

entry:
call void @llvm.dbg.value(metadata %struct.INPUT_VAL* %input, metadata !32, ... metadata !DIExpression()), !dbg !44
call void @llvm.dbg.value(metadata %struct.RETURN_VAL* %ret_val, metadata ... !33, metadata !DIExpression()), !dbg !45
%temperature = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* ... %input, i64 0, i32 0, !dbg !46
%tmp = load double, double* %temperature, align 8, !dbg !46, !tbaa !47
call void @llvm.dbg.value(metadata double %tmp, metadata !38, metadata ... !DIExpression()), !dbg !53
%c1 = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* %input, ... i64 0, i32 1, !dbg !54
%tmp1 = load double, double* %c1, align 8, !dbg !54, !tbaa !55
call void @llvm.dbg.value(metadata double %tmp1, metadata !39, metadata ... !DIExpression()), !dbg !56
%c2 = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* %input, ... i64 0, i32 2, !dbg !57
%tmp2 = load double, double* %c2, align 8, !dbg !57, !tbaa !58
call void @llvm.dbg.value(metadata double %tmp2, metadata !40, metadata ... !DIExpression()), !dbg !59
%state_r1 = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* ... %input, i64 0, i32 3, !dbg !60
%tmp3 = load i32, i32* %state_r1, align 8, !dbg !60, !tbaa !61
call void @llvm.dbg.value(metadata i32 %tmp3, metadata !41, metadata ... !DIExpression()), !dbg !62
%state_r2 = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* ... %input, i64 0, i32 4, !dbg !63
%tmp4 = load i32, i32* %state_r2, align 4, !dbg !63, !tbaa !64
call void @llvm.dbg.value(metadata i32 %tmp4, metadata !42, metadata ... !DIExpression()), !dbg !65
%shutdown = getelementptr inbounds %struct.INPUT_VAL, %struct.INPUT_VAL* ... %input, i64 0, i32 5, !dbg !66
%tmp5 = load i32, i32* %shutdown, align 8, !dbg !66, !tbaa !67
call void @llvm.dbg.value(metadata i32 %tmp5, metadata !43, metadata ... !DIExpression()), !dbg !68
call void @llvm.dbg.value(metadata double %tmp1, metadata !36, metadata ... !DIExpression()), !dbg !69
call void @llvm.dbg.value(metadata double %tmp2, metadata !37, metadata ... !DIExpression()), !dbg !70
%cmp = fcmp ole double %tmp, 5.500000e+02, !dbg !71
%tmp6 = or i32 %tmp4, %tmp3, !dbg !73
%tmp7 = icmp eq i32 %tmp6, 0, !dbg !73
%tmp8 = and i1 %cmp, %tmp7, !dbg !73
br i1 %tmp8, label %if.end46, label %if.else, !dbg !73

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if.else:
%cmp4 = fcmp oge double %tmp, 5.500000e+02, !dbg !74
%cmp6 = fcmp oge double %tmp1, 2.000000e+01, !dbg !76
%or.cond53 = and i1 %cmp4, %cmp6, !dbg !77
br i1 %or.cond53, label %if.end46, label %if.else8, !dbg !77

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if.else8:
%cmp11 = fcmp oge double %tmp2, 2.000000e+01, !dbg !78
%or.cond54 = and i1 %cmp4, %cmp11, !dbg !80
br i1 %or.cond54, label %if.end46, label %if.else13, !dbg !80

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if.else13:
%cmp16 = fcmp olt double %tmp1, 2.000000e+01, !dbg !81
%or.cond55 = and i1 %cmp4, %cmp16, !dbg !83
%cmp18 = fcmp olt double %tmp2, 2.000000e+01, !dbg !84
%or.cond56 = and i1 %or.cond55, %cmp18, !dbg !83
br i1 %or.cond56, label %if.end46, label %if.else20, !dbg !83

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if.else20:
%cmp21 = fcmp ole double %tmp, 5.100000e+02, !dbg !85
%cmp23 = icmp eq i32 %tmp3, 1, !dbg !87
%or.cond57 = and i1 %cmp21, %cmp23, !dbg !88
br i1 %or.cond57, label %if.end46, label %if.else25, !dbg !88

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if.else25:
%cmp28 = icmp eq i32 %tmp4, 1, !dbg !89
%or.cond58 = and i1 %cmp21, %cmp28, !dbg !91
br i1 %or.cond58, label %if.end46, label %if.else30, !dbg !91

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if.else30:
%cmp31 = fcmp oge double %tmp, 5.100000e+02, !dbg !92
%or.cond59 = and i1 %cmp31, %cmp23, !dbg !94
%not.or.cond59 = xor i1 %or.cond59, true, !dbg !94
%spec.select = zext i1 %not.or.cond59 to i32, !dbg !94
%spec.select100 = zext i1 %or.cond59 to i32, !dbg !94
br label %if.end46, !dbg !94

if.end46:
%out_c2.0 = phi double [%tmp2, %entry], [%tmp2, %if.else], [%tmp2, ... %if.else8], [%tmp2, %if.else13], [%tmp2, %if.else20], [0.000000e+00, ... %if.else25], [%tmp2, %if.else30], !dbg !95
%out_c1.0 = phi double [%tmp1, %entry], [%tmp1, %if.else], [%tmp1, ... %if.else8], [%tmp1, %if.else13], [0.000000e+00, %if.else20], [%tmp1, ... %if.else25], [%tmp1, %if.else30], !dbg !95
%out_r2.0 = phi i32 [0, %entry], [0, %if.else], [1, %if.else8], [1, ... %if.else13], [0, %if.else20], [0, %if.else25], [%spec.select, ... %if.else30]
%out_r1.0 = phi i32 [0, %entry], [1, %if.else], [0, %if.else8], [0, ... %if.else13], [0, %if.else20], [0, %if.else25], [%spec.select100, ... %if.else30]
%out_shut_down.0 = phi i32 [%tmp5, %entry], [%tmp5, %if.else], [%tmp5, ... %if.else8], [1, %if.else13], [%tmp5, %if.else20], [%tmp5, %if.else25], ... [%tmp5, %if.else30], !dbg !95
call void @llvm.dbg.value(metadata %out_shut_down.0, metadata !43, ... metadata !DIExpression()), !dbg !68
call void @llvm.dbg.value(metadata i32 %out_r1.0, metadata !34, metadata ... !DIExpression()), !dbg !96
call void @llvm.dbg.value(metadata i32 %out_r2.0, metadata !35, metadata ... !DIExpression()), !dbg !97
call void @llvm.dbg.value(metadata double %out_c1.0, metadata !36, metadata ... !DIExpression()), !dbg !69
call void @llvm.dbg.value(metadata double %out_c2.0, metadata !37, metadata ... !DIExpression()), !dbg !70
%r1 = getelementptr inbounds %struct.RETURN_VAL, %struct.RETURN_VAL* ... %ret_val, i64 0, i32 0, !dbg !98
store i32 %out_r1.0, i32* %r1, align 4, !dbg !99, !tbaa !100
%r2 = getelementptr inbounds %struct.RETURN_VAL, %struct.RETURN_VAL* ... %ret_val, i64 0, i32 1, !dbg !102
store i32 %out_r2.0, i32* %r2, align 4, !dbg !103, !tbaa !104
store double %out_c1.0, double* %c1, align 8, !dbg !105, !tbaa !55
store double %out_c2.0, double* %c2, align 8, !dbg !106, !tbaa !58
store i32 %out_r1.0, i32* %state_r1, align 8, !dbg !107, !tbaa !61
store i32 %out_r2.0, i32* %state_r2, align 4, !dbg !108, !tbaa !64
store i32 %out_shut_down.0, i32* %shutdown, align 8, !dbg !109, !tbaa !67
ret i8* null, !dbg !110

CFG for 'controller' function