

# Identifications

## DUT series protective relays

Example **D U T U A H A S** - **2**     -

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### ① Basic type

DUT : Single type digital protective relay

### ② Construction

U : Unit standard structure type, DC auxiliary energizing source  
 A : Unit standard structure type, AC auxiliary energizing source  
 R : DQ series replacement type, DC auxiliary energizing source  
 B : DQ series replacement type, AC auxiliary energizing source  
 T : Testing tool

### ③ Name (Function)

A : Overcurrent relay  
 B : Undercurrent relay  
 C : Ground overcurrent relay for non-ground line  
 D : Ground directional relay  
 E : Ground overcurrent relay  
 F : Field ground overcurrent relay  
 G : Ground overvoltage relay  
 J : Ground directional relay for resistance grounded neutral system  
 K : Phase directional relay  
 L : Reverse power relay  
 U : Undervoltage relay  
 V : Overvoltage relay

### ④ Characteristics

H : Inverse time-lag  
 T : Independent time-lag  
 N : Inverse time-lag (Noise immunity conforming to standard of B-402)  
 M : Independent time-lag (Noise immunity conforming to standard of B-402)  
 D : Independent time-lag (DC input)  
 F : Inverse time-lag (A wind frequency band)  
 G : Independent time-lag (A wind frequency band)

### ⑤ No. of input

A : One input  
 B : Two inputs (Directional relay etc. : one input in the current, one input in the voltage)  
 C : Three inputs

### ⑥ Output duration and operation display hold function

S : Slow reset (1±0.1s), Display hold function: Provided  
 K : Instantaneous reset (0.2±0.1s), Display hold function: Provided  
 A : Instantaneous reset (0.2±0.1s), Display hold function: Not provided

### ⑦ Development order

### ⑧ Rated frequency

5 : 50Hz  
 6 : 60Hz  
 1 : DC rating

## ⑨ Rating and setting range

Name	Code symbol	Inverse time-lag	Instantaneous	Independent time-lag	
		Rated current 5A			
Overcurrent relay	CC	1 to 6A	5 to 40A		
	DD	2 to 12A	10 to 80A		
	CE			1 to 6A	
	DE			2 to 12A	
	Rated current 1A				
	HH	0.2 to 1.2A	1 to 8A		
	JJ	0.4 to 2.4A	2 to 16A		
	HK			0.2 to 1.2A	
	JK			0.4 to 2.4A	
	Ground overcurrent relay	Rated current 5A			
AA		0.1 to 0.8A	0.5 to 4A		
BB		0.5 to 4A	2.5 to 20A		
AE				0.1 to 0.8A	
BE				0.5 to 4A	
Rated current 1A					
FF		0.02 to 0.16A	0.1 to 0.8A		
GG		0.1 to 0.8A	0.5 to 4A		
FK				0.02 to 0.16A	
GK				0.1 to 0.8A	

Name	Code symbol	Rated voltage	Operation setting
Overvoltage relay	GD	110V	60 to 150V
Ground overvoltage relay	GA	110V	5 to 50V
	GB		5 to 70V
	DA	190V	5 to 50V
	DB		5 to 70V
Undervoltage relay	JG	63.5V	10 to 60V
	GH	110V	15 to 100V

Name	Code symbol	Rated voltage (3Vo)	Rated current (3Io)	Operate voltage	Operate current	Max. sensitivity phase angle (θ)	Operate time
Ground directional relay	AA	110V	2A	5 to 30V	1 to 10mA	45 to 75°	0 to 3s
	AB	190V					
	BA	110V			10 to 100mA		
	BB	190V					

Name	Code symbol	Rated voltage (3Vo)	Rated current (3Io,lo)	Operate voltage	Operate current	Max. sensitivity phase angle (θ)	Operate time
Ground directional relay for resistance grounded neutral system	CD	110V	5A	5 to 20V	0.1 to 0.8A	0 to 30°	0 to 30s
	CE	190V					
	DD	110V			0.5 to 3.0A		
	DE	190V					
	ED	110V	1A		0.02 to 0.16A		
	EE	190V					
	FD	110V			0.1 to 0.6A		
	FE	190V					

Name	Code symbol	Rated voltage (3Vo)	Rated current (3Io)	Operate voltage	Operate current	Max. sensitivity phase angle (θ)	Operate time
Phase directional relay	AN	110V	5A	2.2V	0.1 to 1.0A	45° (fixed)	0 to 3s
	BN			(fixed)	1 to 8A		
	CN				2 to 12A		
	DN		1A		0.2 to 1.6A		
	EN				0.4 to 2.4A		

Name	Code symbol	Rated voltage (3Vo)	Rated current (3Io)	Operate voltage	Operate current	Max. sensitivity phase angle (θ)	Operate time
Reverse power relay	FS	110V	5A	5.5V(fixed)	15 to	0° (fixed)	0 to 30s
	FT	115V		5.8V(fixed)	100mA		
	GS	110V		5.5V(fixed)	100 to		
	GT	115V		5.8V(fixed)	500mA		
	HS	110V	1A	5.5V(fixed)	15 to		
	HT	115V		5.8V(fixed)	100mA		

Name	Code symbol	Rated current	Operation setting
Ground overcurrent relay for non-ground line	AL	2A	1.5 to 15mA
	BL		10 to 100mA
	CL		40 to 400mA

Name	Code symbol	Rated current DC	Operation setting DC
DC overcurrent and undercurrent relay	AN	50mA	5 to 12mA
	BN	100mA	10 to 80mA
	CN	2A	0.08 to 1A
	DN	10A	1 to 6A

Name	Code symbol	Rated voltage DC	Operation setting DC
DC over voltage and under voltage relay	AP	110V	10 to 100V
	BP	220V	10 to 120V
	CP	500V	40 to 250V
	MP	100%=300mV	20 to 150%
	NP	100%=150mV	40 to 200%
	PP	100%=100mV	60 to 300%
	RP	100%=60mV	100 to 500%

Note) One external resistor (type: YZ3) meeting various specifications is attached to a DC overvoltage and undervoltage relay.

Name	Code symbol	Rated voltage	Operation setting DC	External auxiliary power source box Auxiliary energizing source voltage (50/60 Hz) * Power output: 50V DC
Field ground overcurrent relay	AR	Applicable field voltage: 500V DC or less	5 to 8mA	100V AC
	AS			110V AC
	AT			120V AC
	AR			200V AC
	AV			220V AC

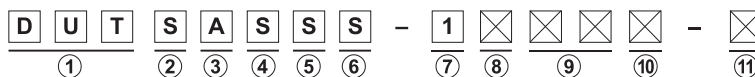
## ⑩ Reted auxiliary energizing source voltage

Code symbol	Rated voltage	Code symbol	Rated voltage	Code symbol	Rated voltage
C	100V DC	J	100V AC, 50Hz	R	200V AC, 50Hz
D	110V DC	K	100V AC, 60Hz	S	200V AC, 60Hz
E	125V DC	L	110V AC, 50Hz	T	220V AC, 50Hz
F	200V DC	M	110V AC, 60Hz	U	220V AC, 60Hz
G	220V DC	N	127V AC, 50Hz	V	250V AC, 50Hz
H	250V DC	P	127V AC, 60Hz	W	250V AC, 60Hz

## ⑪ Special specifications

For standard products with English nameplate, black (Munsell code N1.5) frame of the relay case, and without special processing for tropical use, this need not be specified. For details, contact Fuji.

## Complex-element relay



### ① Basic type

DUT : Single type digital protective relay

### ② Construction

S : Complex-element relay  
DC auxiliary energizing source  
(Case and cover made of iron plate)

### ③ Name (Function)

A : 3OCR  
E : 3OCR+EFR  
D : 2OCR+DGR

### ④ Characteristics

S : Complex-element structure

### ⑤ No. of input

S : Complex-element structure

### ⑥ Output duration and operation display hold function

S : Slow reset (1s±0.1s), with indication holding function  
K : Instantaneous reset (0.2s±0.1s), without indication holding function

### ⑦ Development order

### ⑧ Rated frequency

5: 50Hz  
6: 60Hz

### ⑨ Rating and setting range

#### • 3OCR

Code symbol	Ratings	Setting range	
		Overcurrent element : 3OCR	
		Inverce time element	Instantaneous element
CC	5A	1 to 6A	5 to 40A
DD		2 to 12A	10 to 80A
HH	1A	0.2 to 1.2A	1 to 8A
JJ		0.4 to 2.4A	2 to 16A

#### • 3OCR+EFR

Code symbol	Ratings	Setting range		
		Overcurrent element : 3OCR		Earth-fault overcurrent element : EFR
		Inverce time element	Instantaneous element	Inverce time element
CA	5A	1 to 6A	5 to 40A	0.1 to 0.8A
DA		2 to 12A	10 to 80A	0.1 to 0.8A
CB		1 to 6A	5 to 40A	0.5 to 4.0A
DB		2 to 12A	10 to 80A	0.5 to 4.0A
HF	1A	0.2 to 1.2A	1 to 8A	0.02 to 0.16A
JF		0.4 to 2.4A	2 to 16A	0.02 to 0.16A
HG		0.2 to 1.2A	1 to 8A	0.1 to 0.8A
JG		0.4 to 2.4A	2 to 16A	0.1 to 0.8A

#### • 2OCR+DGR

Code symbol	Setting range					
	Overcurrent element : 2OCR			Earth-fault directional element : DGR		
	Ratings	Inverce time element	Instantaneous element	Ratings		
				3Io	3Vo	Operation voltage setting : 5 to 30V Max. sensitivity phase angle setting : 45 to 75° Operation time setting : 0 to 3s Operation current setting
CK	5A	1 to 6A	5 to 40A	2A	110V	1 to 10mA
DL		2 to 12A	10 to 80A			10 to 100mA
CM		1 to 6A	5 to 40A		190V	1 to 10mA
DN		2 to 12A	10 to 80A			10 to 100mA
CL		1 to 6A	5 to 40A		110V	10 to 100mA
DK		2 to 12A	10 to 80A			1 to 10mA
CN		1 to 6A	5 to 40A		190V	10 to 100mA
DM		2 to 12A	10 to 80A			1 to 10mA
HK	1A	0.2 to 1.2A	1 to 8A	2A	110V	1 to 10mA
JL		0.4 to 2.4A	2 to 16A			10 to 100mA
HM		0.2 to 1.2A	1 to 8A		190V	1 to 10mA
JN		0.4 to 2.4A	2 to 16A			10 to 100mA
HL		0.2 to 1.2A	1 to 8A		110V	10 to 100mA
JK		0.4 to 2.4A	2 to 16A			1 to 10mA
HN		0.2 to 1.2A	1 to 8A		190V	10 to 100mA
JM		0.4 to 2.4A	2 to 16A			1 to 10mA

### ⑩ Rated auxiliary energizing source voltage

Code symbol	Rated voltage
C	100V DC
D	110V DC
E	125V DC

### ⑪ Special specifications

For standard products with English nameplate, black (Munsell code N1.5) frame of the relay case, and without special processing for tropical use, this need not be specified. For details, contact Fuji.