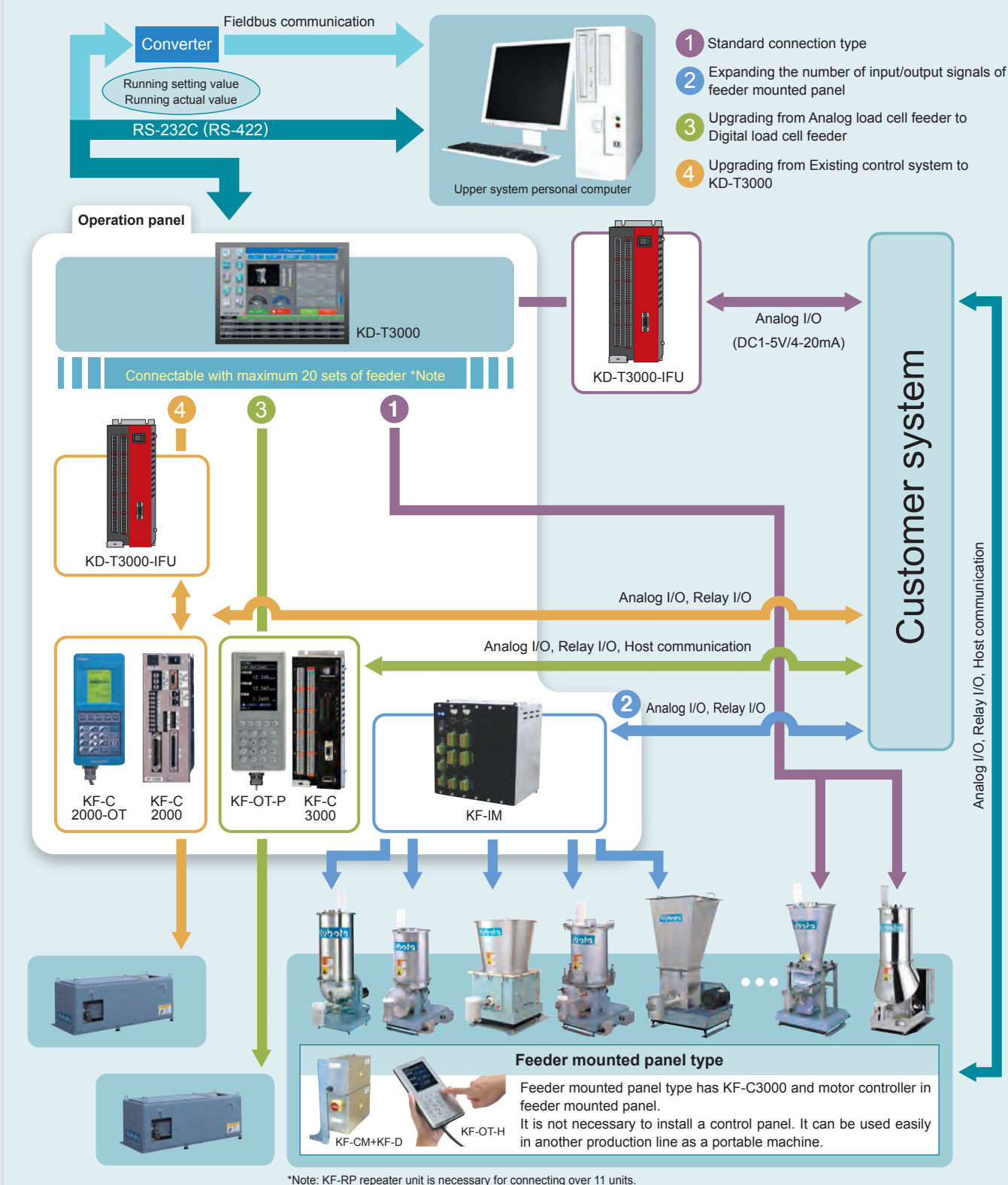


Control system

The need of Engineering Plastics is increasing for automobile and home electronics parts, due to their excellent characteristics like strength, heat resistance and ease of processing. According to this situation, Engineering Plastics are becoming more varied and the type and number of materials in production processes are increasing. For manufacturing high quality plastics, it is necessary not only to feed materials in high accuracy, but to control the quality by the traceability of the production parameters. KUBOTA offers the best control system to the customer, making the most of our know-how for material feeding systems.

System component



*Note: KF-RP repeater unit is necessary for connecting over 11 units.

Machine Side Panel System

1 Total cost saving

Trim down electrical wiring

Significantly reduces electrical wiring materials and electrical installation by the customer because the electrical wiring is completed between the KF-M3500 and the feeder.

Space effective

A large sized control panel is not required even if two or more feeders are installed.

Easy expansion

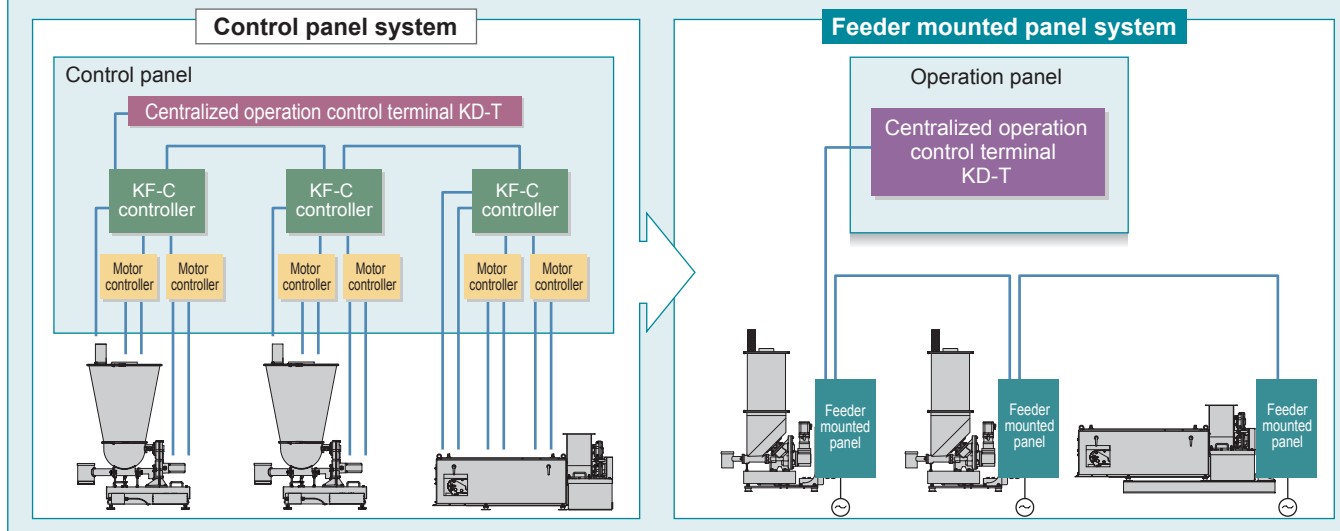
Minimizes modification of the wiring panel and electrical installation when installing additional feeders.

2 Flexible layout

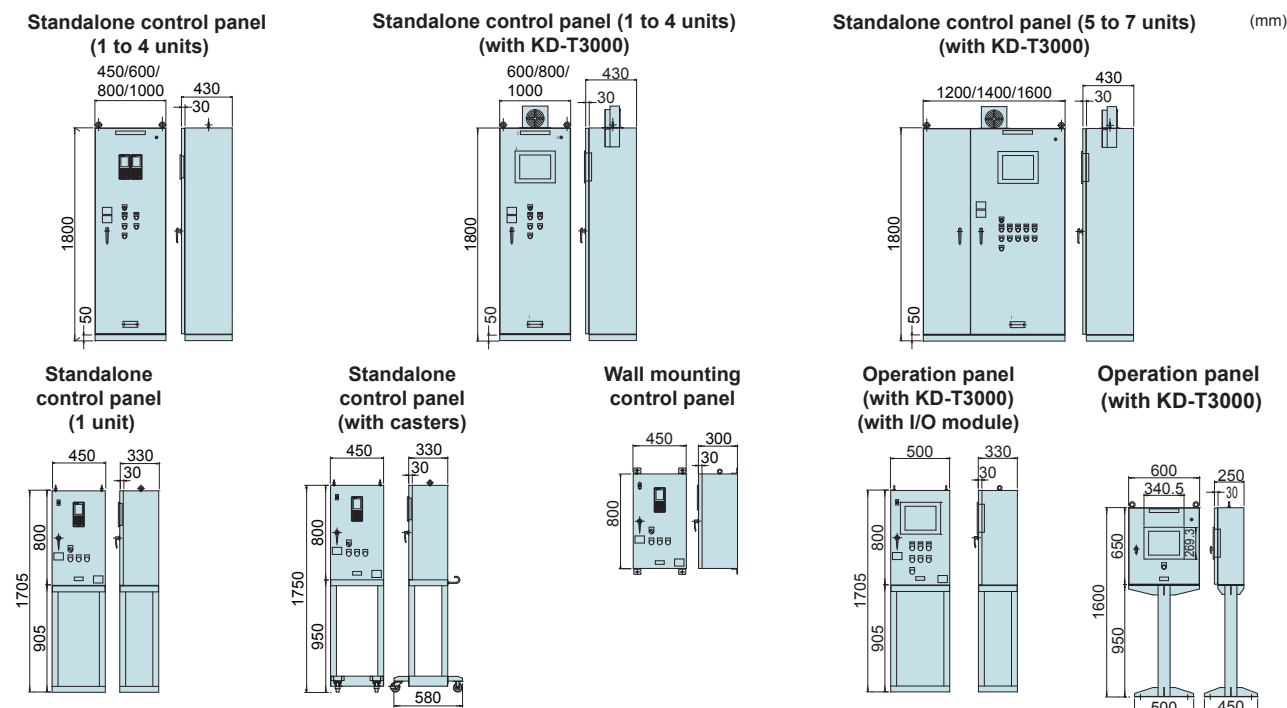
Only a few electrical cables go out from the feeder mounted panel with the connectors installed at the cable ends. Simply disconnecting the connectors lets you conveniently change the production layout.

3 Easy to start up

Feeder mounted type realize easy installation and quick start up, because cable wiring between the feeder and the feeder mounted panel has already completed.



Control panel external dimensions



Control system

KF-M Feeder mounted panel

KF-M is a feeder mounted panel including controller for loss in weight feeder and belt weighing feeder. It realizes space and wire cable saving, combining a feeder and controller into one unit.

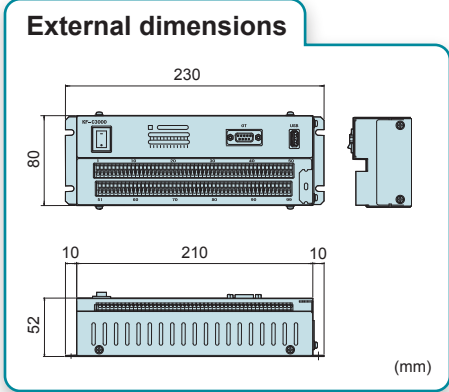


Specifications

Item		Description	
Model		KF-CM+KF-D	KF-M3500
Available models		NX,CE-W/S/R/T/M,B-WF	CE-V
Built-in controller	Feeder controller	KF-C3000	
	Driver controller	Sensorless servo amplifier X 2 (Max.)	Electromagnetic feeder controller
Weight signal input part	Internal resolution	1/4,190,000 (Max.)	
	Load cell	Digital load cell X 4 (Max.)	
Input signal from outside	Analog input	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	DC 1~5V/4~20 mA X 1ch (photocoupler isolation) Allocatable to every application freely
	Relay input	DC 24V X 12ch (photocoupler isolation) Allocatable to every application freely	DC 24V X 4ch (photocoupler isolation) Allocatable to every application freely
Output signal to outside	Analog output	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	DC 1~5V/4~20 mA X 1ch (photocoupler isolation) Allocatable to every application freely
	Relay output	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely	DC 24V X 4ch (external power, photocoupler isolation) Allocatable to every application freely
Interface	USB	USB interface X 1ch, reading or writing of various settings	
	Host communication	RS-485 X 1ch (Not able to use with KD-T3000) Communication of settings and performance data are available	RS-232C/RS-422/RS-485 X 1ch Communication of settings and performance data are available
Peripheral devices connected		KF-OT Operation terminal, KD-T3000 Centralized operation control terminal, KF-IM I/O Module	
Control mode		Continuous running manual mode, Continuous running auto mode, Batch running manual mode, Batch running auto mode	
Error detection		Feeding error, Motor error, DLC communication error, Analog I/O error etc	
Alarm detection		Flow maximum alarm, Flow minimum alarm, Deviation error, Communications error	
Operational conditions		Temperature: -10~50°C Humidity: 95% RH or less (at 25°C) [No condensation is allowed]	
Design conditions		Temperature: -20~70°C Humidity: 95% RH or less (at 25°C) [No condensation is allowed]	
Power supply		1 phase AC200~240V±10%(50Hz/60Hz)	1 phase AC200~220V±10% (50Hz/60Hz)
Protection		IP65	
Dimensions (mm)	KF-CM: 304(W)×161(H)×128(D)mm	300(W) X 335(H) X 150(D) / 300(W) X 335(H) X 170(D)	
	KF-D: 304(W)×202(H)×156(D)mm		
Weight		Approx. 10kg	Approx. 13kg

KF-C3000 Controller

KF-C3000 controller is available for loss in weight feeder, belt weighing feeder, constant feed weigher and conveyor belt scale. Stable feeding performance is realized by P/I control.

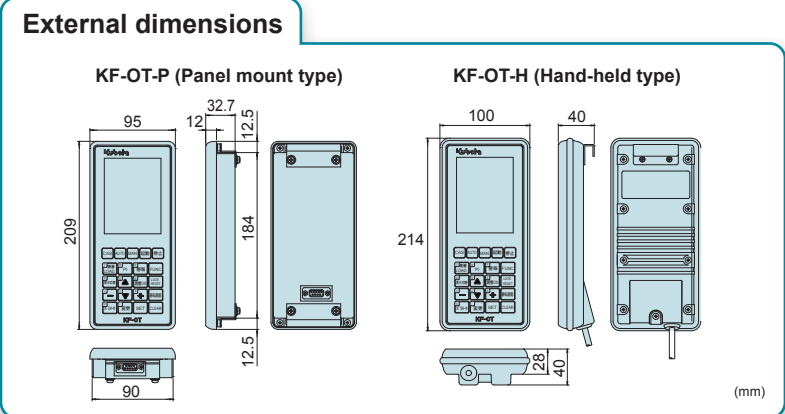


Specifications

Item		Description	
Available models		Loss-in-weight Feeder, Belt Weighting feeder, Constant feed weigher, Conveyor belt scale	
Weight signal input part	Internal resolution	1/4,190,000(Max.)	
	Load cell	Digital load cell X 4(Max.)	
Control output part	Control output	DC 0~10V(photocoupler isolation) RS-485 X 1ch	
	Speed pulse input	DC 5/12V(photocoupler isolation)	
Input signal from outside	Analog input	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	
	Relay input	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely	
Output signal to outside	Analog output	DC 1~5V/4~20 mA X 3ch (photocoupler isolation) Allocatable to every application freely	
	Relay output	DC 24V X 12ch (external power, photocoupler isolation) Allocatable to every application freely	
Interface	USB	USB interface X 1ch, reading or writing of various settings	
	Host communication	RS-485 X 1ch (Not able to use with KD-T3000) Communication of settings and performance data are available In case other than sensorless servo, RS-232C / RS-422 / RS-485 X 1ch Communication of settings and performance data are available	
Peripheral devices connected		KF-OT Operation terminal KD-T3000 Centralized Operation Control terminal	
Control mode		Continuous running manual mode, Continuous running auto mode, Batch running manual mode, Batch running auto mode	
Error detection		Feeding error, Motor error, DLC communication error, Analog I/O error etc	
Alarm detection		Flow maximum alarm, Flow minimum alarm, Deviation error, Communications error	
Operational conditions		Temperature: -5°C~45°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]	
Design conditions		Temperature: -20°C~70°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]	
Power supply		DC18~24V±10%	
Dimensions (mm)		230(W) X 80(H) X 52(D)	
Weight		Approx. 1kg	

KF-OT Operation terminal

KF-OT is used for feeder running and the external communication settings Easy to check the feeder running situation (actual flow, alarm, etc), with Color LCD display. KF-OT is available in Panel mount or Hand-held types depending on installation requirement.

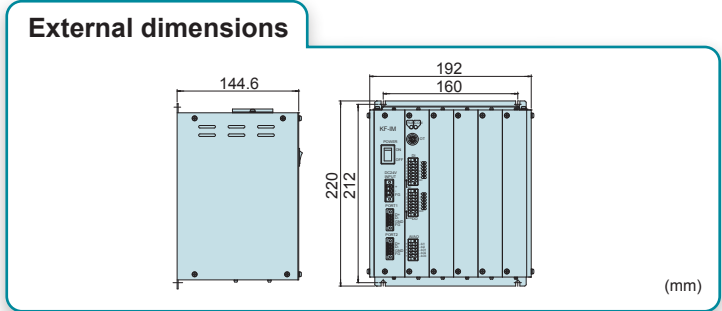


Specifications

Descriptions		KF-OT-P (Panel mount type)	KF-OT-H (Handy type)
Display	Display method	Color LCD with LED back light	
	Effective display area	62mm X 83mm	
	Resolution	240 X 320 dots	
	Language	Japanese, English, Chinese, Korean	
Operation key	Number key	1~9, period	
	Running key	Run, Stop	
	Others	Shortcut key for Running mode, Error, Alarm etc	
Communication specification	Connection	RS-485	
	Connection distance	Under 200 m	
	Power supply	From controller	
Operational Conditions		Temperature: -5~+50°C, Humidity: 85%RH or Less (No condensation is allowed)	
Design conditions		Temperature: -20~+70°C, Humidity: 85%RH or Less (No condensation is allowed)	
Protection		—	IP65
Weight		Approx. 0.6kg	Approx. 0.5kg

KF-IM Module

I/O module expands the number of input/output signals, used when the number of I/O ports of the standard equipment are insufficient. It can be connected to DCS or PLC which is installed remote from KF-M3500.



Specifications

Item		Description	
Number of additionally installed I/O boards		5 boards (Each board can be connected with one KF-CM+KF-D/KF-M3500.)	
Input/output signals (per 1 board)	Analog input	DC 1~5V/4~20mA X 2ch (photocoupler isolation)	Ability to allocate each usage freely
	Relay input	DC 24V X 12ch (external power, photocoupler isolation)	Ability to allocate each usage freely
	Analog output	DC 1~5V/4~20mA X 3ch (photocoupler isolation)	Ability to allocate each usage freely
	Relay output	DC 24V X 12ch (external power, photocoupler isolation)	Ability to allocate each usage freely
Power supply		DC 24V±5%	
Operational conditions		Temperature: -5°C~45°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]	
Design conditions		Temperature: -20°C~70°C Humidity: 85% RH or less (at 25°C) [No condensation is allowed]	
Dimensions (mm)		192(W) X 220(H) X 144.6(D)	
Weight		Approx. 3kg	