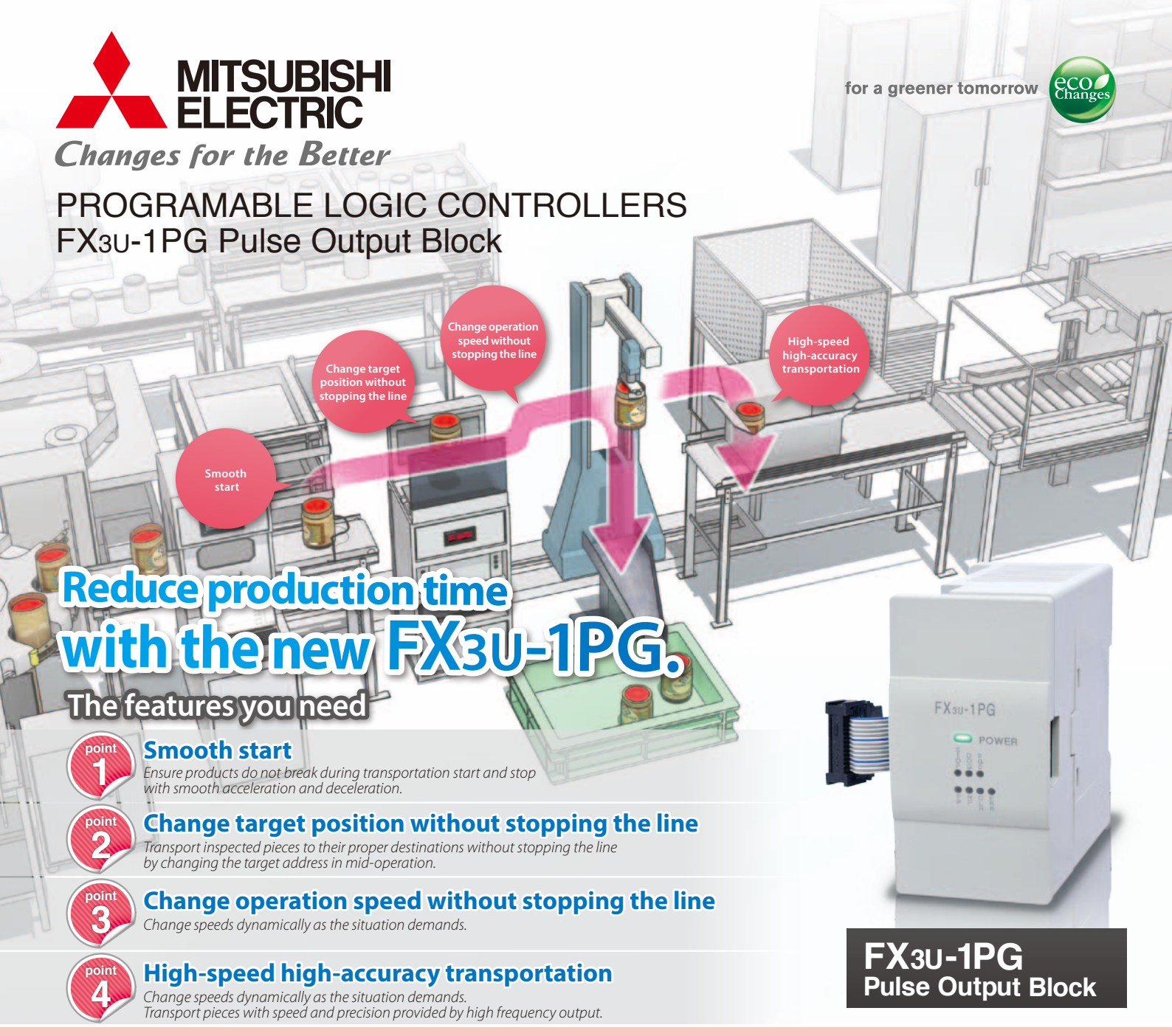
MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow eco Changes

PROGRAMABLE LOGIC CONTROLLERS
FX3U-1PG Pulse Output Block



Reduce production time with the new FX3U-1PG.

The features you need

point 1 Smooth start
Ensure products do not break during transportation start and stop with smooth acceleration and deceleration.

point 2 Change target position without stopping the line
Transport inspected pieces to their proper destinations without stopping the line by changing the target address in mid-operation.

point 3 Change operation speed without stopping the line
Change speeds dynamically as the situation demands.

point 4 High-speed high-accuracy transportation
Change speeds dynamically as the situation demands.
Transport pieces with speed and precision provided by high frequency output.

FX3U-1PG
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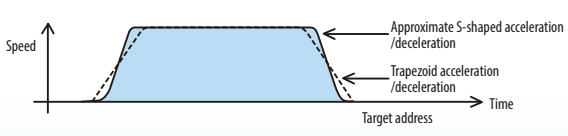
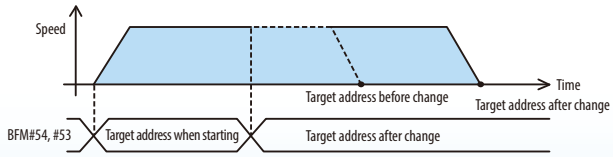
point 1 Approximate S-shaped acceleration/deceleration

Provide smooth acceleration and deceleration.



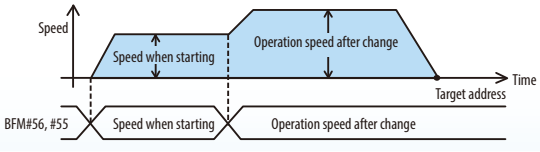
point 2 Target address change function

Change the target address during positioning operation.



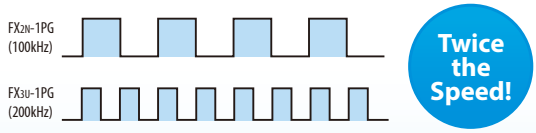
point 3 Operation speed change function

Change the running speed during positioning operation.



point 4 Maximum 200 kHz pulse train

Combine high precision with fast movements.



Driving pattern list

JOG driving	DOG type mechanical zero return	Data set type mechanical zero return	One-speed positioning	Two-speed positioning
Interrupt one-speed positioning	Interrupt two-speed positioning	Interrupt stop	External command positioning	Variable speed operation

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Power Supply Specifications

Item		Specification
Drive power supply	Input signal	24 V DC ±10% Current consumption 40 mA or less
	Output signal	For pulse output: 5 to 24 V DC Current consumption 35 mA or less For CLR signal: 5 to 24 V DC Current consumption 20 mA or less
	Inner control	5 V DC Current consumption 150 mA (Power is supplied through the extension cable from the PLC.)

Performance Specifications

Item		Specification
Number of control axes		One axis
Positioning program		Created by sequence programs (using FROM/TO instruction or direct specification of the buffer memory etc. on the MOV instruction etc.*1)
Positioning	Method	Increment, Absolute
	Unit	PLS, μm, 10^{-4}inch, mdeg
	Unit magnification	1, 10, 100, 1000-fold
	Range	-2,147,483,648 to 2,147,483,647 PLS
	Operation speed	Hz, cm/min, inch/min, 10 deg/min
	Output frequency	1 Hz to 200 kHz
	Acceleration/ deceleration process	Trapezoidal acceleration/deceleration: 1 to 32,767 ms Approximate S-shaped acceleration/deceleration: 1 to 5,000 ms
	Starting time	Motor system: 1 ms or less Machine system: 2 ms or less
Number of I/O occupied points		8 points (taken from either the input or output points of the PLC)
Corresponding PLC		FX3U series PLC: Ver. 2.20 or later, maximum number of 8 units. FX3UC series PLC*2: Ver. 2.20 or later, maximum number of 6 units.

*1. For details of other applied instructions and methods, refer to the FX3G/FX3U/FX3GC/FX3UC Programming Manual.
*2. For connection to the FX3UC PLC, the FX2NC-CNV-IF or FX3UC-1PS-5V is needed.

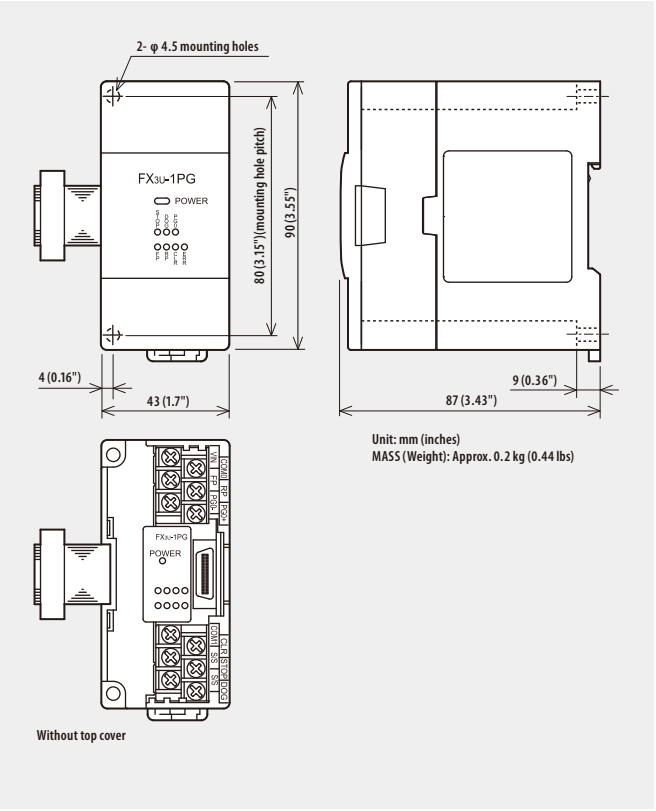
Input specifications

Item		Specification
Input signal name	Group 1	STOP:Deceleration stop input or used for interrupt input of External command positioning, Interrupt 2-speed positioning operation
		DOG:Used for DOG input of DOG type mechanical zero return operation or used for interrupt input of External command positioning, Interrupt 1-speed positioning, Interrupt stop, Interrupt 2-speed positioning operation
	Group 2	PG0: Zero point signal input Used for DOG type mechanical zero return
Group 1 (STOP, DOG)	Signal voltage	24 V DC (Power is supplied from S/S terminal.)
	Input current	7.0 mA
	ON current	4.5 mA or more
	OFF current	1.5 mA or less
	Signal form	No-voltage contact input Sink input: NPN open collector transistor Source input: PNP open collector transistor
	Response time	DOG input: 1 ms STOP input: 4 ms
	Circuit insulation	Photo-coupler insulation
	Operation display	LED ON at input ON
Group 2 (PG0)	Signal voltage	5 to 24 V DC
	Input current	20 mA or less
	ON current	4.0 mA or more
	OFF current	0.5 mA or less
	Signal form	NPN open collector transistor
	Response time	4 μs or more
	Circuit insulation	Photo-coupler insulation
	Operation display	LED ON at input ON

Output specifications

Item		Specification
Output signal name	Group 1	FP: Forward pulse or pulse train RP: Reverse pulse or direction signal
	Group 2	CLR: CLR signal
Group 1 (FP, RP)	Output form	Transistor
	Output system	Forward (FP) and reverse (RP) pulse or pulse (PLS) with direction (DIR) can be selected.
	Output frequency	1 Hz to 200 kHz
	Rated load voltage	5 to 24 V DC
	Max. load current	20 mA or less
	VIN current consumption	5 to 24 V DC 35 mA or less
	Output ON voltage	1.0 V or less
	Operation display	LED ON at output ON
Group 2 (CLR)	Output form	Transistor
	Output system	Pulse (Output pulse width: 20 ms)
	Rated load voltage	5 to 24 V DC
	Max. load current	20 mA or less
	Output ON voltage	1.5 V or less
	Operation display	LED ON at output ON

External Dimensions



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