 x M12 (I) E	56731
		4 x M12 (U) E	56701
		4 x M12 RTD E	56741
		4 x M12 TH E	56749

	I/O	Description	Art. No.
Analog Outputs		4 x M12 (I) C	56720
	AO4	4 x M12 (U) C	56710
		4 x M12 (I) E	56721
		4 x M12 (U) E	56711

## CABLE & ACCESSORIES

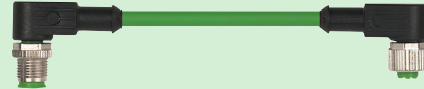
### M12 6-POLE SHIELDED CUBE SYSTEM CABLE

#### MALE STRAIGHT to FEMALE STRAIGHT



Art. No.: 7000-46041-802xxxx  
xxxx = .3 to 30m

#### MALE 90° to FEMALE 90°



Art. No.: 7000-46061-802xxxx  
xxxx = .3 to 30m

### 7/8" 5-POLE POWER CABLE

#### FEMALE STRAIGHT



Art. No.: 7700-A5021-U1Dxxxx

#### FEMALE 90°



Art. No.: 7700-A5031-U1Dxxxx

#### MALE STRAIGHT to FEMALE STRAIGHT



Art. No.: 7700-A5A01-U1Dxxxx

### M12 4-POLE SHIELDED - ETHERNET

#### MALE STRAIGHT to MALE STRAIGHT



Green PUR Art. No.: 7000-44511-796xxxx  
Teal TPE Art. No.: 7700-44511-S4Uxxxx

#### MALE 90° to MALE 90°



Green PUR Art. No.: 7000-44561-796xxxx  
Teal TPE Art. No.: 7700-44561-S4Uxxxx

#### MALE STRAIGHT to RJ45



Art. No.: 7000-44711-796xxxx

#### RJ45 to RJ45



Art. No.: 7000-74301-796xxxx

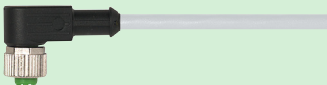
### CUBE AUXILIARY POWER

#### FEMALE STRAIGHT



Art. No.: 7000-15001-414xxxx

#### FEMALE 90°



Art. No.: 7000-15021-414xxxx

### PLUG CONNECTORS



Male M12, 4-pole, Straight, D-coded, IDC  
Art. No.: 7000-14521-0000000

Female M12, 4-pole, Straight, D-coded, IDC  
Art. No.: 7000-14621-0000000

### M12 TERMINATOR



4-pole, B-coded  
Art. No.: 7000-14041-0000000

5-pole, A-coded  
Art. No.: 7000-13461-0000000

6-pole, A-coded  
Art. No.: 7000-15041-0000000

### GROUND STRAP



for M4 screw  
Length = 100mm  
Art. No.: 4000-71001-0410004

### T-COUPLER - AUX. POWER



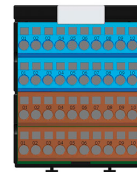
Art. No.: 7000-46101-0000000  
For use with 7000-15001-414xxxx cable

### RJ45/M12 ADAPTER



Straight Art. No.: 7000-44671-0000000  
90° Art. No.: 7000-44681-0000000

### CUBE20 TERMINATION BLOCK



Art. No.: 56109

### IP20 UNMANAGED ETHERNET SWITCH



6 Port  
Art. No.: 58170



8 Port  
Art. No.: 58171

### IP67 UNMANAGED ETHERNET SWITCH



6 Port  
Art. No.: 58160



8 Port  
Art. No.: 58161



*stay connected*

1327 Northbrook Parkway, Suite 460 | Suwanee, GA 30024  
P: 770-497-9292 | F: 770-497-9391 | [murrinc.com](http://murrinc.com)